



Advances in ENVIRONMENTAL LAW

Foreword by
Prof. Dr. Anatoly Getman

Edited by
Dr. Hasrat Arjjumend



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TABLE OF CONTENTS

Abbreviations		ix-xiii
List of Tables and Figures		xiv
Foreword		xv-xix
Chapter 1	Introduction to Advances in Environmental Law - <i>Hasrat Arjjumend</i>	1-20
Chapter 2	The Ecosystem Approach in International Environmental Law before the Convention on Biological Diversity - <i>Yevhenii Suietnov</i>	21-70
Chapter 3	Environmental Justice and Globalization: Putting a Focus on Indigenous Peoples and Local Community Rights and Perspectives - <i>Álvaro Augusto Sanabria-Rangel</i>	71-96
Chapter 4	Ecosystem Approach in Dealing with Invasive Alien Species: International, European and Ukrainian Experience of Legal Regulation - <i>Yevhenii Suietnov, Elbis Tulina</i>	97-124
Chapter 5	Conceptual Challenges to the Recognition and Enforcement of the Right to Clean, Safe and Healthy Environment - <i>Brown Etareri Umukoro, Oghenerukevwe Ituru</i>	125-160
Chapter 6	Prospects and Challenges to Prove Environmental Harm in Litigation: Status Quo in Nigeria - <i>Awodezi Henry</i>	161-182
Chapter 7	International Trade and Environmental Protection: Revisiting David Hunter's "Invisible Elbow Destroying the Common Goods Created by an Invisible Hand" - <i>Peter Nyeronvwo Komiti</i>	183-208

Chapter 8	International Law Application to Transboundary Pollution: Solutions to Mitigate Mining Contamination in the Elk–Kootenai River Watershed - <i>Kieran Simpson, Ben R. Collison</i>	209-244
Chapter 9	Convergence of Environmental and Economic Law in the Sphere of Environmental Protection and Natural Resource Management in Ukraine - <i>Viktoriia Bredikhina, Dmitro Zadykhaylo</i>	245-274
Chapter 10	The Legal Landscape of Climate Change in Ukraine: Challenges and Prospects - <i>Ievgeniia Kopytsia</i>	275-302
Chapter 11	The Extent of Causality and Burden of Proof for Climate Related Intangible Loss Damage in At-Risk Settlements (Fiji Islands) - <i>Dan Frederick Orcherton</i>	303-334
Chapter 12	Using Clean Energy for Sustainable Development in Vietnam: Facts and Solutions - <i>Pham Thanh Nga</i>	335-356
Chapter 13	Integrating Water, Energy, and Food Strategies: Impact on Malawi's Sustainable Development Goals Achievement - <i>Ngozi Finette Unuigbo, Aizenose Promise Ehizojie</i>	357-398
Chapter 14	The Role of Energy Directives in Ensuring EU Energy Security and the Problems of Implementation in Ukrainian Legislation - <i>Ievgenii Shulga, Nataliia Shynkaruk, Stanislav Shytiy, Ievgen Antypov</i>	399-424
Chapter 15	Ukrainian Reform of State Power Decentralization as a Way to Sustainable Development: Ecological	425-470

	and Legal Aspects	
	- <i>Olena Zaiets, Tetiana Kovalenko, Tetiana Shokha, Yulyia Vlasenko, Elina Pozniak</i>	
Chapter 16	Legal Dimensions of Environmental Policy in Ukraine	471-504
	- <i>Sergii Marko, Vitaliy Kovalenko, Oleksandr Kolb, Olena Bondarenko, Sandra Boldizhar</i>	
Chapter 17	The Relationship between Environmental Policy and Foreign Direct Investment	505-532
	- <i>Alla Pecheniuk, Iryna Mushenyk, Nataliia Korzh, Iryna Mazurkevych, Nadiia Oliinuk</i>	
Chapter 18	Conclusion	533-550
	- <i>Hasrat Arjjumend</i>	
List of Reviewers		551-555
About the Editor		556

ABBREVIATIONS

Chapter 1

DRR	Disaster Risk Reduction
EU	European Union
L&D	Loss and Damage
PEA	Probabilistic Event Attribution
WTO	World Trade Organisation

Chapter 2

AEPS	Arctic Environmental Protection Strategy
ASEAN	Association of Southeast Asian Nations
CAFF	Conservation of Arctic Flora and Fauna
CAMLR	Convention on the Conservation of Antarctic Marine Living Resources or Canberra Convention
CBD	Convention on Biological Diversity
CCAMLR	Conservation of Antarctic Marine Living Resources
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
COP	Conference of the Parties
GLWQA	Great Lakes Water Quality Agreement
IUCN	International Union for Conservation of Nature and Natural Resources
OSPAR	Convention for the Protection of the Marine Environment of the North-East Atlantic
UNCED	United Nations Conference on Environment and Development
UNCHE	United Nations Conference on the Human Environment in Stockholm
UNCLOS	United Nations Convention on the Law of the Sea
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environmental Programme
UNFCCC	United Nations Framework Convention on Climate Change
WCED	World Commission on Environment and Development
WCN	World Charter for Nature

WCS World Conservation Strategy

Chapter 3

FPIC Prior and Informed Consent
NGOs Non-Governmental Organizations
UNDRIP United Nations Declaration on the Rights of Indigenous Peoples

Chapter 4

CBD Convention on Biological Diversity
COP Conference of the Parties
EASIN European Alien Species Information Network
EU European Union
GEF Global Environment Facility
IAS Invasive Alien Species
SBSTTA Subsidiary Body on Scientific, Technical and Technological Advice

Chapter 5

WHO World Health Organisation

Chapter 7

CBD Convention on Biological Diversity
CBDR Common but Differentiated Responsibility
CITES Convention on International Trade in Endangered Species of Wild Fauna and Flora
COP Conference of Parties
DRB Dispute Resolution Body
EU European Union
GATT General Agreement on Trade and Tariff
GHG Greenhouse Gas
ICJ International Court of Justice
NDCs Nationally Determined Contributions
OPEC Organisation of Petroleum Exporting Countries
UNCLOS United Nations Convention on the Law of the Sea

UNFCCC	United Nations Framework Convention on Climate Change
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Chapter 8

BC	British Columbia
CRT	Columbia River Treaty
IJC	International Joint Commission
IWI	International Watersheds Initiative
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UNECE	United Nations Economic Commission for Europe Convention on the Protection and Use of Transboundary Watercourses and International Lakes

Chapter 9

CO ₂	Carbon Dioxide
EU	European Union
SDGs	Sustainable Development Goals
UNCED	UN Conference on Environment and Development

Chapter 10

CO ₂	Carbon Dioxide
EGD	European Green Deal
EU ETS	European Emissions Trading System
EU	European Union
GHG	Greenhouse Gas Emissions
LEDs	Low Emission Development Strategy
NDC	Nationally Determined Contribution
NECPs	National Energy and Climate Plans
SO ₂	Sulphur Dioxide
UNFCCC	United Nations Framework Convention on Climate Change

Chapter 11

AOSIS	Alliance of Small Island States
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COP	Conference of Parties
GFDRR	Global Facility for Disaster Reduction and Recovery
GHG	Greenhouse Gas
IPCC	Intergovernmental Panel on Climate Change
L&D	Loss and Damage
NELD	Non-Economic Loss and Damage
PEA	Probabilistic Event Attribution
SIDS	Small Island Developing States
WIM	Warsaw International Mechanism

Chapter 12

EVN	Electricity Vietnam Group
GHG	Greenhouse Gas
IRENA	International Renewable Energy Agency
LCOE	Cost of Residential Electricity
NDC	Nationally Determined Contribution
ODA	Overseas Development Assistance
SDGs	Sustainable Development Goals

Chapter 13

APF	Agricultural Policy Framework
ASWAp	Agricultural Sector Wide Approach process
CAAPD	Comprehensive Africa Agriculture Development Programme
CCVI	Climate Change Vulnerability Index
ESCOM	Electricity Supply Corporation of Malawi
FISP	Farm Input Subsidy Program
IMT	Irrigation Management Transfer
IPPs	Independent Power Producers
NEP	National Energy Policy
NEPAD	New Partnership for African Development
NIPDS	National Irrigation Policy and Development Strategy
NSREP	National Sustainable and Renewable Energy Programme
PSRS	Power Sector Reform Strategy
SDGs	Sustainable Development Goals
WEF	Water, Energy and Food

WRM	Water Resources Management
WRUs	Water Resources Units

Chapter 14

CO ₂	Carbon Dioxide
EU	European Union

Chapter 15

LCU	Land Code of Ukraine
NGOs	Non-Governmental Organizations
OTGs	Ordinary Territorial Communities
SDGs	Sustainable Development Goals
SSR	Socialist Soviet Republic
UTCs	United Territorial Communities

Chapter 16

EIA	Environmental Impact Assessment
EU	European Union
GSD	Goals of Sustainable Development
SDGs	Sustainable Development Goals

Chapter 17

FDI	Foreign Direct Investment
CO ₂	Carbon Dioxide
EF	Ecological Footprints
EIB	European Investment Bank
EU	European Union
EPA	Environmental Protection Agency
SNMI	Sustainable Nitrogen Management Index

Chapter 18

EU	European Union
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LIST OF TABLES & FIGURES

Chapter 11	Figure 1: 20 SIDS (Pacific Islands Small Island Developing States)	p.307
Chapter 13	Figure 1: Projected increases in total average water demand (Ml/day) from 2010 baseline	p.371
	Figure 2: Reliance on hydropower and access to electricity with water availability per head represented by the size of the circles	p. 371
	Figure 4: SDG-Malawi Vision 2020	p.383
	Figure 5: The Influence of Inclusivity and Capacity Development	p.391
Chapter 17	Table 1: The main hypotheses of the relationship between direct foreign investment and environmental indicators	p.512
	Table 2: Foreign Direct Investments	p.515
	Table 3: Total emissions of greenhouse gases	p.516
	Table 4: Generation and management of waste	p.516
	Table 5: Current environmental protection costs	p.517
	Table 6: Mineral fertilizers	p.518
	Table 7: Organic fertilizers	p.519
	Table 8: Land area of nature reserves	p.519
	Table 9: Total supply of energy from renewable sources, in thousand toe (ton on energy fuel)	p.520
	Table 10: The level of innovativeness of Ukraine	p.520
	Figure 1: Correlation between foreign direct investment and waste generation	p.518
	Figure 2: Correlation between direct foreign investment and the level of innovativeness of the country	p.521
	Figure 3: Forecast values of waste generation	p.521
	Figure 4: Forecast of current costs for environmental protection	p.522
	Figure 5: Forecast of the level of innovativeness of Ukraine	p.522

Introduction to Advances in Environmental Law

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ABSTRACT

The collective exploration of environmental law and policy presents a nuanced tapestry of challenges and solutions within the global and regional contexts. The historical analysis illuminates the groundwork for the ecosystem approach in international environmental law, providing a foundation for subsequent developments. Themes of environmental justice, Indigenous rights, litigation challenges, and invasive species emphasize the need for comprehensive legal frameworks. The delicate balance between international trade and environmental protection is highlighted, along with insights into climate change, clean energy adoption, foreign direct investment, and sustainable development. These diverse topics underscore the intricate relationships between legal frameworks, environmental issues, and societal well-being. The authored chapters collectively advocate for innovative policies, international collaboration, and integrating environmental considerations into legal structures. Insights offered contribute to a holistic understanding of environmental law's multifaceted nature and its crucial role in steering sustainable development. Ukraine's experiences serve as a microcosm, offering valuable lessons and potential pathways for other nations navigating similar challenges in the pursuit of a harmonious balance between environmental conservation and human progress.

Keywords: Environmental Law; Sustainable Development; Legal Frameworks; Global Challenges; Ukraine's Experience

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The book, "Advances in Environmental Law", is a groundbreaking exploration of the ever-evolving field of environmental jurisprudence, providing a comprehensive examination of key themes such as Environmental Law, Climate Law, European Law, Globalization, Indigenous Peoples, Right to Clean Environment, Environmental Litigation, Clean Energy, Sustainable Development, and Environmental Policy. Authored by leading experts in the field, this book serves as a vital resource for legal professionals, policymakers, academics, and anyone passionate about the intersection of law and environmental sustainability.

Foreworded by eminent and high stature legal scientist, Prof. Dr. Anatoly Getman, who is State honoured esteemed Rector of Ukraine's the only National Law University in the name of Yaroslav the Wise, this book begins by dissecting the foundations of Environmental Law, offering a detailed analysis of international and domestic legal frameworks that shape environmental governance. It delves into the intricate web of treaties, conventions, and agreements that guide nations in their commitment to preserving the planet's health.

A significant focus is placed on Climate Law, exploring the legal mechanisms designed to address the urgent challenges of climate change. The book navigates through international climate agreements, domestic legislation, and the role of environmental courts in shaping policies aimed at mitigating and adapting to the impacts of a changing climate. In the context of European Law, the book investigates the specific legal frameworks within the European Union that govern environmental protection and sustainability. It explores landmark cases and legislative developments that have shaped the continent's approach to ecological conservation and climate action.

Globalization emerges as a key theme, with the book scrutinizing the legal implications of interconnected economies on environmental practices. It addresses the challenges and opportunities presented by the globalized nature of environmental issues, emphasizing the need for transnational cooperation and legal instruments. Indigenous Peoples' rights and their role in environmental governance are explored in depth, recognizing the unique perspectives and contributions of Indigenous communities in environmental conservation. The book critically examines legal frameworks that safeguard Indigenous knowledge and territories.

The Right to a Clean Environment is a fundamental principle underpinning the book's exploration. It discusses the evolution of this right and its implications for legal systems worldwide, emphasizing its role in shaping environmental policies and promoting justice. Environmental Litigation is scrutinized as a powerful tool for advocacy and accountability. The book analyses landmark environmental cases, shedding light on the role of the judiciary in influencing environmental policies and holding violators accountable. Clean Energy and Sustainable Development are discussed in the context of legal frameworks that promote the transition to environmentally friendly practices. The book examines the role of law in incentivizing clean energy initiatives and fostering sustainable development. Environmental Policy is a recurring theme throughout the book, with a focus on the development, implementation, and evaluation of policies aimed at addressing pressing environmental challenges.

In Chapter 2, "The Ecosystem Approach in International Environmental Law before the Convention on Biological Diversity", by Yevhenii Suietnov, the author provides a comprehensive exploration of the origins and evolution of the ecosystem approach in the context of international environmental law. Suietnov's analysis involves a thorough examination of major international environmental agreements and incorporates the perspectives of prominent environmental scholars. The research establishes that well before the Convention on Biological Diversity came into existence, there was already substantial international consensus and support for addressing issues related to the protection and conservation of natural ecosystems. The agreements that were in place prior to the Convention laid a crucial foundation for the subsequent development of the ecosystem approach as a holistic and integrated concept. The chapter highlights the proactive stance taken by the international community in recognizing the importance of adopting measures to safeguard biodiversity and promote sustainable practices, setting the stage for the more detailed and focused framework provided by the Convention on Biological Diversity. This historical perspective enriches our understanding of the conceptual evolution leading to the formulation of the ecosystem approach within the broader context of international environmental law.

With the title, "Environmental Justice and Globalization: Putting a Focus on Indigenous Peoples and Local Community Rights and Perspectives" authored by Álvaro Augusto Sanabria-Rangel, the Chapter

3 undertakes a critical examination of the challenges faced by environmental and Indigenous rights defenders in Colombia, Peru, and Chile. The central theme revolves around the persistent obstacles to environmental justice, as viewed through the lens of social leaders actively engaged in safeguarding environmental and Indigenous rights. Sanabria-Rangel contends that the rights and interests of local communities and Indigenous Peoples often take a backseat due to development paradigms primarily centred on economic growth. This imbalance, characterized by a market-driven vision of development at the expense of local and Indigenous perspectives, gives rise to numerous impediments to meaningful participation, possibly rooted in post-colonial dynamics.

The research identifies seven specific challenges that environmental and Indigenous rights defenders confront in their pursuit of amplifying their voices and perspectives. These challenges encompass a range of issues, including the outright denial of binding mechanisms for participation, a lack of transparent information surrounding projects with significant environmental impacts, the reluctance of State actors to monitor extractive industries, limited access to environmental justice, insufficient recognition by local authorities (especially concerning Indigenous representatives), discrepancies in agreements between mining companies and local communities, and bureaucratic practices leading to judicial persecution, stigmatization, and threats to the lives of environmental and Indigenous leaders. Sanabria-Rangel's work sheds light on the multifaceted nature of the hurdles faced by those advocating for environmental justice, underscoring the urgency of addressing these issues within the broader context of globalization and development policies.

Authored by by Yevhenii Suietnov and Elbis Tulina, Chapter 3 on "Ecosystem Approach in Dealing with Invasive Alien Species: International, European and Ukrainian Experience of Legal Regulation" focuses on the intricate landscape of legal regulations surrounding invasive alien species, a critical concern ranking as the second-largest threat to global biodiversity, just behind habitat destruction. The authors meticulously traverse the international, European, and Ukrainian dimensions of legal frameworks addressing these species, emphasizing the pivotal role of the ecosystem approach. The international arena, particularly within the purview of the Convention on Biological Diversity, underscores the ecosystem approach as foundational in tackling invasive species, a perspective gradually

permeating the regulatory fabric of the European Union. EU directives on nature protection and corresponding regulations from the European Commission distinctly identify invasive species, prohibiting activities that may contribute to their proliferation in the environment. In the context of Ukrainian environmental law, the authors discern a positive trend towards acknowledging the ecosystem approach in managing invasive alien species, primarily within national strategic documents. However, the current state of national environmental legislation reveals a fragmented and inconsistent regulatory landscape, signalling the imperative for timely reforms.

Suietnov and Tulina's exploration brings to light the evolving global and regional efforts to address the challenges posed by invasive alien species, stressing the importance of adopting a comprehensive ecosystem approach. The chapter not only underscores the significance of international cooperation, as exemplified by the Convention on Biological Diversity, but also calls attention to the ongoing transition within the European Union and the need for reforms in Ukrainian environmental legislation to establish a more cohesive and effective regulatory framework for dealing with invasive alien species.

Chapter 5, titled "Conceptual Challenges to the Recognition and Enforcement of the Right to Clean, Safe and Healthy Environment" by Brown Etareri Umukoro and Oghenerukevwe Ituru, delves into the contentious landscape surrounding the emerging right to a clean, safe, and healthy environment. The authors highlight the controversial nature of this right, particularly as international forums grapple with the intersection of human rights and environmental concerns. Notably, the lack of explicit delimitation of the scope of this right at the global level has fuelled debates and hindered its clear definition across national jurisdictions. The authors underscore the recent official resolution by the UN General Assembly, recognizing a clean, healthy, and sustainable environment as a universal human right, intensifying the need to redefine and clarify the right for effective enforcement.

The chapter systematically explores the conceptual and theoretical challenges, as well as criticisms, that have impeded the enforcement of the right to a clean environment. It also scrutinizes constitutional challenges within the Nigerian context and examines the judicial efforts in the case of *Gbemre v SPDC*, where attempts were made to expand the constitutional right to life to include the right to a healthy environment. The authors observe the diverse descriptions and

qualifications of the right across different jurisdictions, rendering it susceptible to challenges of interpretation. Despite these challenges, the chapter advocates for a broad interpretation of the right, emphasizing its importance in ensuring an environment fit for human habitation. The authors contend that courts possess the capacity to delineate what constitutes a suitable environment for human living, offering a potential pathway for overcoming the conceptual challenges associated with the recognition and enforcement of the right to a clean, safe, and healthy environment.

"Prospects and Challenges to Prove Environmental Harm in Litigation: Status Quo in Nigeria" (Chapter 6, authored by Awodezi Henry) confronts the pervasive global challenge of environmental litigation and the enforcement of environmental rights, particularly within developing nations like Nigeria. With a surge in industrial activities leading to the heightened production of hazardous substances and threats to the well-being of local populations, victims of environmental harm face formidable barriers in asserting and defending their rights. The chapter meticulously explores the difficulties encountered in proving environmental harm, such as property damages, during litigation, attributing challenges to issues like locus standi technicalities, trial delays, and financial constraints faced by victims. Employing a doctrinal legal research methodology and content analysis, the chapter recommends the application of the *Res Ipsa Loquitur* principle in environmental trials to mitigate legal technicalities and promote the expeditious dispensation of justice. By advocating for a more accessible and streamlined legal process in cases of environmental harm, the chapter endeavours to enhance the prospects of successfully proving environmental harm and, thereby, fortify the enforcement of environmental rights in Nigeria.

In Chapter 7, titled "International Trade and Environmental Protection: Revisiting David Hunter's 'Invisible Elbow Destroying the Common Goods Created by an Invisible Hand,'" and authored by Peter Nyeronvwo Komiti, the intricate relationship between international trade and environmental protection is meticulously examined, marking twenty-eight years since the establishment of the World Trade Organisation (WTO) regime. The chapter navigates the historical trajectory of the trade-environmental protection relationship, assessing the extent to which competing values have been harmonized, albeit with some discernible imbalances. Employing a doctrinal methodology,

the author employs a comparative and analytical approach, drawing insights from desk and library research. The chapter unfolds in six parts, commencing with an introduction, followed by an exploration of international environmental agreements relevant to the trade-environment interaction. The principles of international environmental law are scrutinized in the third part, while the fourth delves into the examination of unilateral trade measures. The fifth part conducts a thorough evaluation of WTO jurisprudence. Despite commendable efforts to integrate environmental protection into trade objectives through WTO jurisprudence, the chapter identifies persistent market failures that contribute to an imbalanced trade-environment relationship. This prompts a critical revisit of David Hunter's metaphorical concept of the "invisible elbow" representing trade, potentially compromising the common goods of the environment shaped by the "invisible hand" of nature.

The Chapter 8, titled "International Law Application to Transboundary Pollution: Solutions to Mitigate Mining Contamination in the Elk–Kootenai River Watershed", authored by Kieran Simpson and Ben R. Collison, unveils that the critical issue of mining-related pollution in the Elk Valley is meticulously examined. Home to five of British Columbia's six largest mines, the Elk Valley faces an escalating problem of selenium pollution in the transboundary Elk–Kootenai River watershed, resulting in a substantial fine for Teck Resources Ltd. in 2021 under Canada's Fisheries Act. The chapter navigates the complex terrain of transboundary pollution and explores the role of international law, focusing on agreements such as the Boundary Waters Treaty (1909) and Columbia River Treaty (1964). The authors analyze the potential involvement of the International Joint Commission and assess its capacity to make recommendations to address the ongoing mining pollution issue. Drawing on case law and other international agreements related to pollution, the chapter proposes a two-part conclusion: a short-term solution aimed at effective communication and resolution of the immediate transboundary mining pollution in the Elk–Kootenay River watershed, and a long-term solution to pre-emptively address future disputes between Canada and the United States regarding transboundary pollution. This chapter contributes valuable insights and recommendations to the complex and pressing challenge of mitigating mining contamination in the Elk–Kootenai River Watershed through the application of international law.

The Chapter 9, titled "Convergence of Environmental and Economic Law in the Sphere of Environmental Protection and Natural Resource Management in Ukraine," authored by Viktoriia Bredikhina and Dmitro Zadykhaylo, undertakes a comprehensive analysis of the intersection between environmental legislations and commercial regulations in the context of natural resource management and environmental protection. The chapter addresses the pressing need to address environmental safety issues and utilize available legal mechanisms to transition from a conventional economy to a green economy. The authors emphasize the significance of a multipurpose legal framework that incorporates both environmental and commercial principles to regulate and stimulate the greening of economic activities. The chapter identifies challenges preceding the convergence of law and legislation, particularly the alignment of environmental and economic policies at the conceptual and strategic levels within the state. The authors argue for the restructuring of state administration to effectively manage the green economy, emphasizing the necessity for well-organized law-making processes and scientific-legal research. The chapter delves into essential aspects of the convergence of legal remedies for the regulation of environmental management, examining the common features and specified links between the main structural components of environmental and economic law. This contribution sheds light on the intricate dynamics of converging legal frameworks and offers insights into the complexities of achieving effective environmental protection and natural resource management in the context of Ukraine's legal landscape.

Highlighting the topic, "The Legal Landscape of Climate Change in Ukraine: Challenges and Prospects", authored by Ievgeniia Kopytsia, the Chapter 10 digs into the critical examination of the current state of legal regulation surrounding climate change issues in Ukraine. In a world where climate change stands as one of the most pressing, intricate, and formidable global challenges, impacting not only the environment but also the global economy and international security, the chapter emphasizes the necessity of primary domestic regulation at the state level. The author conducts a thorough analysis of Ukraine's national legislation on climate change, scrutinizing its alignment with the strategic aims of the State policy. Additionally, the provisions of strategic documents dedicated to climate change adaptation and mitigation in Ukraine undergo examination, evaluating the efficiency

and effectiveness of the existing regulatory mechanisms. Through this comprehensive analysis, the author identifies shortcomings in the national policy and legal framework concerning climate change and offers a set of insightful suggestions for its enhancement. This chapter makes a significant contribution to the understanding of the complexities surrounding climate change regulation in Ukraine, providing valuable insights and recommendations for the improvement of legal frameworks addressing this urgent global concern.

The next chapter i.e., Chapter 11, authored by Dan Frederick Orcherton and titled "The Extent of Causality and Burden of Proof for Climate Related Intangible Loss Damage in At-Risk Settlements (Fiji Islands)", explores a comprehensive examination of social, cultural, legal, and policy-related remedies addressing harm resulting from climate-related loss and damage (L&D), with a specific focus on rural and remote Fiji Islands. The chapter initiates a nuanced discussion on the definition of loss and damage and its intricate relationship with climate mitigation and adaptation. Orcherton examines the conceptual exploration of causality and attempts to unveil criteria employed by the law to assess causation, aiming to fuel essential discussions on the intersection of climate change, causation, and their impact on international law, domestic law, and climate science.

A pivotal aspect of the chapter involves the exploration of probabilistic event attribution (PEA), highlighting its crucial implications for PEA development. Orcherton emphasizes the potential of PEA in forecasting changing risks when vulnerabilities and thresholds are known, allowing for the anticipation of geographically specific events and the design of appropriate adaptation measures. The chapter engages in a conceptual exploration of how those adversely affected by climate-induced loss and damage in Fiji can pursue remedies against contributors to the harm. Orcherton concludes by shedding light on the values of PEA and accentuates the pressing concern of vulnerabilities in Fijian communities, emphasizing the need for further research on social, cultural, and biological interconnectivity. The chapter advocates for Disaster Risk Reduction (DRR) planning that is cognizant of the social and cultural implications of forced migration, recognizing the complexities inherent in causality and burden of proof within the legal context and the necessity for ongoing research in this domain.

Written by Pham Thanh Nga, the Chapter 12 on "Using Clean Energy for Sustainable Development in Vietnam: Facts and Solutions"

explores the global trend of adopting clean energy to protect the environment and achieve the United Nations' Sustainable Development Goals. Focusing on Vietnam, the chapter analyzes the legal policies and regulations enacted by the government to encourage widespread clean energy use for both residential and economic development. Through a comparative lens with global clean energy initiatives, Nga highlights the current state, challenges, and prospects of clean energy adoption in Vietnam. Using methodologies involving the examination of Vietnam's legal policies and documents related to energy activities, the chapter not only identifies existing problems but also recommends solutions for the future. The study emphasizes the pivotal role of law and regulation in governing energy activities, providing valuable insights into leveraging legal frameworks for advancing clean energy initiatives and contributing to Vietnam's sustainable development goals. In sum, this chapter contributes a comprehensive analysis of clean energy in Vietnam, offering practical solutions to enhance its utilization for sustainable development.

In the next Chapter 13, titled "Water, Energy, and Food Strategies: Impact on Malawi's Sustainable Development Goals Achievement," authors Ngozi Finette Unuigbo and Aizenose Promise Ehizojie probe the pressing challenges faced by Malawi in meeting the escalating demands for food, water, and energy to accommodate its rapidly growing population. Drawing on comprehensive secondary data, the chapter highlights that while existing policy initiatives have somewhat bolstered food production, the concurrent surge in water and energy requirements has led to resource base degradation and an upswing in water-related diseases. The detrimental consequences of poor sectoral coordination and institutional fragmentation loom large, jeopardizing the long-term sustainability of food, water, and energy security and posing a formidable barrier to achieving the Sustainable Development Goals (SDGs) in the country. The chapter advocates for a nexus approach, contending that understanding the interconnectedness of these sectors is paramount and can be achieved through a substantial shift in decision-making processes. Proposing the development of institutional mechanisms to enhance coordination and synergy, the authors suggest a framework for cross-sectoral collaboration, offering insights into managing the challenges inherent in the nexus of water, energy, and food strategies in Malawi.

Titling as "The Role of Energy Directives in Ensuring EU Energy Security and the Problems of Implementation in Ukrainian Legislation," authored by Ievgenii Shulga, Nataliia Shynkaruk, Stanislav Shytyi, and Ievgen Antypov, Chapter 14 undertakes a comprehensive analysis of the pivotal role played by energy directives in ensuring the energy security of the European Union, juxtaposed with the challenges in their implementation within the legislative framework of Ukraine. Spanning from the Treaty of Paris on the European Coal and Steel Community to the fourth energy package, the evolution of the EU's legal security in the energy sphere is examined. This development facilitated competition among energy producers, ensured equal access to energy distribution networks, liberalized the energy sector, promoted the use of green energy, mitigated emissions, and elevated energy security levels in Ukraine, aligning with the Treaty establishing the Energy Community and the Association Agreement with the EU.

The authors systematically scrutinize the implementation process of EU Energy Directives in Ukrainian legislation, employing legal methods to focus on key legislative instruments such as the Law "On Natural Gas Market," the Law "On Electricity Market," the Law "On Energy Efficiency," the Law "On Energy Land and Legal Regime of Special Zones of Energy Facilities," and the Energy Strategy of Ukraine till 2035 "Security, Energy Efficiency, Competitiveness." Through this meticulous analysis, the chapter not only assesses the current state of directive implementation but also highlights the challenges and intricacies associated with aligning Ukrainian legislation with EU energy directives, providing valuable insights into the complexities of ensuring energy security within a legal framework.

Similarly, the Chapter 15 titling "Ukrainian Reform of State Power Decentralization as a Way to Sustainable Development: Ecological and Legal Aspects" and authored by Olena Zaiets, Tetiana Kovalenko, Tetiana Shokha, Yulyia Vlasenko, and Elina Pozniak looks into the strategic vision of sustainable development in Ukraine, emphasizing the crucial role of decentralization and regional policy implementation in aligning with national interests and international commitments. Focusing on the environmental and legal facets of decentralization, particularly in the realm of land resources, the chapter navigates through the intricacies of Ukraine's environmental law system. It identifies and analyzes key components of environmental decentralization, shedding light on legislative aspects related to natural

resource reallocation, territorial community demarcation, and planning processes. The authors scrutinize the roles of cadasters, registers, and electronic databases in supporting natural resource management within the decentralization framework, while also outlining legal perspectives for the decentralization of environmental control. The chapter underscores the status of financial and ecological resource redistribution during decentralization, providing insights into potential improvements. In conclusion, the authors suggest ways to enhance legislation and its practical implementation to ensure the success of decentralization reforms, offering a comprehensive exploration of the environmental and legal dimensions of Ukraine's decentralization processes for sustainable development.

Likewise, Chapter 16, authored by Sergii Marko, Vitaliy Kovalenko, Oleksandr Kolb, Olena Bondarenko, and Sandra Boldizhar, titled "Legal Dimensions of Environmental Policy in Ukraine," offers a comprehensive theoretical and practical analysis of the organizational and legal challenges inherent in the evolution and implementation of environmental policy within Ukraine's sustainable development strategy. Rooted in international documents delineating the goals of sustainable development and guiding the harmonization of legal instruments, particularly in alignment with European Green laws, the research emphasizes the need for prioritizing sectoral environmental reforms. Drawing from an analysis of current environmental legislation and its application, as well as insights from scientific perspectives, the chapter underscores the imperative of reforms in biodiversity protection, industrial pollution mitigation, waste management, emission monitoring and reporting, environmental control, and statutory responsibility. It identifies crucial areas for improving Ukraine's environmental policy, focusing on enhancing control over compliance with standards, refining mechanisms for payments related to environmental harm, providing tax benefits and financial incentives for innovative environmental practices, fostering environmental audit and certification, flexibly pricing ecological products, and promoting scientific engagement in addressing environmental challenges. This chapter contributes valuable insights into the legal dimensions of Ukraine's environmental policy, advocating for effective, transparent, and modern post-war reconstruction through targeted reforms and strategic improvements.

Lastly, Chapter 17, titled "The Relationship between Environmental Policy and Foreign Direct Investment", authored by Alla Pecheniuk, Iryna Mushenyk, Nataliia Korzh, Iryna Mazurkevych, and Nadiia Oliinuk, critically explores the intersection of direct foreign investment and environmental policies across different countries. The chapter engages with the complex and sometimes conflicting scientific conclusions surrounding the efficacy of direct foreign investments and their connections to environmental considerations on a global scale. Focusing on Ukraine, the chapter unveils a notable trend where direct foreign investment often originates from offshore zones, with Ukrainian companies frequently playing the role of investors. This dynamic not only limits the innovative aspects of the country's environment but also hinders anticipated changes brought about by foreign investment, particularly in the realm of ecological development.

Utilizing data from the State Statistics Service of Ukraine, the chapter strategically identifies the direction of a rational foreign investment policy, considering its associations with environmental indicators. Through empirical substantiation, the study emphasizes the promising nature of policies regulating waste generation, expenditures on environmental protection, and the overall innovativeness of the country. Additionally, the chapter presents forecast models for the development of foreign direct investment policies, offering valuable insights for future decision-making in the realm of environmental policy formation. In essence, this chapter contributes to a nuanced understanding of the intricate relationship between foreign direct investment and environmental policies, particularly within the unique context of Ukraine, paving the way for informed strategies and considerations in the pursuit of sustainable development.

Summarily, the narrations from Chapter 2 to Chapter 17 collectively provide a comprehensive overview of diverse topics within the realm of environmental law and policy, particularly focusing on Ukraine's context. Chapter 2 delves into the historical aspects of the ecosystem approach in international environmental law, highlighting the foundations and development before the Convention on Biological Diversity. Chapters 3, 5, 6, and 8 address environmental justice, litigation challenges, and legal frameworks in the context of Indigenous Peoples, invasive alien species, and environmental harm in Nigeria. Chapter 7 explores the intricate relationship between international trade and environmental protection, revisiting David Hunter's

metaphor. Chapter 9 focuses on the convergence of environmental and economic law in Ukraine, examining the challenges and prospects of regulating environmental protection and natural resource management. Chapter 13 discusses the prospects and challenges of proving environmental harm in litigation, particularly in Nigeria, shedding light on obstacles faced by victims seeking justice. Chapter 8 provides insights into mitigating mining contamination in the Elk–Kootenai River Watershed, addressing transboundary pollution through international law applications. Chapter 10 explores the legal dimensions of climate change in Ukraine, scrutinizing conceptual challenges and constitutional aspects. Chapter 15 navigates through Ukrainian decentralization reforms, particularly focusing on environmental and legal facets. Chapter 16 critically analyzes the organizational and legal aspects of Ukraine's environmental policy in the pursuit of sustainable development.

All the chapters collectively underscore the complex interplay between legal frameworks, environmental challenges, and sustainable development initiatives. They emphasize the need for innovative policies, international cooperation, and the integration of environmental considerations into legal structures. Whether addressing biodiversity protection, climate change, or foreign direct investment, the chapters highlight the multifaceted nature of environmental issues and the pivotal role of legal frameworks in navigating these challenges. The insights provided contribute to a holistic understanding of environmental law and policy, paving the way for informed decision-making, reforms, and sustainable development efforts in Ukraine and beyond.

Convincingly, the book "Advances in Environmental Law" is a timely and authoritative work that not only captures the current state of environmental jurisprudence but also paves the way for future developments in the field. With its interdisciplinary approach and emphasis on global perspectives, this book is an invaluable resource for anyone seeking a deeper understanding of the intricate interplay between law, the environment, and sustainable development.

ABOUT THE AUTHOR

Arjjumend, Dr. Hasrat



The editor of this book, Dr. Hasrat Arjjumend is the *Founder President & CEO* of The Grassroots Institute (Canada). Additionally, as *Executive (Chief) Editor*, he manages and executes the Grassroots Journals (5 journals) published by The Grassroots Institute in partnership with different universities. He is involved with the International Year of Rangelands and Pastoralists (IYRP 2026) as *Co-Chair*, RISG – Central Asia & Mongolia, and as *Member*, RISG Europe. Educationally, he attained *Mitacs Elevate Postdoctorate* at Université de Montréal Faculté de Droit, Québec (Canada) in Agrarian/Environmental Law (laws of agri-biologicals in Canada, India, Ukraine and EU), PhD in International Studies (Biodiversity Law & Governance), PG Diploma in Environmental Law, MPhil in Natural Resource Management (MRM), MSc in Environmental Science, MA in Public Administration, MBA Human Resources, and BSc Hons in Botany. Additionally, he received advanced practical training from the Canada, UK, Sweden, Thailand, Russia, India, Netherlands and the USA.

His first significant study was his MPhil dissertation work in 1998-99. He wrote a comprehensive critique of nature conservation policies worldwide. It led to denotification of a wildlife sanctuary in India for the interests of farmers/people. It was the first incidence in the conservation history of the Indian subcontinent when a protected area was scrapped for undoing the displacement of local inhabitants. Furthermore, during the past two and half decades, he completed multiple landmark studies and significant fieldwork focused on Indigenous people and their issues in Asia, as well as comparative studies on a global basis, culminating in his PhD work, which encompassed the evaluation of the extent of space, recognition,

participation and involvement for/of Indigenous people not only in international law making (Nagoya Protocol), but also in domestic ABS (access and benefit sharing) law making & implementation processes. As the biocultural rights of Indigenous people are key to conservation and sustainable use of biodiversity, the domestic ABS laws require reorientation to be sufficiently effective in translating the spirit of international ABS laws. As a result, benefit-sharing processes (as per 3rd objective of CBD) and biopiracy of traditional knowledge and bioresources of Indigenous people cannot be checked effectively. He discerned and amplified that adequate participation and involvement, which had been lacking across the processes, of Indigenous peoples and local communities during the crafting of both the Nagoya Protocol and its corresponding domestic ABS legislation. His work brought this serious issue to the fore and debates have started within and outside CBD forums. Such a success added to progressive discourses towards advocating and asserting for Indigenous rights, dignity and self-determination. Among his current research orientations is the work on “rangeland governance and pastoralism” involving legal, policy, and social-ecological dimensions. Additionally, he has been trying to discover the utility of modern technologies by mobile pastoralists in managing their livestock across the changing environments and fragmented rangelands.

Along with the direct action with communities, he has carried out a significant quantum of training/teaching and writing/publishing. He has taught a variety of courses; to name but a few: Agriculture and Ecology, Organic Farming Systems, Governance of Land & Water Commons, Biodiversity Law, Pastureland Policies & Law, Development of Land Resources, Watershed Development in Arid Zones, Water Resources Management, Participatory Forest Management, Grasslands & Rangeland Management, Environmental Governance, Research Methods & Techniques, Natural Resource Management, and Urban Green Spaces. These courses constituted the milestones in the core ‘natural resource management’ syllabus. As an engaged scholar using interdisciplinary approaches, he seeks to provide experiential learning opportunities that not only encourage personal development of participants, but also the intercultural thinking that best informs global perspectives. To this end, being a trainer/teacher is the ultimate opportunity to inspire, empower, and provide transformative experiences for students. His teaching & training philosophy is

grounded in his life experiences; he is a self-made person with diverse life experiences in the developing world that he integrates into classroom content. As a trainer/teacher, he emphasizes the mutual benefits of engaged scholarship and the development of an individual's social, emotional, intellectual, and creative well-being. This includes taking risk, thinking outside-the-box, and providing a passionate and fulfilling learning experience. Additionally, as an educator and researcher, his career has been centered on being a change-agent, advocating for solutions. Through training/teaching, he considers that he is transferring to youths and students not only the knowledge, but also an energy that they may retain to transform their lives. Be it a science subject, policy topic or societal reality there is a lot to share by him with the students/participants. Using participatory learning methods, he considers training/teaching as a source of empowerment, transformation and leadership.

As a change agent, he set in a few exceptional model accomplishments. During 2008-11, in the capacity of Project Director of EU-funded IEUPC Education Project, not only he conceptualized and designed the project, but he also created unique procedures, processes, systems, institutions and leaderships that resulted in empowerment of urban poor families in 3 cities for educating girl children and female youths. The exemplary work received UNESCO recognition in 2011. Embedded in that EU project, the Young Citizens Leadership initiative was his exceptional endeavour. Later during 2013-16, he organized agro-pastoralist communities by using Pastureland Policies and Legal Provisions provided in Agrarian & Local Governance Laws in Rajasthan (West India). In the capacity of Dean/Sr. Manager at Foundation for Ecological Security, he nurtured 1017 community collectives (institutions) to liberate about 30,000 hectares of pasturelands (commons) from clutches of local powerful elites, and institutional ownership of pastoral communities had been restored. Liberating lands by him from land grabbers was life threatening work. It brought meaningful change in governance patterns of natural resources impacting livelihoods of poor mass in India's arid zone. In addition to these two most commendable works, he used to be People-Centred Advocacy Campaigner from 1996 till 2012, apart from a popular writer journalist in editorial columns for 10 years. His preferred array of interventions, especially from 2005 to 2016, revolved around building the Stewardship

among youths. He enabled thousands of youths who honed their leading capabilities with distinct vision and high-energy convictions.

Professionally, he possesses >30 years' experience of research, training, teaching, field action and organizational management, dealing with multidisciplinary areas of Environment, Natural Resources, Governance, Development, and Indigenous Rights. In the past he served, *inter alia*, as *Senior Agroecology Specialist* with Earth Alive Clean Technologies Inc. Canada, *Assistant Professor* (Natural Resources & Environmental Management) at Ethiopian Civil Service University Addis Ababa, *Dean/Sr. Manager* at FES Prakriti Karyashala Rural College (Rajasthan Campus, India), *Executive Director* of Grassroots India Trust, *Project Director* of EU-funded IEUPC Project, *Senior Program Officer* at Society for Participatory Research in Asia, *Research Officer* at National Centre for Human Settlement & Environment, *Biologist-I* at Wildlife Institute of India (Govt. of India). For over 18 years, he contributed as *Visiting/Guest Faculty* to several institutions in India and Europe, apart from being a *Consultant* to leading NGOs. Having inherent capacities of evolving, building and developing the institutions, he acted as a *leader* of several people-centred initiatives & forums (e.g., Madhya Pradesh Chapter of FIAN International – Germany), and later devolved the systems after completion of institutionalization process. Moreover, he was *Mitacs Elevate Fellow* 2017-20 in Canada, *Senior Legal Fellow* at Centre for International Sustainable Development Law (CISDL) affiliated to McGill University in Montreal/Canada, *Visiting Fellow* at Yaroslav Mudriy National Law University of Ukraine 2017-2020, *Commonwealth Professional Fellow* 2007 in England and *Social-Impact Fellow* 2008-10 in Mumbai, apart from being the recipient of the *Award of Excellence for International Partnership* 2021 from Valahia University of Targoviste Romania, *CISDL Canada's Legal Research Award* 2019, *UNESCO-Wenhui Award for Educational Innovation* 2010 (Asia-Pacific), *Chairman's Gold Medal* 1997-98 in MRM Natural Resource Management, USA's *Charles Evans Hughes Memorial Scholarship* 2007, and *S.J. Jindal Trust Scholarship* 1990-91. He has working exposure across half of India's geography (13 states), and working/study exposure to East Africa, South Asia, South-East Asia, Scandinavia, West Europe, East Europe and Canada. To his credit are about 192 publications of varied types (see Publications List), some of them published in WoS/Scopus indexed international journals. He is sitting in Editorial Boards of the European journals: EU Agrarian Law,

Journal of Legal Studies, and Environmental Economics & Sustainable Development.

As the *Founder President & CEO* of The Grassroots Institute Canada, his record of leadership is outstanding. Since the inception in 2018, he has developed a global capacity building program ‘Summer Field School on Mountain Ecosystems & Resources Management’ of which the 2020-21 version was highly successful. About 66 universities and organizations from 21 countries partnered/ collaborated (and nearly 630 people from 69 countries took part). Likewise, the Summer Field School 2023 www.grassrootsglobal.net/mer2023 was led by 9 Lead Partner universities/organizations from Italy, Romania, Ukraine, India, Kyrgyzstan and Hungary, with 30 General Partners and 7 Collaborators belonging to 18 countries. Nearly 600 people representing 60 countries took part in this program in 2023. To bridge the gaps between field practice/ action and the knowledge generated in academic or research institutions, he is developing ‘ggN - Grassroots Global Network’ [www.grassrootsglobal.net/], which would be a massive networking platform on natural resources management, policy and practice. While imagining a global lectures bank, the Global Lectures | Local Impacts <https://www.grassrootsinstitute.ca/gli> is his new and unique initiative that allows “lecture pooling”, whereby multiple institutions can share the same virtual lecture simultaneously. This amplifies the reach of these valuable lectures to a wider audience across the world. To create space for leadership and skill development by the senior, mid-career and young scientists and professionals, he has successfully started the Grassroots Global Leadership Program <https://www.grassrootsinstitute.ca/glp>. Acting as publishing wing of TGI, the ‘Grassroots Journals’ www.grassrootsjournals.org was initiated by him in 2018 and currently, in the capacity of *Executive (Chief) Editor*, he is successfully operating 5 journals, namely ‘Grassroots Journal of Natural Resources’ [WoS indexed], ‘Agrobiodiversity & Agroecology’, ‘Journal of Environmental Law & Policy’ [HEIN indexed], ‘Journal of Policy & Governance’ [HEIN indexed] and ‘Pastures & Pastoralism’. In a new partnership model, he is initiating an Online Education portfolio of TGI on the website <https://www.grassrootsinstitute.ca>. It is envisaged to take the shape of an educational institution. A complete present and future map of TGI can be understood from the main website www.grassrootsinstitute.net. Finally, Dr. Arjjumend’s leadership is distinctly reflected in his networking and partnership building commitments and enthusiasms.

Globally, he has developed a large network with academic, research, action and policy institutions, to include signed partnerships with nearly 90 universities, institutes, national parks, city councils, NGOs and networks. He is instrumental in creating a pool of over 450 experts, professors, scientists and professionals associated with and voluntarily contributing to TGI's different initiatives.

His current areas of academic & action interests include *Rangeland Ecosystems and Pastoral Livelihoods*; *Laws & Governance of Grazing Commons*; *Governance of Natural Resources*; *Resource Rights of Indigenous People*; *Agrarian Laws & Policies*; *Water Policies and Management*; *Agroecology*.

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The Ecosystem Approach in International Environmental Law before the Convention on Biological Diversity

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ABSTRACT

The chapter analyses general aspects of the formation and development of the ecosystem approach in international environmental law before the adoption and entry into force of the Convention on Biological Diversity. On the grounds of thorough and complex research encompassing the main international environmental agreements and scientists' views, it is concluded that the issues of protection and conservation of natural ecosystems and implementation of the ecosystem approach had already received wide support at the international level by that time, whereas adopted agreements created the necessary base for the further formation and development of the ecosystem approach as a holistic concept under the Convention on Biological Diversity.

Keywords: Environmental law; International agreements; Sustainable development; Biological diversity; Ecosystem; Ecosystem approach

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1. INTRODUCTION

From a historical perspective, the whole process of formation and development of the ecosystem approach in international environmental law can be divided into three interdependent and complementary periods: pre-Convention, Convention and post-Convention, which are consistent with the adoption on 5 June 1992 of the Convention on Biological Diversity¹ (CBD) at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro (Brazil, 3–14 June 1992).

Conforming to the CBD, its objectives are the conservation of biodiversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.² The CBD contains a definition of an ‘ecosystem’, which is a dynamic complex of plant, animal and microorganism communities and their non-living environment interacting as a functional unit,³ and the obligations for the conservation of ecosystems: to promote its protection; to rehabilitate and restore degraded ecosystems; to prevent the introduction of, control or eradicate those alien species which threaten ecosystems, etc.⁴

The CBD does not specify an ecosystem approach, but its main provisions are contained in a number of decisions of the meetings of its governing body – the Conference of the Parties (COP). At the First meeting of the COP (Nassau, Bahamas, 1994) the Contracting Parties confirmed that the planet’s essential goods, ecological functions and services depend on the variety and variability of ecosystems, and if humanity is to have a future on this earth, biological diversity must be conserved, because its depletion causes threats to ecosystems that are vital for the sustenance of human societies in all countries.⁵ And, at the Second meeting of the COP (Jakarta, Indonesia, 1995) the ecosystem

¹ Convention on Biological Diversity (adopted 5 June 1992, entered into force 29 December 1993) 1760 UNTS 69 (CBD).

² *ibid* art 1.

³ *ibid* art 2.

⁴ *ibid* paras ‘d’, ‘f’, ‘h’ of art 8.

⁵ Decision adopted by the Conference of the Parties to the Convention on Biological Diversity at its First Meeting (Nassau, 28 November – 9 December 1994). Decision I/8: Preparation of the participation of the Convention on Biological Diversity in the third session of the Commission on Sustainable Development, UNEP/CBD/COP/DEC/I/8.

approach was recognized as the primary framework of action to be taken under the CBD.⁶

But the most productive with regard to the ecosystem approach was the Fifth meeting of the COP (Nairobi, Kenya 2000), because it adopted Decision V/6⁷ which contains a description of the ecosystem approach, a list of its 12 interrelated and complementary principles and 5 operational guidance for their application (sections 'A', 'B' and 'C' of the Annex). According to section 'A', the ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. This approach is based on the application of appropriate scientific methodologies focused on levels of biological organization, which encompass the essential structure, processes, functions and interactions among organisms and their environment, and recognizes that humans, with their cultural diversity, are an integral component of many ecosystems.

It should be noted that there is no consensus in academic circles on the concept and nature of the ecosystem approach and its relationship to other similar approaches, but for clarity we will use R.A. Perelet's formulation that the ecosystem approach is a means of examining the relationships within ecosystems with other systems and people for whom ecosystems are habitats and livelihoods, and aims to ensure the long-term sustainability of biodiversity and the significant development of current understanding of sustainable nature.⁸

Precisely in the context, introduced by the CBD, the ecosystem approach is considered by many experts in international environmental management and law.⁹ However, despite the fact that, indeed, the

⁶ Decisions adopted by the Second Meeting of the Conference of the Parties to the Convention on Biological Diversity (Jakarta, 6–17 November 1995). Decision II/8: Preliminary consideration of components of biological diversity particularly under threat and action which could be taken under the Convention, UNEP/CBD/COP/2/19.

⁷ Decisions adopted by the Conference of the Parties to the Convention on Biological Diversity at its Fifth Meeting (Nairobi, 15–26 May 2000). Decision V/6: Ecosystem Approach, UNEP/CBD/COP/5/23.

⁸ RA Perelet, 'Ekosistemnyi podhod k upravleniyu prirodopolzovaniem i prirodohrannoy deyatel'nostyu' (2006) 1 Mechanism of Economic Regulation 39.

⁹ G Henne, 'The Ecosystem Approach under the Convention on Biological Diversity: A workshop which was held in Lilongwe, Malawi, during 26-28 January 1998' (1998) 25(3) Environmental Conservation 273–275; RD Smith and E Maltby, *Using the Ecosystem Approach to Implement the Convention on Biological Diversity: Key Issues and Case Studies* (Gland: IUCN 2003) 118; E Morgera, *The Ecosystem*

ecosystem approach as a holistic concept began to be developed under the CBD, numerous references to it can also be found in international environmental agreements adopted much earlier.

2. THE AIM OF THE CHAPTER

A certain contribution to the coverage of the formation and development process of the ecosystem approach in international environmental law, in particular, in covering its pre-Convention period, was made by both domestic and foreign scientists including M.O. Medvedieva (who compiled a list of international legal acts, which, in her opinion, contain references to elements or principles of the ecosystem approach),¹⁰ F.M. Platjouw (who not only listed such acts, but, using ten-year periodization, categorized them into those that were adopted in the 1970s, 1980s and 1990s, though almost without references to scientists' comments),¹¹ V. De Lucia (who in his fundamental research touched on a brief historical account aimed at showing the early history of the 'ecosystem approach' concept so as to highlight its genealogical character),¹² and others.

In some scientific papers on the ecosystem approach, if its historical aspect is studied, then either it is considered only in relation to narrow areas and sectors, such as watercourses and water resources, living marine resources, fisheries management, forestry policy, etc.,¹³

Approach under the Convention on Biological Diversity: A Legal Research Agenda (2015). E Morgera, 'Ecosystem and Precautionary Approaches' in J Razzaque and E Morgera (eds) *Encyclopedia of Environmental Law: Biodiversity and Nature Protection Law* (EE, 2016), Forthcoming, Scottish Centre for International Law Working Paper Series No. 7, Edinburgh School of Law Research Paper No. 2015/17, etc.

¹⁰ M Medvedieva, 'Ekosystemnyi pidkhid u mizhnarodnomu pravi navkolyshnoho seredovyshcha: problemy rozuminnia ta zastosuvannia' (2010) 2 *Pravo Ukrainy* 184–189.

¹¹ FM Platjouw, *Environmental Law and the Ecosystem Approach: Maintaining Ecological Integrity through Consistency in Law* (London: Routledge 2016) 232.

¹² V De Lucia, *The 'Ecosystem Approach' in International Environmental Law: Genealogy and Biopolitics* (Routledge 2019) 311.

¹³ O McIntyre, 'The Emergence of an 'Ecosystem Approach' to the Protection of International Watercourses under International Law' (2004) 13(1):1 *Review of European Community and International Environmental Law* 1–14; M Erdem, 'Ecosystem Approach to Environmental Protection in the Law of International Watercourses' (2013) (Special issue) *Dokuz Eylul University Law Journal* 1359–1391; DEJ Currie, *Ecosystem-Based Management in Multilateral Environmental Agreements: Progress towards Adopting the Ecosystem Approach in the*

or exclusively within the framework of individual international conventions.¹⁴

Based on the foregoing background, it becomes obvious that the historical foundations of the ecosystem approach require additional and complex analysis, taking into account a more thorough and comprehensive research of the main international environmental agreements and different views of scientists. Given this, but without pretending to be an exhaustive study, this chapter has covered well-known and unknown (to a wide range of readers) facts and opinions concerning general aspects of formation and development of the ecosystem approach in international environmental law before the adoption and entry into force of the CBD.

3. AWARENESS OF THE IMPORTANCE OF CONSERVING ECOSYSTEMS

The term ‘ecosystem’, which is central to the ecosystem approach, was coined by A.G. Tansley, who wrote that when we are trying to think fundamentally, we cannot separate organisms from their special environment, with which they form one physical system. The formed, in this way, systems are the basic units of nature. These ecosystems, as we may call them, are of various kinds and sizes, and

International Management of Living Marine Resources (Rome: WWF International, Global Species Programme 2007) 53; SR Enright and B Boteler, ‘The Ecosystem Approach in International Marine Environmental Law and Governance’ (2020) in: O’Higgins T., Lago M., DeWitt T. (eds) *Ecosystem-Based Management, Ecosystem Services and Aquatic Biodiversity*. Springer, Cham 333–352; WR Turrell, *The Policy Basis of the ‘Ecosystem Approach’ to Fisheries Management* (Norrköping: EuroGOOS 2004) 28; ML Wilkie, P Holmgren and F Castañeda, *Sustainable forest management and the ecosystem approach: two concepts, one goal* (Forest Resources Division FAO, Rome 2003) 31, etc.

¹⁴ MN Kopylov and AM Solncev, ‘Ramsarskaja konvencija 1971 g. i jekosistemnyj podhod k razumnomu ispol’zovaniju i ustojchivomu razvitiju vodno-bolotnyh ugodij’ (2012) <<https://wiselawyer.ru/poleznoe/60725-ramsarskaya-konvenciya-1971-ehkosistemnyj-podkhod-razumnomu-ispolzovaniyu>> accessed 28 January 2024; C Redgwell, ‘Protection of Ecosystems under International Law: Lessons from Antarctica’ in A Boyle and D Freestone (eds), *International Law and Sustainable Development* (OUP 1999) 224; KT Nguen, ‘Konvencija ASEAN 1985 g. kak hronologicheskij vtoroj primer jekosistemnogo upravlenija’ (2011) 1–2 (45–46) *Mezhdunarodnoe pravo* 108–112; OV Rudenko, ‘Alpiiska konventsiiia – zrazok ekosystemnoi paradyhmy pryrodokhoronnoho zakonodavstva’ (2011) 559 *Naukovyi visnyk Chernivetskoho universytetu. Jurisprudence* 62–65, etc.

form one category of the multitudinous physical systems of the universe, which range from the universe as a whole down to the atom.¹⁵

In subsequent years, numerous definitions of the ecosystem were developed in scientific literature (R.L. Lindeman, F.C. Evans, F.R. Fosberg¹⁶ and many others), but perhaps the greatest contribution to the development of the ecosystem concept was made by E.P. Odum, who described an ecosystem as any entity or natural unit that includes living and non-living parts interacting to produce a stable system in which the exchange of materials between the living and non-living parts follows circular paths¹⁷, and he claimed that it is the main functional unit in ecology, as includes both organisms and inanimate environment – components that mutually affect each other's properties and are necessary to maintain life in its form that exists on Earth.¹⁸

Besides, thanks to the E.P. Odum's research that the understanding of importance of the stable functioning of ecosystems was emerged in the public consciousness, as ignorance in maintaining balance in ecosystems becomes a threat to human existence.¹⁹ According to the scientist, the idea of an ecosystem and the realization that humanity is part of complex biogeochemical cycles are the basic concepts of ecology, which are designed to play a crucial role in the life of mankind; they should be the basis for the conservation of natural resources. That is why approaches to the study of the ecosystem must be combined and translated into a program of action if humans want to survive the current environmental crisis they have created.²⁰

Modern ecologists are no less eloquent on this issue, claiming that the point of global environmental changes that have occurred over the past 50–100 years is the destruction of ecosystems on vast land

¹⁵ AG Tansley, 'The Use and Abuse of Vegetational Concepts and Terms' (1935) 16(3) Ecology 299.

¹⁶ RL Lindeman, 'The Trophic-Dynamic Aspect of Ecology' (1942) 23(4) Ecology 399–417; FC Evans, 'Ecosystem as the Basic Unit in Ecology' (1956) 123(3208) *Science* 1127–1128; FR Fosberg, 'The island ecosystem', in FR Fosberg (ed.), *Man's Place in the Island Ecosystem: a Symposium* (Bishop Museum Press: Honolulu 1963) 1–6.

¹⁷ EP Odum, *Fundamentals of ecology* (Philadelphia: W.B. Saunders Company 1953) 9.

¹⁸ Ju Odum, *Jekologija* (Moscow: Mir 1986), 24. Translated from: EP Odum, *Basic Ecology* (New York: CBS College Publishing 1983).

¹⁹ *ibid* 77.

²⁰ Ju Odum, *Osnovy jekologii* (Moscow: Mir 1975) 50, 51. Translated from: EP Odum, *Fundamentals of ecology. Third edition* (Philadelphia–London–Toronto: W.B. Saunders Company 1971).

areas, in the waters of semi-enclosed seas and the coastal oceanic zone, which threatens the biosphere with the most catastrophic consequences. Destruction and deformation of natural ecosystems (forest, tropical, steppe, forest-tundra, etc.) as a result of human economic activity are, without a doubt, the most important and essential aspect of the global environmental crisis.²¹

Taking into account the functions of ecosystems in nature and their importance for maintaining its favourable state, the need to preserve and restore ecosystems as the main structural units of the biosphere has become extremely urgent. From these considerations, the ecosystem approach as a new strategy for natural resource management was developed in international environmental law.

The pre-Convention period of the ecosystem approach dates back to the 1960–1970s, when the general public learned about the threat looming over the biosphere. It is at this time that international organizations and non-governmental organizations were created to deal with different environmental issues, numerous literary and scientific works were published touching upon various environmental problems, intergovernmental scientific programs were developed, and international environmental congresses and conferences were convened.

The first attempt to involve the world community and governments in the practical solution of global environmental problems was the United Nations Conference on the Human Environment in Stockholm (Sweden) on 5–16 June 1972 (UNCHE, also known as the Stockholm Conference). In the process, a number of interrelated and complementary documents were adopted, the leading one being the Declaration of the United Nations Conference on the Human Environment²² (Stockholm Declaration) divided into two parts. The first part contained seven theses proclaiming and explaining the responsibility of man to nature, awareness of the special mission of mankind and the necessity of solving accumulated problems. The second part contained 26 principles guiding in solving environmental issues and problems. Principle 1 establishes the link between the duty to protect the environment and the realization of fundamental human rights and freedoms. Principles 2–7 are devoted to the problems of

²¹ VI Danilov-Danil'jan, KS Losev and IE Rejf, *Pered glavnym vyzovom civilizacii: Vzglyad iz Rossii* (Moscow: INFRA-M 2005).

²² Report of the United Nations Conference on the Human Environment (UN, New York 1973) A/CONF.48/14/Rev.1.

using the planet's natural resources and the conservation of species diversity on Earth. Principles 8–25 cover measures to protect and improve environmental conditions. The last principle (26) deals with the consequences of the use of nuclear weapons and weapons of mass destruction.²³

Analyzing the Stockholm Declaration, it can be argued that despite its lack of binding legal force and its anthropocentricity (the need to protect nature is motivated by human interests), it was crucial not only for the development of international environmental law, but also for the development of an ecosystem approach. Some of its principles explicitly mention the need to conserve ecosystems and states that 'the natural resources of the Earth, including the air, water, land, flora and fauna and especially representative samples of natural ecosystems, must be safeguarded for the benefit of present and future generations through careful planning or management', and that any negative impact on the environment 'must be halted in order to ensure that serious or irreversible damage is not inflicted upon ecosystems'.²⁴

In several principles of the Stockholm Declaration, ecosystem conservation is noted indirectly by recognizing the need to support the ecosystem functions of natural objects. For example, the Declaration states that 'the capacity of the Earth to produce vital renewable resources must be maintained and, wherever practicable, restored or improved'.²⁵ There are also principles where the requirements for the equitable use of natural resources are enshrined in order 'to ensure that benefits from such employment are shared by all mankind',²⁶ as well as principles that emphasize the adaptation of integrated and coordinated approach to States' development planning 'so as to ensure that development is compatible with the need to protect and improve environment for the benefit of their population', and which stress the importance of rational planning as a means of 'reconciling any conflict between the needs of development and the need to protect and improve the environment'.²⁷ In general, according to experts in public international law, in particular G. Handl, a strong undercurrent in this

²³ IA Cverianashvili, 'Stokgol'mskaja konferencija 1972 g. i ejo rol' v stanovlenii mezhdunarodnogo jekologicheskogo sotrudnichestva' (2016) 1 Vestnik Nizhegorodskogo universiteta imeni N.I. Lobachevskogo 91.

²⁴ Stockholm Declaration principles 2, 6.

²⁵ ibid principle 3.

²⁶ ibid principle 5.

²⁷ ibid principles 13, 14.

Declaration is sustainable development, even though the World Commission on Environment and Development (WCED) was not to coin the concept until several years after Stockholm.²⁸

So, the Stockholm Declaration, approved at the Stockholm Conference in 1972, has become a reference point for awareness of the importance of conserving natural ecosystems on a global scale. Not without reason, one year after this Conference, its Secretary-General M.F. Strong wrote in his article 'One Year after Stockholm: An Ecological Approach to Management':

“For the first time we began to see that all mankind literally is in the same boat – that the world community is faced with its first truly global problem. It was the truth that ecologists and poets before them had been trying to tell us: in nature everything is tied together.”²⁹

The ecosystem trend introduced by the Stockholm Declaration can be clearly seen in the World Conservation Strategy³⁰ (WCS) prepared by the International Union for Conservation of Nature and Natural Resources (IUCN) and published on 5 March 1980. The WCS notes that human beings, in their quest for economic development and enjoyment of the riches of nature, must come to terms with the reality of resource limitation and the carrying capacities of ecosystems, and must take account of future generations' needs. This is the message of conservation, for if the objective of development is social and economic welfare, the motif of conservation is to ensure Earth's capacity to sustain development and to support all life.³¹

One of the main objectives of living resource conservation the WCS recognizes is the maintenance of essential ecological processes (those processes that are governed, supported or strongly moderated by ecosystems and are essential for food production, health and other aspects of human survival and sustainable development) and 'life-support systems', for example, watershed forests or coastal wetlands.

²⁸ G Handl, 'Declaration of the United Nations Conference on the Human Environment (Stockholm Declaration), 1972 and the Rio Declaration on Environment and Development, 1992' (2013) United Nations Audiovisual Library of International Law 5.

²⁹ MF Strong, 'One Year after Stockholm: An Ecological Approach to Management' (1973) 51(4) Foreign Affairs 691.

³⁰ World Conservation Strategy: Living Resource Conservation for Sustainable Development. IUCN-UNEP-WWF, 1980.

³¹ *ibid* foreword.

The maintenance of such processes and systems is vital for all societies regardless of their stage of development.

The leading place in the WCS is occupied by the preservation of genetic diversity and the sustainable utilization of species and ecosystems. It is noted that unique ecosystems should be protected as a matter of priority, and for this reason only those uses compatible with their preservation should only be permitted. At the same time, a complete range of ecosystems in each country should be protected so that the range of diversity in nature is preserved. In addition, species and ecosystems should not be so heavily exploited that they decline to levels or thresholds from which they cannot easily recover.

It is obvious that in contrast to the Stockholm Declaration the WCS had a clearer ecosystem focus. As I.V. Krjash points out, the WCS builds on the Earth's limited resources and the carrying capacity of ecosystems as realities with which humanity must align its pursuit of economic development and the enjoyment of natural wealth. Therefore, on the one hand, it supports the development path set by the Stockholm Conference and, on the other hand, it introduces the notion of sustainable development that takes into account the limits of acceptable impacts on ecosystems.³²

By the way, the second edition of the WCS which is called as 'Caring for the Earth: A Strategy for Sustainable Living'³³ was published in October 1991. Its aim is to help improve the condition of the world's people, by defining two requirements. One is to secure a widespread and deeply held commitment to a new ethics, the ethic for sustainable living, and to translate its principles into practice. The other is to integrate conservation and development: conservation to keep our actions within the Earth's capacity, and development to enable people everywhere to enjoy long, healthy and fulfilling lives. The Strategy also defines the basic concepts of sustainable living, in particular 'sustainable development', which is interpreted as 'improving the quality of human life while living within the carrying capacity of supporting ecosystems'.

³² IV Krjash, *Psihologija global'nyh jekologicheskikh izmenenij* (Har'kov: HNU imeni V.N. Karazina 2012) 94.

³³ *Caring for the Earth: A Strategy for Sustainable Living*. Published in partnership by IUCN, UNEP, WWF (1991)
<<https://portals.iucn.org/library/efiles/documents/cfe-003.pdf>> accessed 28 January 2024.

In the context of the protection and sustainable use of ecosystems the World Charter for Nature³⁴ (WCN), an international declarative document approved and proclaimed by United Nations General Assembly resolution 37/7 of 28 October 1982, deserves special attention. The WCN proclaims that: ‘mankind is a part of nature and life depends on the uninterrupted functioning of natural systems which ensure the supply of energy and nutrients’; ‘every form of life is unique, warranting respect regardless of its worth to man’; ‘man can alter nature and exhaust natural resources by his action or its consequences and, therefore, must fully recognize the urgency of maintaining the stability and quality of nature and of conserving natural resources’, because ‘lasting benefits from nature depend upon the maintenance of essential ecological processes and life support systems’ while ‘the degradation of natural systems owing to excessive consumption and misuse of natural resources... leads to the breakdown of the economic, social and political framework of civilization’; and therefore ‘man must acquire the knowledge to maintain and enhance his ability to use natural resources in a manner which ensures the preservation of the species and ecosystems for the benefit of present and future generations’.³⁵

Evaluating the above provisions, we can see that the WCN, although formally supporting the anthropocentric trends, as it also confirms the importance of preservation of the species and ecosystems ‘for the benefit of present and future generations’, but in its essence, as M.O. Medvedieva noted, it is a clear example of the introduction of the concept of ecocentrism in the mechanism of international legal regulation because it is based on the recognition of the need to respect nature and ensure its reproduction (not because a human needs it).³⁶

To this end, the WCN enshrined five general principles conforming to which all human activities concerning nature should be directed and evaluated: 1) nature shall be respected and its essential processes shall not be impaired; 2) the genetic viability on the earth shall not be compromised; the population levels of all life forms must be at least sufficient for their survival, and to this end necessary habitat shall be safeguarded; 3) all areas of the Earth, both land and sea, shall be

³⁴ World Charter for Nature (adopted and entered into force 28 October 1982) A/RES/37/7 (WCN).

³⁵ *ibid* preamble.

³⁶ MO Medvedieva, ‘Pryntsypy ekolohichnoi etyky v mizhnarodnii dohovirni ta sudovii praktytsi’ (2015) 124 (part I) Aktualni problemy mizhnarodnykh vidnosyn 69.

subject to these principles of conservation; special protection shall be given to unique areas, to representative samples of all the different types of ecosystems and to the habitat of rare or endangered species; 4) ecosystems and organisms, as well as the land, marine and atmospheric resources that are utilized by man, shall be managed to achieve and maintain optimum sustainable productivity, but not in such a way as to endanger the integrity of those other ecosystems or species with which they coexist; 5) nature shall be secured against degradation caused by warfare or other hostile activities. It should be noted that studying the principles of international law that apply to environmental relations, and referring to the 4th principle of the WCN, E.V. Vasilenko argues that it includes a definition of the concept of the ecosystem approach.³⁷

Thus, the analyzed documents were highly significant for the formation and development of the ecosystem approach in international environmental law. As D.K. Bekjashev notes referring to A.N. Vylegzhanin, ‘these documents do not define the term ‘ecosystem’ and do not disclose the content of ecosystem management’, but it was in the Stockholm Declaration and the WCN wherein the conceptual and legal framework of the ecosystem approach was first established.³⁸ A similar view is supported by O.M. Spektor, who, turning to D. Freestone, writes that the conceptual and legal framework for the ecosystem approach has been laid down in the texts of the Stockholm Declaration, the WCS and the WCN, although these terms do not apply.³⁹ D. Freestone himself speaks about it this way:

“The recognition of the importance of management of ecosystems themselves, rather than simply those of their components which may be of immediate significance to mankind, is a relatively recent phenomenon. Crucial steps in this development were the 1972 Stockholm Declaration and the 1980 IUCN World Conservation Strategy which formed the basis for the 1982 UN General Assembly World Charter for Nature, and which popularized the concept of, as well as the term, ‘life support

³⁷ EV Vasilenko, *Formirovanie mezhdunarodnogo prirodoresurnogo prava*, Candidate’s thesis (Rostov-na-Donu 2016) 52.

³⁸ DK Bekjashev, ‘Mezhdunarodno-pravovoj princip jekosistemnogo podhoda v upravlenii rybolovstvom’ (2016) 8(69) *Aktual’nye problemy rossijskogo prava* 183.

³⁹ OM Spektor, ‘Klasyfikatsiia mizhnarodno-pravovykh rezhymiv pryrodnykh resursiv za predmetom yikh rehuliuвання’ (2016) 41(3) *Naukovyi visnyk Uzhhorodskoho natsionalnoho universytetu. Series: Jurisprudence* 160.

systems' and which stressed the interrelationship of these with other ecological processes and genetic diversity."⁴⁰

4. PRIMACY IN THE REFLECTION OF THE ECOSYSTEM APPROACH

Since the early 1970s, agreements have begun to be concluded at the international level to protect not only separated species of flora and fauna (such as the so-called 'fish' conventions, conventions on the protection of birds and plants) or all species of flora and fauna and unique landscapes in a particular region (on the African continent, in the Western Hemisphere, etc.), but also the habitats of such species around the world.

A striking example of international environmental agreements of this type was adopted on 2 February 1971 in Ramsar (Iran) the Convention on Wetlands of International Importance Especially Waterfowl Habitat⁴¹ (Ramsar Convention) for *inter alia* stemming the progressive encroachment on wetlands and its conservation by combining far-sighted national policies with coordinated international action.⁴² Under this Convention, the List of Wetlands of International Importance has been created, where wetlands are designated for their international significance in terms of ecology, botany, zoology, limnology or hydrology. In the first instance, wetlands of international importance to waterfowl at any season should be included.⁴³

Exploring the history of the Ramsar Convention, M.N. Kopylov and A.M. Solncev indicate that in its development phase it was aimed specifically at the protection of waterfowl through the establishment of a network of protected areas, but as the text of the Convention improved, the protection of wetland habitats (rather than species) became a priority. In scientists' opinion, the unique feature of this Convention is that it is based on an ecosystem approach, as it not only aims to conserve

⁴⁰ D Freestone, 'The Conservation of Marine Ecosystems under International Law'. International Law and the Conservation of Biological Diversity. International Environmental Law and Policy Series. M. Bowman and C. Redgwell (eds). (London; Boston: Kluwer Law International 1996) 100.

⁴¹ Convention on Wetlands of International Importance Especially as Waterfowl Habitat (adopted 2 February 1971, entered into force 21 December 1975) 996 UNTS 245 (Ramsar Convention).

⁴² *ibid* preamble.

⁴³ *ibid* parts 1, 2 of art 2.

waterfowl, but also recognizes wetlands as ecosystems that are critical to biodiversity conservation and human well-being.⁴⁴ In another publication M.N. Kopylov, S.M. Kopylov and S.A. Mohammad also claim that this Convention was the first international environmental treaty to set standards for the conservation of a specific type of ecosystem.⁴⁵ This position is shared by O.M. Spektor noting that the Ramsar Convention is one of the first treaty sources of international law in the doctrine to provide for the protection of ecosystems.⁴⁶ Indeed, despite the fact that the Ramsar Convention text does not mention not only the ecosystem approach but also the term ‘ecosystem’ itself, it is obvious that it is an international legal instrument of an ecosystem essence, which is dedicated to the protection of living organisms (primarily waterfowl) in their inextricable link with their habitats (wetlands).

Some authors, among whom O. McIntyre⁴⁷ and M. Erdem,⁴⁸ researching the emergence of the ecosystem approach in the law of international watercourses, insist that one of the first agreements to reflect the concept of ecosystem integrity was the Great Lakes Water Quality Agreement⁴⁹ (GLWQA) signed at Ottawa (Canada) on 22 November 1978 between the United States of America and Canada to ‘restore and maintain the chemical, physical, and biological integrity of the waters of the Great Lakes Basin Ecosystem’.⁵⁰ It seems that this statement is true, since the GLWQA already broadly uses the term ‘ecosystem’ and defines it appropriately, indicating that ‘Great Lakes Basin Ecosystem’ means the interacting components of air, land, water and living organisms, including man, within the drainage basin.⁵¹

However, while many scientists rightly give the Ramsar Convention and the GLWQA primacy in the reflection of the ecosystem approach, the literature provides information on the existence of earlier examples of its recognition. One of them is

⁴⁴ Kopylov/Solncev (n. 14).

⁴⁵ MN Kopylov, SM Kopylov and SA Mohammad, ‘Kak formirovalas’ funkciya upravleniya OON v oblasti ohrany okruzhajushhej sredy’ (2013) 4 Vestnik RUDN. Seriya Juridicheskie nauki 304.

⁴⁶ O Spektor, ‘Mizhnarodne upravlinnia povodzhennia z zhyvymy pryrodnyym resursamy’ (2018) 9 Pidpriiemnytstvo, hospodarstvo i pravo 277.

⁴⁷ McIntyre (n. 13) 3.

⁴⁸ Erdem (n. 13) 1364.

⁴⁹ Agreement on Great Lakes Water Quality (adopted and entered into force 22 November 1978) 1153 UNTS 187 (GLWQA).

⁵⁰ Ibid art 2.

⁵¹ Ibid art 1.

Declaration on the Maritime Zone⁵² (Santiago Declaration) signed on 18 August 1952 by the governments of Chile, Ecuador and Peru. This Declaration constituted an unequivocal expression of rights of sovereignty over a 200 mile maritime zone and, additionally, has become a cornerstone of the new law of the sea.⁵³

Thus, as ‘a norm of their international maritime policy’, these governments declared that each of them possesses ‘exclusive sovereignty and jurisdiction’ over the sea along the coasts of their respective countries to a minimum distance of 200 nautical miles from these coasts, including the seabed and the subsoil thereof. This was the first attempt to give ‘international’ character to unilateral actions aimed at reviewing existing law. The actions taken by those countries explained the duty of governments to preserve and ensure for their peoples the natural resources of the maritime zones adjacent to their coasts.⁵⁴

Giving the rationale for the Santiago Declaration, A.V. Ovlashhenko and I.F. Pokrovskij note that Latin American ecologists and lawyers have suggested that the biome of the Central Peru, the warm water biome of the Ecuador and the cold-water biome of the North Chile region are located in the (Peruvian) The Humboldt current ecosystem. Their western borders are more distant from the Chilean coast than from Ecuador, but on average they are 200 miles wide. This is, in a nutshell, the concept of biological unity that Chile, Peru and Ecuador have justified in favour of the coastal state. Under this concept, people living on the coast also form part of the biological chain that begins at sea. By biological complex, the biome in Peru was first understood as a very prosaic thing, which is difficult to imagine as the basis for the subsequent ‘global’ ecosystem approach, namely the biological chain ‘anchovy – cormorants – guano’. The decline in anchovy stocks as a result of overfishing led to a reduction in bird stocks and, consequently, in the number of guanos collected in large quantities on Peru’s coastal islands.

⁵² Declaration on the maritime zone (adopted and entered into force 18 August 1952) 1006 UNTS 326 (Santiago Declaration).

⁵³ A Espaliat Larson, *The maritime boundary Chile–Peru* (Corporación de Estudios Internacionales, 2012) 9
<<http://repositorio.uchile.cl/handle/2250/123727?show=full>> accessed 28 January 2024.

⁵⁴ Slovar’ mezhdunarodnogo morskogo prava. Ju.G. Barsegov (ed.). (Moscow: Mezhdunarodnye otnosheniya 1985) 51.

Later, Chile, Ecuador and Peru expanded the concept of biome to include a range of living organisms in selected areas.⁵⁵

Scientists continue that the ecosystem model proposed in the Declaration, which justified the claims of States to extend sovereignty to areas of the high seas, was not initially widely supported. As international law of the sea expert A.A. Volkov wrote on this occasion in 1966: 'Understanding the precariousness... of the rationale for any violation of the international legal principle of freedom of the high seas, the states that signed the Santiago Declaration of 1952 have also put forward scientific arguments to defend their position. The concept of an ecosystem was used for this'.⁵⁶ But, as scientist further pointed out, in the substantiation of the theory of 'biome' prevailed arguments, which are mainly of economic nature and have nothing to do with the peculiarities of biology of living marine organisms living off the western coast of South America. At that time, the application of the ecosystem concept in practice would have divided many areas of the high seas between different states. For this reason, the concept of the ecosystem could not find support from the vast majority of States at the International Technical Conference on the Conservation of the Living Resources of the Sea (18 April – 10 May 1955, Rome, Italy). It was not recognized outside individual Latin American countries or at a later time. The concept of the ecosystem sparked a strong protest outside South America.⁵⁷ 'The practical implementation of the concept of ecosystem by Latin American countries', as A.A. Volkov pointed in the conclusion of his article, 'is a flagrant violation of universally recognized principles of international law'.⁵⁸

Another prominent international lawyer M.I. Lazarev wrote on this occasion that the struggle for marine ecological balance should be conducted by all States with all certainty and with the help of political, administrative, legal and other measures. However, all these measures do not in any way mean that the ecology of the sea becomes the imperative for international maritime law. And, while issues of the

⁵⁵ AV Ovlashhenko and IF Pokrovskij, 'Ispol'zovanie jekosistemnogo podhoda v morskoy dejatel'nosti: pravovye voprosy i ih diskussionnye momenty' (2010) <<https://wiselawyer.ru/poleznoe/42278-ispolzovanie-ehkosistemnogo-podkhoda-morskoy-deyatelnosti-pravovye-voprosy>> accessed 28 January 2024.

⁵⁶ AA Volkov, 'Konceptija jekosistemy i mezhdunarodnoe morskoe pravo' (1966) 3 Rybnoe hozjajstvo 88 in Ovlashhenko/Pokrovskij (n. 55).

⁵⁷ *ibid.*

⁵⁸ *ibid.*

environment and its protection have a very important role to play, neither quantitatively nor qualitatively will rules concerning the protection of the marine environment prevail over rules governing the political relations of States with respect to the use of the seas and oceans. The proposal to make 'the ecology of the sea the basis of the law of the sea' is scientifically untenable. This proposal attempts to replace the political basis of the law with an environmental one, which is totally unrealistic and should be rejected.⁵⁹

Nevertheless, it should be noted that over time the situation will change, and the ecological basis will affect the political one, and the concept of the ecosystem will occupy an important place in the legal regulation of international maritime relations.

5. THE ECOSYSTEM APPROACH TO MARITIME RELATIONS

A fundamental treaty in maritime relations is the United Nations Convention on the Law of the Sea⁶⁰ (UNCLOS), which was opened for signature on 10 December 1982. It established the legal regime and boundaries of the maritime spaces that are part of State territory, and the spaces forming zones of functional jurisdiction of States, as well as provided the legal framework for the activities of States in the study and use of the seas and oceans and their resources, including navigation and overflight, mineral exploration and mining, fishing, conservation and protection.

In studying the UNCLOS in the context of practice for an ecosystem approach to the sustainable use of the sea and its resources, A. Luttenberger notes that it provides legal framework for the implementation of an ecosystem approach to all activities conducted in maritime areas. And to confirm this thesis, the scientist refers to the relevant provisions of the UNCLOS. Firstly, he points out to the preamble, which declares that the problems of ocean space are closely interrelated and need to be considered as a whole. Secondly, he cites part 4 of article 61 of the UNCLOS 'Conservation of the living resources', according to which the coastal State shall take into

⁵⁹ MI Lazarev, *Morskaja jekologija i mezhdunarodnoe morskoe pravo (Kritika odnoj burzhuaznoj koncepcii)* (Moscow: IGPAN SSSR 1972) 183–185 in Ovlashenko/Pokrovskij (n. 55).

⁶⁰ United Nations Convention on the Law of the Sea (adopted 10 December 1982, entered into force 16 November 1994) 1833 UNTS 397 (UNCLOS).

consideration the effects on species associated with or dependent upon harvested species with a view to maintaining or restoring populations of such associated or dependent species above levels at which their reproduction may become seriously threatened. And, thirdly, he focuses on article 119 which contains analogous wording.⁶¹

A similar opinion is expressed by D.K. Bekjashev, who says that the UNCLOS does not contain the concept of an ecosystem approach, but it stresses the need to take action to protect vulnerable ecosystems. It requires States parties to take all necessary measures to conserve and protect the marine environment and to manage its resources through the interdependence of species (articles 61–67, 119). In general, these norms establish the application of an ecosystem approach to fisheries management.⁶²

The authors of the publication ‘On the Ecosystem Approach to the World Ocean Development’ also emphasize that, despite the absence of the ecosystem approach in the UNCLOS, it highlights the need to take action to protect vulnerable ecosystems. In addition, it provides the legal framework for the implementation of the ecosystem approach to all activities carried out in marine areas. The basic principles for the protection and conservation of the marine environment require States to protect all areas of the oceans from pollution from any source and to take special measures for rare or vulnerable ecosystems and habitats of depleted, threatened or endangered fish species and other forms of marine organisms.⁶³

At the same time, it should be noted that there are also opposing views on this issue in the scientific literature. M.Yu. Bezdieniezhna, for example, notes that the UNCLOS does not contain clear obligations to protect marine ecosystems and provides for the ‘maximum sustainable yield’ approach based on the protection of only one species. Although the UNCLOS refers to associated species (article 119), it does not provide a clear mechanism for putting these provisions into practice. Obviously,

⁶¹ A Luttenberger, ‘Legal challenges of ecosystem approach to sustainable use of the sea’. UNESCO sponsored 4rd Dubrovnik Conference on Sustainable Development of Energy, Water and Environment Systems, Faculty of Mechanical Engineering and Naval Architecture (2007)
<https://www.researchgate.net/publication/253650156_Legal_challenges_of_ecosystem_approach_to_sustainable_use_of_the_sea> accessed 28 January 2024.

⁶² Bekjashev (n. 38) 185.

⁶³ *Teorija i praktika morskoj dejatel'nosti*. Serija nauchnyh publikacij pod redakciej prof. G.K. Vojtlovskogo. Issue 18. Mezhdunarodnye uslovija. G.E. Gigolaev, P.A. Gudev (eds). (Moscow: SOPS 2010) 183.

the researcher continues, it was not the goal of lawmakers to explicitly enshrine ecosystem management in this Convention and, for objective reasons, lack of sufficient knowledge about the subtle ecosystem links between ecosystem components. Since, in theory, such management should take into account all possible relationships between a particular fish resource and predators, other similar species and their own prey; the impact of weather and climate on fish resources; and the complex relationship between fish resources and their natural environment.⁶⁴

P.A. Gudev also notes that the ecosystem approach has never been part of the UNCLOS. Attempts to attribute an ‘ecosystem’ orientation to the UNCLOS can only be seen as speculative. It has only one article that mentions the term ‘ecosystem’ itself. This is article 194(5) on measures to prevent, reduce and control pollution of the marine environment, which states: ‘The measures taken in accordance with this Part shall include those necessary to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life’. Among other things, the implementation of the ecosystem approach requires the mandatory application of the same measures for the protection of the marine environment and marine living resources both within and beyond the areas of national jurisdiction of coastal States. However, the realization of the ecosystem approach contradicts the zonal approach, which divides the oceans into different spatial zones and which, in turn, is the basis of the UNCLOS.⁶⁵

Indeed, in the UNCLOS the ecosystem component can only be traced to a formal obligation of States to protect and preserve rare or vulnerable ecosystems. Nonetheless, it should not be forgotten that this Convention was adopted at the Third United Nations Conference on the Law of the Sea (1973–1982), the main impetus to the convening of which was the speech by the Malta’s Ambassador to the United Nations A. Pardo in 1967 at the session of the United Nations General Assembly, where he called on countries to open their eyes to the impending conflict that could endanger the very existence of humankind and destroy the oceans. He cited the lack of regulation of relations in the maritime domain as the cause of such conflict. This speech came at a time when

⁶⁴ MYu Bezdieniezhna, ‘Zastosuvannia ekosystemnoho pidkhodu do rehuliuвання rybnykh resursiv’ (2013) 2 *Ukrainskyi chasopys mizhnarodnoho prava* 97.

⁶⁵ PA Gudev, *Konvencija OON po morskomu pravu: problemy transformacii rezhima* (Moscow: IMJemo RAN 2014) 148–149, 150.

many people recognized the need to renew the doctrine of the freedom of the high seas, which did not take into account scientific and technological progress that had changed the way people treated the sea.⁶⁶

Thus, the main purpose of the UNCLOS, as reported by P.A. Gudev himself, was to develop a new spatial and legal hierarchy of the World Ocean,⁶⁷ while the ecosystem component of the Convention has been overshadowed and expressed only in a few provisions. Although, on the other hand, comparing this Convention with the Geneva Conventions on the Law of the Sea⁶⁸ signed on 29 April 1958, which, according to T. Treves, are the expressions of the 'traditional law of the sea' and the importance of them is currently mostly historical,⁶⁹ some progress in that direction can be traced, as the Geneva Conventions do not contain any articles at all on the protection and conservation of marine ecosystems. Furthermore, on 4 August 1995 the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks⁷⁰ was adopted, in which the issues of protection and conservation of marine ecosystems were continued.

Within the framework of the maritime theme also note that in order to develop the strengthening and improvement of the legal regime for the protection of the marine environment, the Convention on the Protection of the Marine Environment of the Baltic Sea Area⁷¹ (Helsinki Convention) was adopted on 9 April 1992 in Helsinki (Finland), and on 21 April 1992 in Bucharest (Romania) the Convention

⁶⁶ EA Grin' and AS Malimonova, 'Iskusstvennye zemel'nye uchastki v mezhdunarodnom prave: Konvencija OON po morskomu pravu' (2017) 132 (08) Nauchnyj zhurnal KubGAU 5.

⁶⁷ Gudev (n. 65) 21.

⁶⁸ Convention on the Territorial Sea and the Contiguous Zone; Convention on the High Seas; Convention on Fishing and Conservation of the Living Resources of the High Seas; Convention on the Continental Shelf.

⁶⁹ T Treves, '1958 Geneva Conventions on the Law of the Sea' (2008) United Nations Audiovisual Library of International Law 3.

⁷⁰ Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (adopted 4 August 1995, entered into force 11 December 2001) 2167 UNTS 3 (United Nations Fish Stocks Agreement).

⁷¹ Convention on the Protection of the Marine Environment of the Baltic Sea Area (adopted 9 April 1992, entered into force 17 January 2000) 1507 UNTS 166 (Helsinki Convention).

on the Protection of the Black Sea Against Pollution⁷² (Bucharest Convention) was signed. The Helsinki Convention obliges the Contracting Parties to take preventive measures when there is reason to assume that substances or energy introduced into the marine environment may create hazards to human health, and harm the living resources and marine ecosystems,⁷³ and also individually and jointly to take all appropriate measures with respect to the Baltic Sea Area and its coastal ecosystems influenced by the Baltic Sea to conserve natural habitats and biological diversity and to protect ecological processes.⁷⁴ Similar obligations are contained in the Bucharest Convention to prevent, reduce and control pollution, thereof, in order to protect and preserve the marine environment of the Black Sea.⁷⁵

Assessing the Bucharest Convention, V. Velikova, S. Vinogradov and M. Gvilava note that its provisions are general and vague. There is virtually no reference to such popular environmental law principles and concepts as the precautionary principle, sustainable development, ecosystem approach, etc. The document is not relevant, as its focus is on pollution prevention and control, which does not fully reflect today's environmental imperatives, such as integrated marine and coastal area management and biodiversity protection, including the sustainable use of marine living and mineral resources. Some of the obvious gaps and shortcomings of the Bucharest Convention were addressed through the adoption of the Black Sea Biodiversity and Landscape Conservation Protocol in 2002.⁷⁶

This comment should be accepted because the Bucharest Convention hardly reflects an ecosystem approach. However, going beyond the scope of our research, we confirm that ecosystem approach, indeed, is already clearly seen in the Black Sea Biodiversity and

⁷² Convention on the Protection of the Black Sea Against Pollution (adopted 21 April 1992, entered into force 15 January 1994) 1764 UNTS 3 (Bucharest Convention).

⁷³ Helsinki Convention part 2 of art 3.

⁷⁴ *ibid* art 15.

⁷⁵ Bucharest Convention part 2 of art 5.

⁷⁶ Nauchnoe obespechenie sbalansirovannogo planirovaniya hozjajstvennoj dejatel'nosti na unikal'nyh morskikh beregovykh landshaftah i predlozheniya po ego ispol'zovaniju na primere Azovo-Chernomorskogo poberezh'ja. R.D. Kos'jan (ed.), vol. 9. Gelendzhik (2013) 1345–1346 <https://coastdyn.ru/e-lib/tom09_2013.pdf> accessed 28 January 2024.

Landscape Conservation Protocol to the Bucharest Convention⁷⁷ adopted on 14 June 2002, as its purpose is recognized to maintain the Black Sea ecosystem in the good ecological state.⁷⁸ The Protocol also fixes the obligations to prohibit all actions that may have harmful impacts on the ecosystems,⁷⁹ to implement measures to eradicate or reduce to an possible level species that have already been introduced when it appears that such species cause or are potentially causing damage to ecosystems,⁸⁰ to refrain from action, which endanger the ecosystems or the biological processes contributing to the maintenance of those ecosystems.⁸¹

The last international agreement that we will pay a little bit of attention to as part of the study of the ecosystem approach to maritime relations is the Convention for the Protection of the Marine Environment of the North-East Atlantic⁸² (OSPAR Convention) which was concluded in Paris (France) on 22 September 1992 on the basis of the recognition of the need to manage ‘human activities in such a manner that the marine ecosystem will continue to sustain the legitimate uses of the sea and will continue to meet the needs of present and future generations’,⁸³ and with purpose to ‘take the necessary measures to protect the maritime area against the adverse effects of human activities so as to safeguard human health and to conserve marine ecosystems’.⁸⁴ In 1998, to the OSPAR Convention a new Annex V ‘On the Protection and Conservation of the Ecosystems and Biological Diversity of the Maritime Area’ was adopted which obligates Contracting Parties to ‘take the necessary measures to protect and conserve the ecosystems and the biological diversity of the maritime

⁷⁷ Black Sea Biodiversity and Landscape Conservation Protocol to the Convention on the Protection of the Black Sea against Pollution (adopted 14 June 2002, entered into force 20 June 2011) (Black Sea Biodiversity Protocol) <www.blacksea-commission.org/_convention-protocols-biodiversity.asp> accessed 28 January 2024.

⁷⁸ *ibid* part 1 of art 1.

⁷⁹ *ibid* part 1 of art 5.

⁸⁰ *ibid* part 2 of art 5.

⁸¹ *ibid* para ‘a’ of part 1 of art 8.

⁸² The Convention for the Protection of the Marine Environment of the North-East Atlantic (adopted 22 September 1992, entered into force 25 March 1998) 2354 UNTS 67 (OSPAR Convention).

⁸³ *ibid* preamble.

⁸⁴ *ibid* part 1(a) of art 2.

area, and to restore, where practicable, marine areas which have been adversely affected'.⁸⁵

6. THE ECOSYSTEM APPROACH TO THE ARCTIC AND ANTARCTIC

The Arctic region, which covers much of Earth's northern pole, is a unique and one of the most biologically productive ecosystems in the world with a complex food web made up of organisms adapted to its extreme conditions. It sits at the top of world, covered in sea ice – a seemingly unwelcome place for life. Yet the Arctic is actually teeming with wildlife, from large mammals like walruses and polar bears to birds, fish, small plants, and even tiny ocean organisms called plankton. In addition, this region is vital to the identity, culture, and survival of its Indigenous people.⁸⁶

The importance of the Arctic ecosystem protection is mentioned in Agreement on the Conservation of Polar Bears⁸⁷ signed by the States of the Arctic Region in Oslo (Norway) on 15 November 1973. This Agreement obliges each Contracting Party to take appropriate action to protect the ecosystems of which polar bears are a part, with special attention to habitat components such as denning and feeding sites and migration patterns, and to manage polar bear populations in accordance with sound conservation practices based on the best available scientific data.⁸⁸

In September 1989, officials from the eight Arctic countries met in Rovaniemi (Finland) to discuss cooperative measures to protect the Arctic environment.⁸⁹ As a result of numerous subsequent meetings and discussions, on 14 June 1991 the Arctic Environmental Protection Strategy (AEPS) and the Declaration on the Protection of the Arctic Environment (Rovaniemi Declaration) were formally adopted, and which are fully consistent with the ecosystem approach. According to the AEPS, its first objective is 'to protect the Arctic ecosystem

⁸⁵ *ibid* art 2 of Annex V.

⁸⁶ The Arctic. The National Wildlife Federation <www.nwf.org/Educational-Resources/Wildlife-Guide/Wild-Places/Arctic> accessed 28 January 2024.

⁸⁷ Agreement on the Conservation of Polar Bears (adopted 15 November 1973, entered into force 26 May 1976) 2898 UNTS 243 (ACPB).

⁸⁸ *ibid* art II.

⁸⁹ Arctic Environmental Protection Strategy (adopted 14 June 1991) (AEPS) <http://library.arcticportal.org/1542/1/artic_environment.pdf> accessed 28 January 2024.

including humans',⁹⁰ while among the principles under which the implementation of the AEPS is envisaged are the following: i) management, planning and development activities shall provide for the conservation, sustainable utilization and protection of Arctic ecosystems for the benefit and enjoyment of present and future generations, including Indigenous peoples; ii) management of natural resources shall be based on an approach which considers the value and interdependent nature of ecosystem components, etc.⁹¹

In support of the AEPS and with the aim of protection and preservation of the Arctic environment on 16 September 1993 the Nuuk Declaration on Environment and Development in the Arctic⁹² (Nuuk Declaration) was adopted in Nuuk (Greenland). It acknowledges that the Arctic environment consists of ecosystems with unique features and resources which are especially slow to recover from the impact of human activities, and therefore there is a need for cooperation for the conservation, protection and restoration of ecosystems. Considering this the Ministers of the Arctic Countries endorsed the Conservation of Arctic Flora and Fauna (CAFF) as a demonstration of international cooperation for conservation and sustainable use of Arctic resources using an ecosystem approach and encouraged CAFF's continuation of the ecosystem approach as a basis for promoting more effective conservation of Arctic resources.

Turning to the Antarctic ecosystem, it worth noting that as a part of the Antarctic Treaty System, based on the Antarctic Treaty (1959),⁹³ on 1 June 1972 the Convention on the Conservation of Antarctic Seals⁹⁴ was adopted in London (Great Britain) for the protection, scientific study and rational use of Antarctic seals, as well as to maintain a satisfactory balance of the ecological system. It contains the obligations of Contracting Parties to report on the basis of the statistical, biological and other evidence available when the harvest of any species of seal in the

⁹⁰ *ibid* 2.1 'i'.

⁹¹ *ibid* 2.2.

⁹² The Nuuk Declaration on Environment and Development in the Arctic (adopted 16 September 1993) (Nuuk Declaration)
<<https://iea.uoregon.edu/MarineMammals/engine/Documents/1-0279-0287.htm>>
accessed 28 January 2024.

⁹³ The Antarctic Treaty (adopted 1 December 1959, entered into force 23 June 1961) 402 UNTS 71 (Antarctic Treaty).

⁹⁴ Convention on the Conservation of Antarctic Seals (adopted 1 June 1972, entered into force 11 March 1978) 1080 UNTS 175 (CCAS).

Convention area is having a significantly harmful effect on the total stocks of such species or on the ecological system in any particular locality.⁹⁵

On 20 May 1980 also within the framework of the Antarctic Treaty System in Canberra (Australia) the Convention on the Conservation of Antarctic Marine Living Resources⁹⁶ (Canberra Convention, or CAMLR Convention) was adopted. From the beginning, this Convention had a clear ecosystem focus, because a key role in its creation was concern that increased catch of krill in the Southern Ocean could seriously affect populations of krill and other marine animals, particularly birds, seals and fish, for which krill are a major source of food.⁹⁷

As reported by I.P. Dudykina, foreign legal scholars correctly consider the Canberra Convention as the 'model' international agreement that provides for an ecosystem approach to the conservation of living natural resources. D. Freestone, for example, qualifies the marine biological resources regime, established by the Convention as a 'model of an environmental (ecological) approach'. Indeed, already in the preamble of the Convention the importance of 'protecting the integrity of the ecosystem of the seas surrounding Antarctica' and increasing 'knowledge of the Antarctic marine ecosystem and its components' are recognized. Unlike the Antarctic Treaty 1959, the area of which lies between the South Pole and the 60° South latitude, the Canberra Convention extends to that area and beyond, attributing to 'Antarctic marine living resources' located in the area between the said parallel and the line of 'Antarctic convergence' (part 1 of article I).⁹⁸

Pursuant to the Canberra Convention 'Antarctic marine ecosystem' means the complex of relationships of Antarctic marine living resources (the populations of fin fish, molluscs, crustaceans and all other species of living organisms, including birds, found south of the Antarctic Convergence) with each other and with their physical

⁹⁵ *ibid* preamble and part 4 of art 5.

⁹⁶ Convention on the Conservation of Antarctic Marine Living Resources (adopted 20 May 1980, entered into force 7 April 1982) 1329 UNTS 47 (Canberra Convention, or CAMLR Convention).

⁹⁷ Antarkticheskij kril'. Istorija sozdaniya ANTKOM. Kratkij obzor (ZAO 'Russkaja pelagicheskaja issledovatel'skaja kompaniya') (2011) <<http://ruspelagic.ru/d/290162/d/5142355.pdf>> accessed 28 January 2024.

⁹⁸ IP Dudykina, 'Zarubezhnye analitiki o sovershenstvovanii mezhdunarodno-pravovykh mekhanizmov jekosistemnogo upravlenija v Arktike' (2016) 2 Moskovskij zhurnal mezhdunarodnogo prava 97.

environment.⁹⁹ As V.V. Golitsyn and A.V. Ovlashhenko rightly note, there is perhaps no area on Earth that is more fragile and sensitive to the ecological balance than Antarctica. The Antarctic ecosystem is particularly vulnerable to changes in environmental conditions or the scale of resource exploitation, as it is extremely difficult to remove contaminants or regenerate organisms that have been damaged. For the oceanic waters around the Antarctic continent, scientists continue, a projected increase in sea temperature of just 2–3 °C over the next 100 years would mean the loss of many valuable marine biological resources. It is therefore no coincidence that the Canberra Convention has pioneered an ecosystem approach to conserving living natural resources. The novelty and uniqueness of the Convention lies primarily in its construction based on the so-called ecosystem approach. The Convention was the first international agreement for the conservation and sustainable use of marine living resources based on this approach, which is universally accepted today.¹⁰⁰

The Canberra Convention defines the principles for the conservation of marine living resources under which fisheries and related activities should be carried out: (a) prevention of decrease in the size of any harvested population to levels below those which ensure its stable recruitment; (b) maintenance of the ecological relationships between harvested, dependent and related populations of Antarctic marine living resources and the restoration of depleted populations; and (c) prevention of changes or minimization of the risk of changes in the marine ecosystem which are not potentially reversible over two or three decades, taking into account the state of available knowledge of the direct and indirect impact of harvesting, the effect of the introduction of alien species, the effects of associated activities on the marine ecosystem and of the effects of environmental changes, with the aim of making possible the sustained conservation of Antarctic marine living resources.¹⁰¹ All of the above articles and the Canberra Convention as a whole, as noted by N.N. Kuharev, Ju.V. Korzun and N.N. Zhuk, turned out to be focused on the issues of fisheries regulation with the condition of maximum conservation of the Antarctic

⁹⁹ Canberra Convention art I.

¹⁰⁰ VV Golitsyn, AV Ovlashhenko, 'Mezhdunarodno-pravovoj rezhim Antarktiki' in *Mezhdunarodnoe pravo: uchebnik*. N. Vylegzhanin (ed.) (Moscow: Vysshee obrazovanie, Jurajt-Izdat 2009) 221–222.

¹⁰¹ Canberra Convention part 3 of art II.

ecosystem. This is the first time in world fisheries management practice that such a focus has been declared an ecosystem approach to fisheries management.¹⁰²

The essential ecosystem component of the Canberra Convention was also highlighted by V. De Lucia,¹⁰³ and S.R. Enright and B. Boteler, who quoted him, pointing out that this Convention is a good illustration of the ecosystem approach in action via its incorporation of basic principles of ecosystem ecology, its recognition of the importance of ecosystem interrelationships and its focus on the various components of the marine ecosystem.¹⁰⁴

The Canberra Convention established the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) headquartered in Hobart (Australia) to conserve Antarctic marine ecosystems using an ecosystem approach to their management. This management does not preclude research and commercial fisheries for marine living resources, but it is managed on the condition that fishing is ongoing and takes into account the impact of fishing on other ecosystem components.

Analyzing the Canberra Convention, D.K. Bekjashev writes that it was the first international treaty to establish an ecosystem approach to fisheries management. To confirm this, he cites the words of V.V. Golicyn, who believes that the marine biological resources regime established by this Convention represents a new model for the environmental approach, as well as the views of the authors of the book 'CCAMLR – Approach to Management', who note that unlike other multilateral fisheries agreements, the Convention not only regulates fisheries, but is also responsible for ecosystem conservation. This 'ecosystem approach', which sees the entire Southern Ocean as a set of interconnected ecosystems, distinguishes the Convention from other multilateral fisheries agreements.¹⁰⁵ These same authors note that CCAMLR was one of the first to develop what later became known as the 'ecosystem approach' to fisheries management. This approach does

¹⁰² NN Kuharev, JuV Korzun and NN Zhuk, 'Ob jekosistemnom podhode ANTKOM k upravleniju promyslom Antarkticheskogo krilja (obzor)' (2017) 54 Trudy JugNIRO 42.

¹⁰³ V De Lucia, 'Competing narratives and complex genealogies: The ecosystem approach in international environmental law' (2015) 27 Journal of Environmental Law 107–108.

¹⁰⁴ Enright/Boteler (n. 13) 340.

¹⁰⁵ Bekjashev (n. 38) 184.

not focus exclusively on the species being targeted, but also sought ways to avoid situations in which fisheries adversely affected ‘dependent and associated species’, i.e. animals with which humans compete for food resources. CCAMLR’s approach is to regulate human activities (i.e. fishing) so that harmful changes to the Antarctic ecosystem can be avoided.¹⁰⁶

Similar wording is contained in another publication ‘CCAMLR – Antarctic Management’ which notes that, the following two concepts have evolved from the Canberra Convention principles, which are key to the CCAMLR approach to management: (i) management should be based on precautionary approach, and (ii) management follows an ecosystem approach (i.e. all subtle and complex relationships between all organisms and physical processes (such as currents, sea temperature) that make up the Antarctic marine ecosystem must be considered). Given the complexity of the ecosystem approach, it is not surprising that multilateral fisheries conventions and fisheries managers have largely ignored this approach, instead focusing on the management of target species. The CCAMLR’s ecosystem approach focuses not only on regulating fisheries for individual species, but also to ensure that fisheries do not adversely affect other species that are dependent on or associated with the target species. For example, while there is direct monitoring and management of krill fisheries, CCAMLR also seeks to monitor the possible impact of these fisheries on krill feeders and associated species. In this way, the CCAMLR seeks to maintain a healthy ecosystem by establishing protective limits on krill catches that take into account the needs of the linked species in order to ensure their ecological sustainability. CCAMLR’s pioneering work on precautionary and ecosystem approaches provides an example for fisheries organizations around the world.¹⁰⁷

Continuing the theme of protection of the Antarctic ecosystem, it should be mentioned that on 4 October 1991 in Madrid (Spain) the Protocol on Environmental Protection to the Antarctic Treaty¹⁰⁸ (also

¹⁰⁶ ANTKOM – Podhod k upravljeniju. K-G Kok (ed.) (2000) 11, 12
<<http://archive.ccamlr.org/pu/r/pubs/am/text.pdf>> accessed 28 January 2024.

¹⁰⁷ ANTKOM – upravljenje Antarktikoj (Hobart: ANTKOM) (2001) 7–8
<www.ccamlr.org/ru/system/files/MgmtOfTheAntarctic_ru.pdf> accessed 28 January 2024

¹⁰⁸ Protocol on Environmental Protection to the Antarctic Treaty (adopted 4 October 1991, entered into force 14 January 1998) 2941 UNTS 3 (Antarctic-Environmental Protocol, or Madrid Protocol).

known as the Antarctic-Environmental Protocol, or the Madrid Protocol) was signed, which entrusted the Parties with the responsibility for comprehensive protection of the Antarctic environment and dependent and associated ecosystems, and also proclaimed Antarctica as a natural reserve, devoted to peace and science.¹⁰⁹

7. THE ECOSYSTEM APPROACH TO CONSERVATION OF WILDLIFE, ATMOSPHERE, MOUNTAINS AND WATERCOURSES

Some ecosystem aspects are provided for in international environmental agreements dedicated to wildlife conservation. Thus, on 3 March 1973 in Washington (D.C., USA) the Convention on International Trade in Endangered Species of Wild Fauna and Flora¹¹⁰ (Washington Convention, or CITES) was signed. The main purpose of this Convention is to combat illegal catch and trade in wild animals and plants, because wild fauna and flora in their many beautiful and varied forms are an irreplaceable part of the natural systems of the Earth, which must be protected for this and the generations to come.¹¹¹

In keeping with the CITES, wild flora and fauna species are classified into three groups (appendixes), which include: species threatened with extinction, and any trade in specimens of these species must be subject to particularly strict regulation;¹¹² species which although not necessarily now threatened with extinction may become so unless trade in specimens of such species is subject to strict regulation;¹¹³ species which any Party identifies as being subject to regulation for the purpose of preventing or restricting exploitation, and as needing the cooperation in the control of trade.¹¹⁴ As for the protection of ecosystems, the Convention contains some comments on trade in specimens of fauna and flora species listed in Appendix II. It is stated that Scientific Authority of each Party shall monitor both the export permits granted by that State for specimens of species included

¹⁰⁹ Antarctic-Environmental Protocol art 2.

¹¹⁰ Convention on International Trade in Endangered Species of Wild Fauna and Flora (adopted 3 March 1973, entered into force 1 July 1975) 993 UNTS 243 (Washington Convention, or CITES).

¹¹¹ *ibid* preamble.

¹¹² *ibid* Appendix I.

¹¹³ *ibid* Appendix II.

¹¹⁴ *ibid* Appendix III.

in Appendix II and the actual exports of such specimens. Whenever a Scientific Authority determines that the export of specimens of any such species should be limited in order to maintain that species throughout its range at a level consistent with its role in the ecosystems in which it occurs, the Scientific Authority shall advise the appropriate Management Authority of suitable measures to be taken to limit the grant of export permits for specimens of that species.¹¹⁵

As M.N. Kopylov and K.A. Merkulova, who analyzed the above provisions of the CITES, claimed, the need to prohibit or strictly control wildlife hunting at a level that enables them to re-establish their populations is one of the generally accepted rules in international environmental law, and in particular as it relates to biota conservation. In modern international environmental law, this rule is embodied in the concept of sustainable development and ecosystem management.¹¹⁶

The next international agreement on the conservation of animal species and their habitats is the Convention on the Conservation of Migratory Species of Wild Animals¹¹⁷ (Bonn Convention, or CMS) adopted on 23 June 1979 in Bonn (Germany), in which the Contracting Parties recognized that wild animals in their innumerable forms are an irreplaceable part of the Earth's natural system that must be conserved for the good of mankind, while among the fundamental principles for achieving this goal is taking appropriate and necessary steps to conserve not only species, but also their habitats. Describing the provisions of the Bonn Convention from the perspective of the ecosystem approach, M.S. Cipris notes that it takes ecosystems into account and thus considers species in their ecosystem context, and also pays special attention on exploring the relationship between the ecosystem approach and the sustainable use and conservation of migratory species of wild animals, taking into account the approach based on the migratory-areal zoning.¹¹⁸

¹¹⁵ *ibid* part 3 of art IV.

¹¹⁶ MN Kopylov and KA Merkulova, 'K 40-letiju Vashingtonskoj konvencii o mezhdunarodnoj trgovle vidami dikoj fauny i flory, nahodjashhimisja pod ugroznoj ischeznovenija' (2013) 3 Vestnik RUDN. Serija Juridicheskie nauki 291.

¹¹⁷ Convention on the Conservation of Migratory Species of Wild Animals (adopted 23 June 1979, entered into force 1 November 1983) 1651 UNTS 333 (Bonn Convention, or CMS).

¹¹⁸ MS Cipris, *Sovremennye mezhdunarodnye rezhimy ohrany i sohraneniya migrirujushhih vidov dikih zhivotnyh*. Candidate's thesis (Moscow 2016) 150, 151.

On 9 July 1985 in Kuala Lumpur (Malaysia) the countries of the Association of Southeast Asian Nations (ASEAN) concluded the first regional international treaty, the Agreement on the Conservation of Nature and Natural Resources¹¹⁹ which provides the obligation of the Contracting Parties to take measures to ensure the sustainability of life support systems, as well as the conservation of genetic diversity and the sustainable use of extractive natural resources under their jurisdiction.¹²⁰ As K.L. Koh¹²¹ and M. Islam¹²² point out, the main (foremost) object of the Agreement is conservation of wild flora, fauna and renewable resources including soil, vegetation, fisheries through the protection of ecosystems, habitats and endangered species, and by ensuring sustainable use of harvested ones.

Exploring this Agreement (some authors call it the Convention), N.A. Nguen and K.T. Nguen note that pursuant to experts, it is 'remarkable' and 'progressive'. The Convention, according to the mentioned researchers, is chronologically the second example of ecosystem management (the first example is obviously the Canberra Convention), as it provides for the obligation of the Contracting Parties to adopt the measures necessary to maintain essential ecological processes and life-support systems, to preserve genetic diversity, and to ensure the sustainable utilization of harvested natural resources under their jurisdiction in accordance with scientific principles and with a view to attaining the goal of sustainable development (article 1). And, although the ecosystem approach is expressed in this Convention in a low-productive general form, researchers highly appreciate its progressiveness and innovativeness, all the more so in the Southeast Asian region, where the developing countries are mainly located. The

¹¹⁹ ASEAN Agreement on the Conservation of Nature and Natural Resources (opened for signature 9 July 1985, not yet entered into force) (ACNNR) <<http://agreement.asean.org/media/download/20161129035620.pdf>> accessed 28 January 2024.

¹²⁰ MN Kopylov and VA Mishlanova, 'Vklad mezhdunarodnykh organizacij v reshenie jekologicheskikh problem' (2014) 2 *Mezhdunarodnoe pravo i mezhdunarodnye organizacii* 230.

¹²¹ KL Koh, 'ASEAN Agreement on the Conservation of Nature and Natural Resources, 1985: A Study in Environmental Governance', paper given to the World Parks Congress 2003 (Durban, 8–17 September 2003) 3 <<https://studylib.net/doc/7691261/asean-agreement-on-the-conservation>> accessed 28 January 2024.

¹²² M Islam, 'The ASEAN 1985 Agreement on the Protection of Nature and Natural Resources' (2019) 5(6) *International Journal of Legal Developments and Allied Issues* 45–46.

Convention's concept of ecosystem management, they emphasize, remains relevant today, as the ecosystem approach is the most effective and comprehensive approach to the management and conservation of nature and natural resources. The Convention should enter into force and apply to the entire South-East Asian region, which was recognized as a single ecosystem. And it is difficult to imagine sustainable development without an ecosystem approach at the regional level.¹²³

I.P. Dudykina also argues that the ASEAN Convention on the Conservation of Nature and Natural Resources focuses on ecosystem management. It recognizes 'the interdependence of living resources, between them and with other natural resources, within ecosystems of which they are part' (preamble), provides the obligations of the Contracting Parties to adopt 'the measures necessary to maintain essential ecological processes and life-support systems' (article 1), as well as 'appropriate measures to conserve animal and plant species whether terrestrial, marine and freshwater, and more specifically... conserve natural, terrestrial, freshwater and coastal or marine habitats' (article 3).¹²⁴

The next agreement aimed at protecting wildlife in an ecosystem context is the Declaration on Conservation of Flora, Fauna and their Habitats¹²⁵ adopted by the United Nations Economic Commission for Europe (UNECE) at its 43rd session (12–22 April 1988) in connection with the deterioration of wildlife in the European region. The Declaration sets out particular aims, the first of which is to conserve living natural resources, in the interests of present and future generations, by maintaining essential ecological processes and life-support systems, preserving genetic diversity, and ensuring sustainable utilization of species and ecosystems. As V.I. Kurylo, I.V. Hyrenko and

¹²³ NA Nguen and KT Nguen, 'Cherez obespechenie jekologicheskoy bezopasnosti k ustojchivomu razvitiju v regione Jugo-Vostochnoj Azii (mezhdunarodno-pravovoj aspekt)' (2011) 12 Zhurnal nauchnyh publikacij aspirantov i doktorantov <www.jurnal.org/articles/2011/uri50.html> accessed 28 January 2024.

¹²⁴ Dudykina (n. 98) 97, 98.

¹²⁵ ECE Declaration on Conservation of Flora, Fauna and their Habitats (adopted by ECE at its 43rd session April 1988) <www.cambridge.org/core/journals/environmental-conservation/article/ece-declaration-on-conservation-of-flora-fauna-and-their-habitats/E7BF1C0AF22F112D2D9E8249AFD81102> accessed 28 January 2024.

V.V. Kurzova write, in this Declaration the principles of the first edition of the WCS 1980 were implemented.¹²⁶

Around this time, particular relevance at the international level acquired the problem of conservation of the atmosphere, especially, protection against depletion of its ozone layer, vital for the survival of the Earth. In order ‘to protect human health and the environment against adverse effects resulting or likely to result from human activities which modify or are likely to modify the ozone layer’ on 22 March 1985 in Vienna (Austria) was adopted the Vienna Convention for the Protection of the Ozone Layer¹²⁷. Under the Convention, ‘adverse effects’ means changes in the physical environment or biota, including changes in climate, which have significant deleterious effects on human health or on the composition, resilience and productivity of natural and managed ecosystems.¹²⁸

Two years later, on 16 September 1987, the Montreal Protocol on Substances that Deplete the Ozone Layer¹²⁹ was adopted for that Convention, and two more years later, on 11 March 1989, the Hague Declaration on the Environment¹³⁰ was done in Hague (Netherlands), which contains an appeal to all States of the world and the competent international organizations to join in developing the legal instruments to protect the atmosphere and ozone layer and to counter climate change, particularly global warming. The Declaration especially stresses that ‘the consequences of these phenomena may well jeopardize ecological systems’, while the preservation of these ecosystems is the ‘fundamental duty’.

For ensuring the sustainable development of the Alpine region, including through the implementation of a comprehensive policy for the preservation and protection of the Alps, the highest mountain system in Europe, the Convention on the Protection of the Alps¹³¹ (Alpine

¹²⁶ VI Kurilo, IV Girenko and VV Kurzova, ‘Pravove zabezpechennja zberezhenja i vikoristannja genetichnih resursiv roslin cherez prizmu globalizacii problemi bio-bezpeki’ (2012) 173(3) *Naukovij visnik Nacional’nogo universitetu bioresursiv i prirodokoristuvannja Ukraïni. Series ‘Law’* 101.

¹²⁷ Vienna Convention for the Protection of the Ozone Layer (adopted 22 March 1985, entered into force 22 September 1988) 1513 UNTS 293 (VCPOL).

¹²⁸ *ibid* art 1.

¹²⁹ Montreal Protocol on Substances that Deplete the Ozone Layer (adopted 15 September 1987, entered into force 1 January 1989) 1522 UNTS 3 (Montreal Protocol).

¹³⁰ Hague Declaration on the Environment (adopted 11 March 1989) 28 ILM 1308.

¹³¹ Convention on the Protection of the Alps (adopted 7 November 1991, entered into force 6 March 1995) (Alpine Convention) [<www.alpconv.org/en/home/convention/framework-convention/>](http://www.alpconv.org/en/home/convention/framework-convention/) accessed 28 January 2024.

Convention) was signed on 7 November 1991 in Salzburg (Austria). It obliges the Contracting Parties to protect, conserve and, where necessary, rehabilitate the natural environment and the countryside, so that ecosystems are able to function, and also to preserve, reinforce and restore the role of forests, in particular their protective role, by improving the resistance of forest ecosystems.¹³² Analyzing the Alpine Convention, the team of authors, including V.S. Kravtsiv, P.V. Zhuk and I.A. Kolodiichuk, calls it ‘a demonstration of the ecosystem approach to solving environmental macro-regional problems at the inter-State level’,¹³³ while O.V. Rudenko entitles it ‘an example of an ecosystem-based conservation law paradigm’ or ‘an example of the practical implementation of an ecosystem-based conservation paradigm’, because, the scientist summarizes, this Convention, having an ecosystem character, ‘provides an example for future mountain conservation initiatives and provides a lesson in developing legal tools to meet the new challenge of time – the ecosystem approach in international environmental law’.¹³⁴

With the purpose to take national and international measures and cooperation on the protection, rational use, prevention, control and reduction of transboundary water pollution, on 17 March 1992 in Helsinki (Finland) the Convention on the Protection and Use of Transboundary Watercourses and International Lakes¹³⁵ (Water Convention) was adopted, which O. McIntyre cited as an example of ‘a shift in emphasis from a purely territorial and resource-utilization focus, to a more ecosystem-oriented approach’, from the practice of States and international organizations in relation to shared water resources.¹³⁶

The Water Convention promotes a holistic approach, taking into account the complex interrelationships between the hydrological cycle, land, flora and fauna, based on the understanding that water is an integral part of the ecosystem, a natural resource and a social and

¹³² *ibid* paras ‘f’, ‘h’ of part 2 of art 2.

¹³³ Naukovi osnovy formuvannia ta shliakhy realizatsii hirsnoi polityky v Ukraini. VS Kravtsiv, PV Zhuk, IA Kolodiichuk et al.; VS Kravtsiv (ed.). (Lviv: DU ‘Instytut rehionalnykh doslidzhen imeni MI Dolishnoho NAN Ukrainy’ 2018) 25.

¹³⁴ Rudenko (n. 14).

¹³⁵ Convention on the Protection and Use of Transboundary Watercourses and International Lakes (adopted 17 March 1992, entered into force 6 October 1996) 1936 UNTS 269 (Water Convention).

¹³⁶ McIntyre (n. 13) 2.

economic good.¹³⁷ Pursuant to this Convention, in order to prevent, control and reduce any transboundary impact the Parties take appropriate measures to ensure conservation and, where necessary, restoration of ecosystems.¹³⁸ As well as they develop, adopt, implement and render compatible relevant legal, administrative, economic, financial and technical measures to ensure that sustainable water-resources management, including the application of the ecosystems approach, is promoted.¹³⁹ As O.M. Spektor writes, the interpretation of this norm should be carried out taking into account the Guidelines on the Ecosystem Approach in Water Management (1993), issued a year later, which consider a river basin as an integral ecosystem and emphasize that water resources should not be managed in isolation from other ecosystem components (land, air, living resources, etc.).¹⁴⁰

Indeed, the interpretation of the Water Convention under consideration should take into account these Guidelines,¹⁴¹ which are intended to assist in the developing and implementing national policies, action plans, programmes and practices for the practical application of the ecosystem approach to day-to-day water management. The proposed measures, as noted in the Guidelines, would ensure a holistic approach to environmentally sound management of inland water resources and riparian vegetation, wetlands, riverine floodplains and associated wildlife and habitats. This approach entails a new level of national and international awareness and responsibility in solving complex and interrelated problems of the environment.¹⁴²

8. THE ECOSYSTEM APPROACH AND THE CONCEPT OF SUSTAINABLE DEVELOPMENT

In the late 1980s and early 1990s, there was a significant increase in the process of developing the concept of sustainable development at the international level. At the initiative of the United Nations Secretary-

¹³⁷ Конвенція ЕЖЕК ООН по охороні і іспол'зованню трансграничних водотоків і міжнародних озер 1992 года (UN, New York, Geneva 2004) 6.

¹³⁸ Water Convention para 'd' of part 2 of art 2.

¹³⁹ *ibid* para 'I' of part 1 of art 3.

¹⁴⁰ OM Spektor, *Mizhnarodno-pravove rehulivannia sfery pryrodoresursnykh vidnosyn*. Doctor's thesis (Kyiv 2019) 95.

¹⁴¹ Guidelines on the ecosystem approach in water management (1993) <www.unece.org/index.php?id=12847> accessed 28 January 2024.

¹⁴² *ibid* introduction.

General, the World Commission on Environment and Development was established in 1984, chaired by the Prime Minister of Norway G.H. Brundtland (Brundtland Commission). The main objectives of the Commission were: to propose long-term environmental strategies that would enable sustainable development by 2000 and beyond; to consider ways and means by which the world community could effectively address environmental problems. The Commission included about 200 of the world's best experts on environmental issues and development, representing five continents of the planet. The result of its two years of work was the Report 'Our Common Future' submitted to the United Nations General Assembly in 1987.¹⁴³

At the heart of the Report 'Our Common Future'¹⁴⁴ is the concept of sustainable development, that is, development that 'meets the needs of the present without compromising the ability of future generations to meet their own needs'. It is emphasized that 'the concept of sustainable development does imply limits – not absolute limits but limitations imposed by the present state of technology and social organization on environmental resources and by the ability of the biosphere to absorb the effects of human activities'.¹⁴⁵ It is further indicated that 'sustainable global development requires that those who are more affluent adopt lifestyles within the planet's ecological means', and that 'sustainable development can only be pursued if population size and growth are in harmony with the changing productive potential of the ecosystem'.¹⁴⁶

Analyzing the Report 'Our Common Future', V.I. Danilov-Danil'jan, K.S. Losev and I.E. Rejf emphasize that its authors, without using the word 'crisis', actually described the biosphere as a crisis, and the demographic situation on the planet was outlined in the same way. However, recognizing the need for certain restrictions in the exploitation of natural resources, they considered these restrictions not absolute but relative, i.e. due to the level of technological development

¹⁴³ MM Brinchuk, 'Konceptsiya ustojchivogo razvitiya: potrebnosti v sovershenstvovanii' (2015) 1(31) Astrahanskij vestnik jekologicheskogo obrazovanija 6.

¹⁴⁴ Report of the World Commission on Environment and Development: Our Common Future (1987)
<<https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf>> accessed 28 January 2024.

¹⁴⁵ *ibid* para 27.

¹⁴⁶ *ibid* para 29.

and existing social relations. And both, in their view, 'can be taken under control and improved, which will open the way to a new era of economic growth'. Scientists write that, not to mention the doubtfulness of such a postulate, the process of extinction of natural ecosystems was not properly assessed in the Report, and biota was actually equated to an economic resource, although it has 'ethical, aesthetic and cultural value'.¹⁴⁷ Of course, the above remark is justified, especially since by the time the Report was published, the dependence of human existence on the conservation and restoration of natural ecosystems had been repeatedly confirmed at the international level.

It is fair to say, and mentioned scientists also pay attention to it, that in July 1991 under the editorship of R. Goodland, H. Daly and S. El Serafy the book 'Environmentally Sustainable Economic Development: Building on Brundtland'¹⁴⁸ was published, where it is recognized that the economic subsystem of human is part of the global ecosystem and depends on it. In this book, it was noted that the global ecosystem is the source of all material inputs feeding the economic subsystem, and is the sink for all its waste. The global ecosystem's source and sink functions have limited capacity to support the economic subsystem. The imperative, therefore, is to maintain the size of the global economy to within the capacity of the ecosystem to sustain it. The global ecosystem, which is the source of all the resources needed for the economic subsystem, is finite and has limited regenerative and assimilative capacities. When the economic subsystem was small relative to the global ecosystem, then the sources and sinks were large, and limits were irrelevant. Leading thinkers have shown for years that the world is no longer 'empty', the economic subsystem is large relative to the biosphere, and the capacities of the biosphere's sources and sinks are being stressed.

The concept of sustainable development has undoubtedly influenced the further legal regulation of biodiversity conservation. Taking an opportunity, it should be said that in September 1989 the World Resources Institute, together with IUCN and UNEP, led an unprecedented three-year initiative to develop a program to prevent the destruction of biological diversity. An International Coordinating

¹⁴⁷ Danilov-Danil'jan/Losev/Rejf (n. 21).

¹⁴⁸ RJA Goodland, HE Daly and S El Serafy, *Environmentally Sustainable Economic Development: Building on Brundtland* (World Bank, Sector Policy and Research Staff, Environment Department 1991) 85.

Group was created and partners from organizations around the world were involved. The result of this work was the publication in 1992 of the ‘Global Biodiversity Strategy: Guidelines for Action to Save, Study, and Use Earth’s Biotic Wealth Sustainably and Equitably’,¹⁴⁹ which contains 85 Actions for the conservation of biodiversity at the national, international and local levels, and which was crucial to the further development and adoption of the CBD. A significant number of issues in the Strategy relate to the dependence of human life and well-being on the functioning of natural ecosystems and the need to reconcile human actions with the capabilities of nature. It is pointed out that all life on Earth is part of one great, interdependent system. It interacts with, and depends on, the non-living components of the planet: atmosphere, oceans, freshwaters, rocks, and soils. Humanity depends totally on this community of life – this biosphere – of which we are an integral part. Unless we protect the structure, functions, and diversity of the world’s natural systems – on which our species and all others depend – development will undermine itself and fail.¹⁵⁰

Thus, both the Report of the Brundtland Commission and the ‘Environmentally Sustainable Economic Development: Building on Brundtland’ laid on the desk as working documents for the UNCED.¹⁵¹ In addition to the CBD, at the UNCED the Declaration on Environment and Development¹⁵² (Rio Declaration), which contains 27 principles, Agenda 21,¹⁵³ the Forest Principles¹⁵⁴ were adopted, while the United Nations Framework Convention on Climate Change¹⁵⁵ (UNFCCC) was opened for signature.

The Rio Declaration refers to the integrated and integrated nature of the Earth, our home, as well as states that the goal of the Conference is establishing a new and equitable global partnership

¹⁴⁹ Global Biodiversity Strategy: Guidelines for Action to Save, Study and Use Earth’s Biotic Wealth Sustainably and Equitably (1992) <http://pdf.wri.org/globalbiodiversitystrategy_bw.pdf> accessed 28 January 2024.

¹⁵⁰ *ibid* foreword.

¹⁵¹ Danilov-Danil’jan/Losev/Rejff (n. 21).

¹⁵² Rio Declaration on Environment and Development (1992) UN Doc. A/CONF.151/26 (Vol. I) 31 ILM 874 (Rio Declaration).

¹⁵³ Agenda 21 (1992) UN Doc. A/CONF.151/26 (Vol. I-III).

¹⁵⁴ Non-Legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests (1992) UN Doc. A/CONF.151/26 (Vol. III).

¹⁵⁵ United Nations Framework Convention on Climate Change (adopted 9 May 1992, entered into force 21 March 1994) 1771 UNTS 107 (UNFCCC).

through the creation of new levels of cooperation among States, key sectors of societies and people.¹⁵⁶ Such cooperation should be in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem.¹⁵⁷ Describing the importance of this Declaration in terms of ecosystem management, scientists argue that in it 'States recognized the ecosystem approach as the basis for ecosystem development'.^{158 159}

Agenda 21 begins with the words that humanity stands at a defining moment in history, confronting with different problems including the continuing deterioration of the ecosystems on which we depend for our well-being. However, integration of environment and development concerns and greater attention to them will lead to the fulfillment of basic needs, improved living standards for all, better protected and managed ecosystems and a safer, more prosperous future.¹⁶⁰ Agenda 21 consists of 4 interlinked sections, while section II contains chapters (9–22) on the conservation of natural ecosystems. For example, chapter 10 'Integrated approach to the planning and management of land resources' notes the imperfection of the resource approach to understanding land. It is stated that land is normally defined as a physical entity in terms of its topography and spatial nature; a broader integrative view also includes natural resources: the soils, minerals, water and biota that the land comprises. These components are organized in ecosystems which provide a variety of services essential to the maintenance of the integrity of life-support systems and the productive capacity of the environment. If, in the future, human requirements are to be met in sustainable manner, it is now essential to resolve these conflicts and move towards more effective and efficient use of land and its natural resources. Integrated physical and land-use planning and management is an eminently practical way to achieve this.

The ecosystem approach was also endorsed by chapter 18 'Protection of the quality and supply of freshwater resources: application of integrated approaches to the development, management and use of water resources' of section II, according to which the general objective is to make certain that adequate supplies of water of good quality are

¹⁵⁶ Rio Declaration (n. 152) preamble.

¹⁵⁷ *ibid* principle 7.

¹⁵⁸ 'Teorija i praktika morskoj dejatel'nosti' (n. 63) 184.

¹⁵⁹ Bekjashev (n. 38) 183.

¹⁶⁰ Agenda 21 (n. 153) preamble.

maintained for the entire population of this planet, while preserving the hydrological, biological and chemical functions of ecosystems, adapting human activities within the capacity limits of nature.

The Forest Principles recognize the vital role of all types of forests in maintaining the ecological processes and balance through, *inter alia*, their role in protecting fragile ecosystems.¹⁶¹ That is why national policy formulation with respect to all types of forests should take account of the pressures and demands imposed on forest ecosystems,¹⁶² and pollutants, particularly air-borne pollutants, including those responsible for acidic deposition, that are harmful to the health of forest ecosystems at the local, national, regional and global levels should be controlled.¹⁶³

Since climate change is a major factor in impacting natural ecosystems, the need to protect them is stipulated in the UNFCCC.¹⁶⁴ It states that human activities have been substantially increasing the atmospheric concentrations of greenhouse gases, that these increases enhance the natural greenhouse effect, and that this will result on average in an additional warming of the Earth's surface and atmosphere and may adversely affect natural ecosystems and humankind.¹⁶⁵ The ultimate objective of this Convention is to achieve stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system, and which should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change.¹⁶⁶

In general, the UNCED was important not only for the establishment of the concept of sustainable development, but also for the formation of the ecosystem approach, because it was at the UNCED that the CBD was adopted, which 'is the first and only international treaty to take a holistic, ecosystem-based approach to biodiversity conservation and sustainable use'.¹⁶⁷

¹⁶¹ Forest Principles (n. 154) principle 4.

¹⁶² *ibid* principle 9.

¹⁶³ *ibid* principle 15.

¹⁶⁴ MM Brinchuk, 'Estestvennye jekologicheskie sistemy i jekologicheskoe pravo. Chast' 1' (2012) 2(20) Astrahanskij vestnik jekologicheskogo obrazovanija 10.

¹⁶⁵ UNFCCC (n. 155) preamble.

¹⁶⁶ *ibid* art 2.

¹⁶⁷ Secretariat of the Convention on Biological Diversity (2004) *The Ecosystem Approach (CBD Guidelines)*. Montreal: Secretariat of the Convention on Biological Diversity 2.

9. CONCLUDING REMARKS

The ecosystem approach, which is a strategy for the integrated management of land, water and living resources that promotes equitable conservation and sustainable use, is most consistently developed today under the CBD, but numerous references to it can be found in international environmental agreements adopted much earlier.

On the grounds of thorough research of such agreements and scientists' views it becomes apparent that before the adoption of the CBD the issues of protection and conservation of natural ecosystems and implementation of the ecosystem approach had already received wide support at the international level. Despite the fact that some of the analyzed agreements were declarative (Stockholm Declaration 1972, WCN 1982, Rio Declaration 1992, etc.) or did not come into force (ASEAN Convention 1985), were focused on the conservation of only individual ecosystems and their components or ecosystems in a particular regions (Convention on the Conservation of Antarctic Seals 1972, CITES 1973, Agreement on the Conservation of Polar Bears 1973, Bonn Convention 1979, Alpine Convention 1991, etc.), were completely built on an ecosystem strategy (Canberra Convention 1980) or related to this area only indirectly (UNCLOS 1982, Helsinki Convention 1992, Bucharest Convention 1992, etc.), they created the necessary base for the further formation and development of the ecosystem approach as a holistic concept in international environmental law under the CBD.

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We have environmental laws for a reason: to protect endangered biodiversity. And as a country that has one of the highest loss of species anywhere in the world, they're important.

— *Richard Di Natale* —

Environmental Justice and Globalization: Putting a Focus on Indigenous Peoples and Local Community Rights and Perspectives

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ABSTRACT

The right to participate in matters of local importance for communities as well as for Indigenous Peoples are increasingly recognized. This chapter analyses the continuous existence of deterrents to environmental justice from the perspective of social leaders who have worked in the defence of environmental and Indigenous rights in Colombia, Peru and Chile. This chapter argues that community rights and interests are relegated as a consequence of notions of development that are solely based on economic growth. This lack of a proper balance between a market-driven vision of development with local and Indigenous perspectives of development is manifested in different obstacles to effective participation and could also be explained by post-colonial dynamics. The research identifies seven particular obstacles that environmental and Indigenous rights defenders face to make their voices and perspectives be heard, namely: a total denial to binding mechanisms for participation, lack of information and transparency surrounding projects with a significant impact to local environments, unwillingness of State actors to supervise extractive industries, lack of access to environmental justice, lack of recognition by local authorities, in particular of Indigenous representatives, deception to the agreements between mining companies and the local communities as well as bureaucratic practices and judicial persecution, stigmatization and threats to the lives of environmental and Indigenous leaders.

Keywords: Right to participation; Indigenous rights; Community rights; Environmental rights; Inter-American Court of Human Rights; Neoliberalism

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1. INTRODUCTION

There is a common understanding of what the right to participation entails following international rights instruments. For instance, in General Comment 25 (57) of the Human Rights Committee of the United Nations, the Committee emphasizes on the rights to public debate/dialogue and to organize, as part of the right to participation, contained in the International Covenant on Civil and Political Rights.¹ The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)² addresses the topic of participation rights for Indigenous Peoples more specifically. Article 10 and 18 of UNDRIP acknowledges the right of Indigenous Peoples to give their free, prior and informed consent (FPIC) in case of relocation and the right to participate in decision-making matters that affect their rights.

The Inter-American Court of Human Rights has assessed its jurisprudence having conditions be met to consider that participation of Indigenous Peoples is meaningful, and, thus, Indigenous rights have been fully protected. The jurisprudence of the Inter-American Court of Human Rights has had an impact in the development of this right in the region falling under its jurisdiction. Among these developments, it is relevant to mention the case of the *Saramaka people v. Suriname*³. In this decision, the Court concluded that Indigenous peoples have the right to be consulted in a process that guarantees effective participation for the members of the community. This consultation has to follow the decision-making customs and traditions of the community and should be conducted in good faith. This implies that the process has the aim of reaching an agreement between the State and the community.

The right to participation that Indigenous Peoples have in the different environmental and social issues goes hand in hand with the realization of the right to self-determination. Among the different aspects included in the right to self-determination, it is relevant to

¹ Human Rights Committee, General Comment 25 (57), General Comments under article 40, paragraph 4, of the International Covenant on Civil and Political Rights (1996), Adopted by the Committee at its 1510th meeting, UN Doc. CCPR/C/21/Rev.1/Add.7.

² United Nations Declaration on the Rights of Indigenous Peoples (2007), <https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2018/11/UNDRIP_E_web.pdf>, accessed 30 November 2023.

³ *Saramaka People v. Suriname*, Inter-American Court of Human Rights, November 28, 2007, para. 133.

highlight the need for guarantees of cultural identity, control of natural resources and the respect to and protection of the different forms of free expression and protection of collective identity and dignity⁴. These aspects were highlighted by UNESCO Expert Conference on the Implementation of the Right of Self-Determination⁵ as a Contribution to Conflict Prevention are of a vital importance not only for Indigenous groups' existence but also to local communities directly affected by the deterioration of their living conditions.

For the former group, respect for cultural identity is essential for their preservation as a distinctive group. Indigenous Peoples share in common the impact of colonialism over their cultures connecting their past and present. As a product of a historical past of invasion, subjection and, in some cases, extermination, the Indigenous groups struggle to preserve their identity and existence as people, since they found themselves as a non-dominant group within the society⁶. The risk of disappearing because of violence or gradual assimilation remains present as a consequence of the historical conditions mentioned above as well as their present status as a minority. A case in point of this negative phenomenon in Northern Europe is the "Norwegianization" process of the Sami people. Under these policies the Norwegian government promoted the discrimination and forced assimilation of the Sami people through different measures, which included the prohibition of their languages⁷. Norway publicly apologised for the sufferings caused by these policies and its ill effects to the Sami people⁸.

The case mentioned above exemplifies the central role of cultural identity in the protection of the right to self-determination. Assimilation processes of cultural minorities equate in some cases to an attempt to cultural erasure by not recognizing the distinctiveness of a

⁴ Van Walt van Praag, M., 'The implementation of the right of self-determination as a contribution to conflict prevention' (1998), UNESCO Report of the international conference of experts held in Barcelona from 21 to 27 November 1998, Barcelona, 1999, pp. 9–22.

⁵ <<https://digitallibrary.un.org/record/354875?ln=en>>

⁶ Martínez Cobo, J., 'Study of the Problem of Discrimination against Indigenous Populations' (1986), E/CN.4/Sub.2/1986/7/Add.4, p. 379.

⁷ Kvile, R., 'Norway's indigenous people: From assimilation to recognition' (2020), Arctic Festival, <<https://arktickyfestival.cz/en/2020/09/09/norways-indigenous-people-from-assimilation-to-recognition/>>, accessed 03 December 2023.

⁸ Minority Rights Group International, 'State of the World's Minorities and Indigenous Peoples 2012- Case Study: Sami rights to culture and natural resources' (2012), p. 185.

minority group and putting barriers to the exercise of their cultural autonomy⁹. According to this reasoning, a legal provision such as imposing a language requirement to have access to certain rights, which may appear at first glance as neutral, could be discriminatory in nature. This reasoning is followed by the European Court of Human Rights in the cases concerning indirect discrimination. This human rights tribunal indicates that the general norms having disproportionately negative effects on a group of people actually breach the European Convention on Human Rights. For instance, in the verdict for *D.H. and others v. the Czech Republic*, the legal norms in question did not take into consideration the particularities and special characteristics of Roma children in the education field. This resulted into a State of racial discrimination and a violation of Article 14 of the European Convention on Human Rights.¹⁰

Unfortunately, the cases of forced assimilation and challenges to the right to self-determination could be a negative side-effect of globalization processes. For instance, this chapter discloses how, in environmental conflicts surrounding extractive projects, States have resorted to set draconian conditions to recognize groups as members of Indigenous groups. Such strategy aims to circumvent an obligation on State to respect Indigenous people's rights to self-determination and identity.

Furthermore, the 2007 UNDRIP emphasizes the importance of due respect of Indigenous customs as an integral part of the legal protections these groups should have. The Article 26 of UNDRIP acknowledges that due respect to the customs, traditions and land tenure systems of the Indigenous peoples should be an important aspect of the legal recognition of Indigenous territories. In this order of ideas, legal provisions would be insufficient to protect Indigenous people's rights if they ignore their customs and traditions even if they include mechanisms for these groups to have access to the lands they own or occupy.

The ramifications of this provision could be challenging for some States. The recognition of different customs and different legal systems based on traditions dating before colonization processes took place

⁹ Supra note 5, p. 24.

¹⁰ *D.H. and others v. The Czech Republic*, European Court of Human Rights, November 13, 2007, paras. 200-210. <<https://www.escri-net.org/caselaw/2017/case-dh-and-others-v-czech-republic-app-no-5732500-grand-chamber-final-judgment-13>>, accessed 30 November 2023.

would necessarily lead to a tacit acceptance of multinational, multi-ethnic States. This recognition would require a level of autonomy in their territories for their own institutions to regulate their own matters. This idea is, nevertheless, still contested in States in which these concepts are interpreted as the first step on a “slippery slope” towards independence or a weakening process of national sovereignty. The 2022 constitutional process in Chile can help illustrate this reaction. According to the rejected project for a new constitution of Chile, the country would have been defined as a “multinational and intercultural State” that recognized at least 11 Indigenous peoples and granted political autonomy to Indigenous Regional Autonomies.

Furthermore, the constitutional proposal recognized the authority of the Indigenous own legal systems, clarifying that they must respect the constitution, international treaties and that their decisions can be appealed to the Supreme Court¹¹. However, this concept was rejected by a meaningful group of citizens within Chilean society. According to a poll conducted before the constitutional proposal was voted, 72% of the people preferred the concept of a “multicultural society by a single nation” against the concept of a “multinational State”.¹² In this order of ideas, respect for cultural identity on its whole dimension could be wrongly interpreted in two different manners: considering it as an existential threat to national sovereignty or, on the other side of the spectrum, as a performative exercise by which these groups are granted a space to participate according to the law, but their perspectives are taken into account as a matter of form not in actual spirit.

Accordingly, the aim of this chapter is to explore the impact of participation and cultural rights as well as the right to access to environmental justice and its implications in different countries that recognize these rights for their Indigenous communities in first place and for local communities in second place. The research questions in this chapter will address the following:

¹¹ Arts. 34, 187.2, 309, 322 ‘Proposal- Political Constitution of the Republic of Chile’ (2022), <<https://chileconvencion.cl/wp-content/uploads/2022/07/Texto-Definitivo-CPR-2022-Tapas.pdf?fbclid=IwAR0GQA4GzJ907YosluQipdd2R1uRKtQTWkQikN0N66sJmib1q9oogh2qUCE/>>, accessed 03 December 2023.

¹² Cadem, ‘Plaza Pública Cadem Poll, Fifth Week of March 2022, Study 429’ (2022), <<https://cadem.cl/wp-content/uploads/2022/04/Track-PP-429-Marzo-S5-VF.pdf>>, accessed 03 December 2023.

- How does the State through its different institutions weigh different cultural perspectives of Indigenous groups? This includes respect for the uniqueness of their legal institutions and legal concepts such as the concept of property and of environmental justice, and
- How effective are the current legal provisions granting the aforementioned rights for Indigenous groups and local communities affected by projects impacting their environment and natural resources?

In the case of Indigenous peoples, historical oppression and colonialism exacerbate the negative consequences changing the environmental conditions of the places they live in. Notwithstanding, Indigenous and local communities' historical contexts are different, there are also common concerns and challenges to their existences, customs and cultural distinctiveness. The rights to live in a healthy environment, dignity, self-determination, participation, economic and cultural rights among other rights are at risk in both the cases. Namely, some of the challenges brought by globalization processes and, more specifically, the neoliberal conception of economic growth undermine these rights as it is later discussed in this chapter.

In order to answer these questions, the author interviewed members of two different NGOs in Colombia and Peru who have worked on the defence and protection of human rights for their communities. A researcher in Chile was also interviewed. The NGO "Frente de Defensa del Valle de San Lorenzo y Tambogrande" in Peru was involved in the defence of the rights of the communities in the Tambogrande area. The organization also defended the right to healthy environment, Indigenous and environmental rights in Peru. The "Colectivo Socioambiental Juvenil de Cajamarca" is a Colombian NGO, which actively participated in a local consultation in the city of Cajamarca of Colombia to oppose the continuation of mining processes taking place in their city. It continues advocating for the right to participate for Indigenous and local communities, in their region and at the national level, for the approval of a public participation act aiming to further protect such rights. Additionally, Vicente Ramdohr Arellano is a journalist and researcher; he is author of a research study on the case of the Aconcagua River in the national context of Chile, where water resources have the constitutional status of private property and how this affects the right to access to water.

The purpose of these interviews is to get a better understanding of the negotiation process between communities and the authorities, the weight of Indigenous and local rights and perspectives in administrative or judicial decisions. Furthermore, the interviewees identified current obstacles for the full realisation of environmental rights. This chapter explores the different interpretations between decision bodies and communities on the principles guiding the right to cultural identity and participation on environmental issues for indigenous communities.

2. ENVIRONMENTAL JUSTICE BETWEEN GLOBALIZATION AND THE PERSPECTIVES OF INDIGENOUS GROUPS AND LOCAL COMMUNITIES

The right to participation in a meaningful way is a complex process. The existence of meaningful participation mechanisms is a sign of stronger democratic systems. In order to assess whether participation mechanisms are effective or not, it is relevant to consider some of the factors that affect communication between the parties in contention in general. Namely, the State and other private actors should be aware and respect the cultural differences among the groups involved. Historical power dynamics have affected social legitimacy of the State institutions including the judiciary. Accordingly, the notion of Indigenous and community institutions and how they are perceived would have an impact on how the rights and legitimate interests of these groups are weighed against other interests in contention.

It is pertinent to take into account the concept of globalization put forward by Manfred Steger.¹³ In his book *Globalization: A Very Short Introduction*, Steger identifies some distinctive characteristics of globalization as a set of social processes. In short, globalization creates an environment allowing certain activities to overcome traditional political, economic, cultural and geographical boundaries. It should also be noted that, as a product of the acceleration of social exchanges and activities, what is considered “local” and “global” are interrelated. Notwithstanding the latter statement, some of the characteristics mentioned above would conflict with the purpose of putting a focus to Indigenous perspectives. For instance, the opportunities to participate

¹³ Steger, Manfred B., ‘Globalization: A Very Short Introduction’ (2020), 5th edn, Very Short Introductions (Oxford, 2020; online edn, Oxford Academic, 28 May 2020), pp. 9-12.

in environmental decisions are most likely limited to the boundaries of domestic political systems. In this order of ideas, the defence of communities, in particular Indigenous groups, could be characterized as a resistance from “the local” and the “traditional” against the “global” interests in these exchanges. This consideration would not necessarily mean that such interests are irreconcilable. However, the mechanisms in place and how they are implemented illustrate whether the different points of views are properly pondered and can shape the way an extractive project is executed or, on the opposite, if these mechanisms are ignored or circumvented at any stage of the process.

Secondly, the concept of neoliberalism is closely related to globalization. The neoliberalism is an economic model that advocates privatization, market liberalization and deregulation of the markets.¹⁴ It is particularly these aspects that reduce the role of the State to a mere arbitrator, that make some authors question the compatibility between neoliberal policies with democracy.¹⁵ According to Brown (2003), democratic institutions and values are at odds with economic competitiveness in particular or a neoliberal system in general since the latter would subject rights to a cost-benefit analysis. Hence, a country can be nominally democratic and abide by democratic standards while having a neoliberal economic model. However, there will eventually be a conflict between the principles and values encompassed by these two systems.

For instance, the conflicting interests between mining companies and Sámi communities in northern Finland can illustrate the difficulty to reconcile economic interests of the State and the stakeholders including Indigenous groups and local communities. According to the Geological Survey of Finland, there are mineral deposits of nickel, copper, vanadium and cobalt, which are needed for the production of vehicles. However, their extraction is perceived as a threat to the traditions and way of living of the Sámi Indigenous peoples. In the words of Sámi campaigner, Minna Näkkäläjärvi, “It’s not possible for reindeer husbandry and mining to co-exist in the same area (...). This isn’t only about a job, reindeer is our culture, our lifestyle (...). I don’t know which metals they found, but I don’t think the world will be a happier

¹⁴ Duggan, L., ‘Twilight of Inequality? Neoliberalism, Cultural Politics, and the Attack on Democracy’ (2003), Beacon Press, Boston.

¹⁵ Brown, W., ‘Neo-liberalism and the End of Liberal Democracy’ (2003) 7(1) *Theory & Event* 46-48, <<https://doi.org/10.1353/tae.2003.0020>>

place without our Sámi reindeer herding culture”.¹⁶ Conversely, the extraction of the said minerals is of vital importance for the production of electric vehicles, which represents an ever-growing market that has been deemed crucial towards the fight against climate change.¹⁷

In this scenario, it would be ideal that the economic interests of the State and the companies take into consideration the voices of dissent in their development projects attending to the principles of sustainable development. However, in a scenario guided by a neoliberal agenda, economic growth would prevail over other legitimate interests from the most affected groups by decisions directed to their local environments and community lives. This conclusion is shared by Vicente Ramdohr Arellano in his analysis of the Aconcagua River case study.¹⁸ According to the 1980 Political Constitution of the Republic of Chile approved under a military dictatorship that remains fully in force, water is considered a commodity. One of the implications of this legal status is that access to water as a human right is limited by economic interests, and businesses are only obliged to grant access to the bare minimum of water a person needs to be alive. Anything beyond this minimum level of water, including access to water for showering or gardening, is not considered a basic necessity and, thus, is not legally guaranteed. All such things make people dependent on market forces often controlling the prices. Moreover, there are private companies operating as private monopolies in charge of water sanitation for human consumption. These companies receive water for free from the State and are allowed to sell it to the people who want to have access to water.¹⁹ As a consequence, water is treated as a commodity in the market.

Evidently, in Chile a company can take ownership of the water supply of a valley as long as it can afford to pay for it, and provides

¹⁶ Nilsen, T., ‘Miners hunting for metals to battery cars threaten Sámi reindeer herders’ homeland’ (2020), The Barents Observer, <<https://thebarentsobserver.com/en/node/7082/>>, accessed 03 December 2023.

¹⁷ International Energy Agency, ‘By 2030 EVs represent more than 60% of vehicles sold globally, and require an adequate surge in chargers installed in buildings’ (2022), IEA, Paris <<https://www.iea.org/reports/by-2030-evs-represent-more-than-60-of-vehicles-sold-globally-and-require-an-adequate-surge-in-chargers-installed-in-buildings/>>, accessed 03 December, 2023.

¹⁸ Ramdohr Arellano, Vicente, personal communication, December 14, 2022.

¹⁹ Larraín, S., ‘El agua en Chile: entre los derechos humanos y las reglas del mercado’ (2006) 5 (14) Polis Journal Bolivariana University.

people the required amount of water for direct consumption²⁰ One of the consequences of subjecting the right to access to water to economic interests and the forces of the market is that the rights of communities to participate and be taken into consideration in decisions that affect their own existences, well-being and any potential affectation to their environments depends on the goodwill of the companies who own water resources. Furthermore, in this case the link between water and the environment is not considered. In the words of Ramdohr Arellano, “Trees are fed by the river because there is no one that needs this water to produce something. And, when someone needs to use this water, these trees are going to disappear. Since water is life, all these places will live until a business needs to use their water. There is a river nearby called Putaendo where a minimum quantity of water is allowed to flow around it. However, this was a conscious decision of the owners of the river to prevent that the ecosystem dies. Notwithstanding this collective decision from these people, they could perfectly not allow it and let the ecosystem die because regulations are minimal and they are not often complied”.²¹

In a similar fashion, Juan Edwin Alejandro Berrospi, who is the coordinator of the technical, environmental team of Muqui, points that economic interests become a dominating force over the rights of local and indigenous communities and their interests in Peru. Muqui is a network in Peru that worked in the landmark case of Tambogrande. In 1996, Canadian mining company Manhattan Minerals wanted to start exploration activities in Tambogrande (Peru). The local community voiced their dissent against this project that was take place in a fertile valley to cultivate lemons and mangoes of export quality. The process, however, was not peaceful. Environmental activists and social leaders were persecuted and even killed. For instance, during the debates of the project, one of the specialists who opposed this project, agricultural engineer Godofredo García Baca, was assassinated after he raised the question of the negative effects this project would have on the quality of water, air, lands and the lives of the local population.²² Unfortunately,

²⁰ Cantillana, R., ‘Water research in Chile: review and critical perspectives’ (2020), In: *Tecnología y ciencias del agua* 11(6), Instituto Mexicano de tecnologías del agua, 81-126, pp. 96- 104.

²¹ Supra n.18

²² Peña Herrera, N., ‘Godofredo García Baca: 20 años después, su legado sigue vivo’ (2021), <<https://www.cutivalu.pe/godofredo-garcia-baca-20-anos-despues-su-legado-sigue-vivo/>>, accessed 03 December 2023.

the assassination of environmental activists or the use of intimidation against them is not uncommon in the region. According to the 2021 report on environmental defenders worldwide by Global Witness, at least 33 land and environmental defenders had been killed including Indigenous leaders in Colombia.²³

In 2002, the community of Tambogrande organized a citizen consultation over the viability of the mining project. As a result, more than 95% of the population voted against this project. The Tambogrande case is considered one of the most successful cases of participation rights as a means to oppose mining projects which may have negative effects on the local populations. However, environmental litigation is a never-ending process. According to Juan Edwin Alejandro Berrospi, environmental organizations have been met with indifference when they have engaged with multinational companies. The right to life and the effects on the living environment of local communities are ignored.²⁴ As a result of this apathy, environmental activists in Peru have shifted their strategy to international forums including the Inter-American Commission of Human Rights, the United Nations and the European Union. The aim of this international strategy is to denounce the abuses committed by transnational companies. In the latter case, Juan Edwin Alejandro Berrospi highlighted the importance of adopting the EU Directive on corporate sustainability due diligence²⁵.

The proposed directive aims for transnational companies to comply with basic human rights in their operations. Companies will be required to identify, prevent, end, or mitigate the impact of their activities on human and environmental rights. This Directive is, therefore, consistent with the green transition goals set by the European Union.²⁶ Bearing in mind globalization processes in terms of environmental responsibility, the approval of a Directive on corporate sustainability due diligence would be a step in the right direction to protect the rights of the communities most affected by mining and other

²³ Global Witness, 'Decade of defiance. Ten years of reporting land and environmental activism worldwide' (2022), September 2022, p. 13.

²⁴ Berrospi, Juan Edwin Alejandro personal communication, September 22, 2022

²⁵ <https://commission.europa.eu/business-economy-euro/doing-business-eu/corporate-sustainability-due-diligence_en>

²⁶ European Commission, 'Just and sustainable economy: Commission lays down rules for companies to respect human rights and environment in global value chains' (2022), <https://ec.europa.eu/commission/presscorner/detail/en/ip_22_1145/>, accessed 03 December 2023.

activities with a potential negative impact on the environment and their rights. According to Berrospi “it is necessary to understand which buy raw materials that go from Peru to Europe (...). For instance, there are German companies buying gold and copper and it is important to know which are these companies, to whom are they buying raw materials and under which conditions they operate”.

In the one hand it has been observed in both cases the unwillingness of the State to supervise if mining companies, as well as other industries that require significant amounts of water, are overusing water resources.²⁷ This would include water resources that were supposed to be used to fill water reservoirs that could have been used instead for avocado cultivation in the case of Chile.²⁸ On the other hand, citizens have had to supply this lack of diligence from the State to exercise public oversight on these companies via litigation or the organization of local consultations. In both the cases, the pervasive influence of a neoliberal logic in the interpretation of human rights is observed.²⁹ From the perspective of procedural justice, the Chilean constitutional and legal framework leaves communities the most unprotected in terms of access to environmental justice. For instance, judicial defence of the right to access to water are often performed from the perspective of contractual law in order to have higher chances of having a positive decision. In any case, private companies have a strong degree of protection under domestic law.³⁰

McCauley and Heffron identified three dominant dimensions of environmental justice: procedural, distributional and restorative justice.³¹ According to this theoretical framework, the cases of Colombia and Peru presented in this chapter reflect a situation in which environmental procedural justice is better satisfied compared to Chile.

²⁷ La Oroya Community v. Peru merits report, Inter-American Commission on Human Rights, September 20, 2021.

²⁸ Voller, L., ‘Avocados and stolen water’ (2017), Danwatch, <<https://old.danwatch.dk/en/undersogelse/avocados-and-stolen-water/>>, accessed 03 December 2023.

²⁹ Libuy Loyola, Carlos Alberto, ‘Acceso a la justicia ambiental en Chile, Observatorio sobre tutela judicial efectiva en la protección del medio ambiente’ (2020), Universidad del Desarrollo, Santiago, 2020, pp. 43-45, 56-52.

³⁰ Alemparte, B., ‘Towards a theory of neoliberal constitutionalism: Addressing Chile’s first constitution-making laboratory’ (2022) 11 (1) Global Constitutionalism 83-109.

³¹ McCauley and Heffron, Just Transition: Integrating climate, energy and environmental justice’ (2018) 119 (1-7) Energy Policy 1-4.

For instance, their judicial and legal systems include spaces for communities to organize and find a legal remedy to any perceived violation to their environmental rights.³² Notwithstanding this, it must be reiterated that the State cases of Colombia and Peru analysed in this chapter reflect other serious threats to access to environmental justice based on persecution against environmental activists, social leaders and Indigenous peoples. Paradoxically, threats to the lives and well-being of Indigenous peoples and environmental activists in these two countries become one of the most significant deterrents for the affected communities to find redress for any environmental harm committed to the individuals identified as victims (restorative justice) and to address inequalities caused by environmental harm (distributional justice) in spite of the existing mechanisms to have access to justice. Consequently, these threats need to be further discussed in a separate sub-chapter as they would represent a total denial of the right to access to environmental justice as well as the rights of Indigenous peoples and communities to participate.

Notwithstanding that, environmental conflicts over the use of land are necessarily connected to a historical and economical background; this state of affairs would exceed the ongoing discussion in the current sub-chapter which is mainly based in the link between globalization processes as an impediment to the full realization of environmental justice. In any case, McCauley and Heffron identify neoliberalism in a broader sense as a deterrent for the realization of the right to access to environmental justice. In the words of these authors, neoliberalism “has significantly added to societal inequality” and its instance on the neoclassical school of thought “dominates economic policy-making and this echoes with research done in the fossil fuel community”.³³

Are neoliberal economic models necessary at odds with the realization of the rights of Indigenous and local communities? There is a second interpretation of the role of neoliberalism in the disputes between the most directly affected communities and the economic interests of the States and companies willing to exploit natural resources. According to Lindroth, there is an argument from a neoliberal point of view to grant and protect to a certain extent the environmental and participatory rights. The logic behind this statement is that the neoliberalism is pervaded by

³² Ibid, p. 4.

³³ Supra 29, p. 2.

cost-effectiveness rational.³⁴ In this order of ideas, granting autonomy to Indigenous groups and participation rights to the affected local communities is part of this cost-effectiveness calculation that would outweigh the costs of a state of permanent environmental conflicts.³⁵ Accordingly, neoliberal governance requires guaranteeing a degree of protection for environmental and community rights as well as Indigenous rights in order to be functional. Conversely, the aforementioned examples that outrightly deny the possibility for peoples to demand a protection to the authorities to have access to natural resources and to protect their local environment would be detrimental to the system as a whole in the long-term.

Notwithstanding the latter, participation under a neoliberal system would be attached to certain limitations. In particular, the recognition of rights following the neoliberal market logic improving the lives of Indigenous peoples aims to limit more radical forms of activism. This dilemma has been present in discussions around the effectiveness of the different strategies to litigate and reclaim rights in Indigenous circles. For instance, Lightfoot acknowledges that, in order to litigate for their rights at the national and international level, Indigenous movements have to adopt the norms, jargon and modes of the institutions of colonizer powers. Effective litigation requires for these groups to acknowledge the scope of interpretation of the rights in contention in particular property rights, the right to access to water and environmental rights which are based in the western legal tradition and differ in many occasions with their own worldview and interpretation of these rights. However, the author characterizes it as falling under a “pessimistic trap” with the thinking that following this strategy is futile or counter-productive.³⁶ At the same time, offering remedy and economic compensation as well as limited access to land forces Indigenous and environmental movements to adapt to the current extractive system rather than to change it.³⁷ Following this logic, environmental justice becomes a post-colonial tactic for States to

³⁴ Lindroth, M., ‘Indigenous rights as tactics of neoliberal governance: practices of expertise in the United Nations’ (2014), In: *Social & Legal Studies* 23 (3), 341-360, p. 342.

³⁵ *Ibid.*, p. 351.

³⁶ Lightfoot, S., ‘The Pessimistic Traps of Indigenous Resurgence’ (2020), In: *Pessimism in International Relations*, Palgrave Studies in International Relations, pp. 165-167.

³⁷ *Supra* 32, p.353.

exercise power and control by offering a limited, economic efficient version of environmental, participation and Indigenous rights.

3. PUTTING A FOCUS ON INDIGENOUS PEOPLES AND COMMUNITY PERSPECTIVES

In the Inter-American System of Human Rights, Article 4 of the American Convention on Human Rights focuses on the right to life and the restriction to the death penalty.³⁸ However, the interpretation of Article 4 of the Convention has evolved in time with the decisions of the Inter-American Court of Human Rights. Particularly, the Court has interpreted Article 4 together with the obligation from States to respect and guarantee the rights under the Convention (Article 1.1 of the American Convention on Human Rights) and the prohibition to restrict the rights under the Convention to a greater extent than is provided therein (Article 29 of the American Convention on Human Rights) to develop the concept of the right to a Dignified Life or “Vida Digna”.

As part of this jurisprudential development, the Inter-American Court of Human Rights has pointed out what conditions need to be met to protect the right to a dignified life. This has a significant importance for groups in vulnerable situations. According to the Court’s previous findings in the *Yakye Axa* case, in order to meet the minimum requirements to protect the right to life under dignified conditions, it is imperative that conditions “impeding or obstructing access to a decent existence” are not generated.³⁹ Further, in the *Xákmok Kásek* case, the Court concluded that State assistance could not be sufficient to overcome a situation of vulnerability. Conversely, the lack of possibilities for an Indigenous community for self-sustaining in line with their traditions affects the right to life under dignified conditions.⁴⁰

In order to protect the right of Indigenous people to life under dignified conditions, it is imperative to listen to their needs. However, the first obstacle the communities face to be listened is the lack of recognition by the state as members of their own communities. The reasons behind the exclusion of Indigenous and local communities’

³⁸ Art. 4 American Convention on Human Rights (1969), Organization of American States.

³⁹ *Yakye Axa Indigenous Community v. Paraguay*, Inter-American Court of Human Rights, June 17, 2005, para. 161.

⁴⁰ *Xákmok Kásek Indigenous Community v. Paraguay*, Inter-American Court of Human Rights, August 20, 2010, paras. 215-216.

perspectives in environmental decision-making processes range from bureaucratic obstacles imposed to be recognised and have access to information, to other forms of deception to the implementation of the agreements reached after consultations have taken place and to persecution and threats to the lives of Indigenous and environmental activists in the worse cases. In summary, all the reasons expressed above could be explained as expressions of post-colonial dynamics that limit the possibility to put a focus on Indigenous peoples and their community perspectives.

For instance, Indigenous peoples have a right to be consulted under Article 19 of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) before adopting measures that may affect them. In addition to this, Article 32 of the UNDRIP mentions the imperative of holding consultations before the approval of projects that may affect their territories, in particular in cases of mining or the use of water and other resources. Although these provisions may seem clear at first glance, the first question that can arise is: whom should the authorities consult among native and Indigenous communities? However, who is a member of an Indigenous community? The way this question is answered could be guided by a post-colonial rational when authorities decide unilaterally who members or groups are legitimate interlocutors. These incidents have been noted in Peru. According to Juan Edwin Berrospi from Red Muqui, there are four main conditions in order to be recognised as a member of an Indigenous community at the domestic level: to be a descendant from Indigenous people, to use an Indigenous language as a mother tongue, to maintain their practices and traditions, and to be part of the community. However, the way these conditions have been interpreted has been arbitrary. Namely, if a person perceives oneself as Indigenous but speaks Spanish or makes use of technological devices, his/her Indigenous identity could be put into question and, therefore, cannot be consulted. According to this interpretation that has been invoked “when we examine peasant communities in which mining projects are taking place, there would not be any Indigenous communities”.⁴¹

In addition to this, access to information for Indigenous people or environmental activists is often restricted in detriment to the rights of the people who use this information to be consulted, to participate or to

⁴¹ Ibid, *Supra* note 23.

protest. In 2017, the Inter-American Court of Human Rights issued an Advisory Opinion on the State's obligations related to the environment in which it mentions the right to access to information. The Court says that information related to projects that may have an environmental impact is of public interest and it affects the full realization of other fundamental rights. Furthermore, States should be "actively transparent", which means that States should provide necessary, exhaustive and accessible information to the people to exercise other rights in particular when this information may have an impact on their rights to life, personal safety and health.⁴²

The Inter-American Court of Human Rights referred to the connection between the right to access to information and environmental rights in *Claude-Reyes et al v. Chile*. This case centres on the refusal from the State to grant access to information related to a project for the exploitation of the C ndor River. In this case, the Court reasoned that in order to fully enjoy the right to freedom of expression and have the possibility to carry out social control of public administration it was fundamental to have access to the information requested. As a result, restrictions to access to information should be fully justified and complied with the American Convention on Human Rights.⁴³ It should be emphasized that in this case, the requested information referred among other things to the environmental impact of the said project to the environment in general and in particular to Indigenous forests in the extreme south of Chile.

Limited access to information decreases the possibilities to participate in consultation processes. It has been reported that State authorities do not properly notify communities and concerned parties about the mechanisms to participate in the event of a project affecting the environment. For instance, events are not properly publicized through means of appropriate communication that are easily accessible for the communities. "Often consultations are imposed (...) when projects are needed to be approved and the communities learn about them, usually the legal period to express observations is already expired."⁴⁴ Another shape to limit these rights takes place when the granting of mining rights

⁴² Inter-American Court of Human Rights, Advisory Opinion OC-23/17, November 15, 2017, paras. 214, 217, 221.

⁴³ *Claude-Reyes et al. v. Chile*, Inter-American Court of Human Rights, September 19, 2006, paras. 99-102.

⁴⁴ *Ibid*, *Supra* note 23.

is accelerated through the simplification of these processes, making it harder for communities to be informed since legal timeframes to participate and object to the granting of mining rights are reduced. This was the situation that took place in Colombia from 2000 to 2018 as a consequence of the approval of a new mining code in the country that allowed the government to grant mining rights via an “express proceeding”.⁴⁵ In this case, the acceleration of the proceedings weakened the participation rights as well as the power of supervisory authorities to examine whether environmental regulations were complied with or not. This is of particular importance for mining projects that could have an impact on forestry reserves and conservation areas.⁴⁶

Furthermore, another scenario that could become a denial to the right to access to information and participation takes place when the provided information or the agreed conditions attached to social licenses to operate are subsequently changed. As a consequence of these amendments to projects, if the changes are significant and change the conditions of the future activities, participation and consent becomes ineffective. In these cases, when communities were not previously consulted (in particular when changes increase the environmental impact of extractive projects), mechanisms for participation and to have access to information become a mere formality rather than legitimate instruments to protect community rights. These tactics are perceived by the community leaders as a form of deception because they put communities and environmental activists in a weak bargaining position. According to them, the impact on fragile ecosystems may be irreparable before a legal remedy may be achievable.

In addition to this, it has been reported as a common practice that officials in charge of approving amendments to the instruments for environmental management are offered jobs at the private sector for the companies that benefited from these amendments, a phenomenon known as “revolving doors”.⁴⁷ Notwithstanding that, the existence of “revolving doors” between the public and private sector could be disputed, the perception that authorities are co-opted by the interests of transnational extractive parties and other private actors affect the legitimacy of institutional channels to discuss the concerns of the

⁴⁵ Iván Cepeda et al. v. Mines and Energy Ministry and National Mining Agency, Council of State, Bogota, August 04, 2022.

⁴⁶ Rojas, Yefferson personal communication, December 04, 2022.

⁴⁷ Ibid, *Supra* note 23.

communities at the receiving end of the environmental impact of the said projects. Furthermore, judicial decisions are not exempt of social censure in contested decisions when they limited the rights of communities to voice their opposition and eventually to veto the projects affecting their local environments. For instance, in a 2019 decision, the Constitutional Court of Colombia concluded that, notwithstanding that communities have a right to participate and be consulted in matters that directly affect them, local referendums (“Consultas populares”) could not be organized on the topic of mining. The reasoning behind this decision was that the central government has the exclusive competence to decide on the extraction of non-renewable resources.⁴⁸ In interview with environmental leader Yefferson Rojas, he stressed that, as a result of this decision, the perception from social and environmental leaders working in the field is that the judicial bodies are giving more relevance to multinational interests. Thus, there would not be guarantees for the communities to decide. Consequently, his environmental organization together with the community has proposed to “create more policies to develop environmental democracy”. This would translate in the passing of a new law that should acknowledge to communities their right to freely decide in their territories without external influences in particular from multinationals on these matters.⁴⁹

Finally, one of the reasons behind the lack of representation in spite of legal recognition to participation mechanisms to Indigenous communities and environmental leaders is the existence of threats to their lives. As it was mentioned above, environmental leaders are still a group at risk in Latin-America. According to the 2022 Global Analysis report by Front Line Defenders, in addition to the risk of being criminalized for their activities, environmental rights defenders and activists in the Americas “were exposed to persistent and alarming levels of violence by both State and non-state actors, including widespread killings”. The report details different instances of violent threats and violent actions against environmental leaders, Indigenous groups and human rights defenders in the Americas. According to the report, in 2022 Colombia became once again the country in the region with the highest number of

⁴⁸ Sanabria-Rangel, Á., ‘Participation Rights vs. State and Property Rights in decisions affecting the environment: the Colombian case’ (2020), In: *Revista de la Facultad de Derecho de México* LXX, 70 (276-1) (January-April 2020), pp. 5-34, Faculty of Law, National Autonomous University of Mexico, pp.58-59.

⁴⁹ *Ibid*, *Supra* n.44.

lethal attacks against human rights defenders.⁵⁰ Furthermore, in Colombia, environmental leaders are often stigmatized for their work. This practice does not only weaken participation processes but it additionally creates the perception that State and private actors do not give enough guarantees to Indigenous and social leaders to be heard. For instance, according to Yefferson Rojas, there was an instance in Cajamarca in which one of the representatives referred to the environmental leaders participating in a discussion table as the “guerrilla group from Cajamarca” in a private chat. In the context of a country that experienced an internal armed conflict of more than five decades, associating environmental leaders to guerrilla members is not only defamatory and demeaning but it is also a form of stigmatization. In this reported case, the chat was leaked by the local press. In the words of Rojas “after this day we concluded we had no guarantees to meet with this multinational that not only disrespected us but put our lives at risk”.⁵¹

“I think that the chances of dying (as a consequence of being an environmental leader), although they are not as high as in Colombia, are still a real possibility”, reflected Vicente Ramdohr Arellano on the threats to environmental activists in Chile. Notwithstanding that, the number of deaths of environmental and social leaders is lower, they are still reported. In 2021, 49 organizations and environmental leaders signed a joined statement denouncing “intimidation, menaces and death threats” against environmental leaders in Chile.⁵² In addition to this, litigation is used as a deterrent against environmental activists and leaders as well as researchers who ask for information on the projects which would affect sensitive economic interests. In this respect, it must be highlighted that judicial persecution and the open or veil threats of strategic lawsuit against public participation and/or the use of the State apparatus to sanction opposing groups to extractive projects are forms of judicial persecution. In a report on the criminalization of human rights defenders in the Americas, the Inter-American Commission on

⁵⁰ Front Line Defenders, ‘Global Analysis 2022’ (2022), April 04, 2023, pp. 34-44, <<https://www.frontlinedefenders.org/en/resource-publication/global-analysis-2022/>>, accessed 03 December 2023.

⁵¹ Ibid, *Supra* n.44.

⁵² Fundación Terram, ‘organizaciones medioambientales manifiestan su preocupación por los amedrantamientos y amenazas a líderes y profesionales que velan por el resguardo de los ecosistemas’ (2021), April 05, 2021, <<https://www.terram.cl/2021/04/organizaciones-medioambientales-manifiestan-su-preocupacion-por-los-amedrantamientos-y-amenazas-a-lideres-y-profesionales-que-velan-por-el-resguardo-de-los-ecosistemas/>> accessed 03 December 2023.

Human Rights states that it has observed in several countries in the Americas “the improper use of criminal law” against human rights defenders after they had been subject of public accusations for allegedly having committed a crime.⁵³ It must be highlighted that in a democratic society, the use of criminal measures should be the last resort because of their restrictive nature and their potential chilling effect on free speech.

4. CONCLUDING REMARKS

Notwithstanding the existence of legally binding mechanisms for participation in two of the case studies brought in this chapter, it was a common feature the existence of significant obstacles to this right for both Indigenous groups and local communities. Projected economic profit and the need to defend private interests of investors are two factors that are privileged over community rights. This could explain the unwillingness to engage with local and Indigenous perspectives regarding the future of extractive projects. Further, these negative attitudes by different authorities could be explained by a neoliberal vision of economic development.

The respondents interviewed for this chapter expressed that environmental leaders and researchers face significant problems to obtain information from projects that could have an impact on the future of local environments and their natural resources. Other obstacles to the realization of the right to participation and for Indigenous and local voices to be included are a lack of channels of communication and recognition of Indigenous and social leaders as legitimate actors by the State representatives, the establishment of limited participation mechanisms, lack of transparency, deception by the State and private actors and, in the worse cases, judicial persecution and threats to the lives of environmental leaders. Paradoxically, a lack of accountability from extractive companies and State actors and the unwillingness to engage with communities contribute to societal inequality and in the long-term can cause environmental conflicts and a lack of legitimacy to the socio-economic system of governance.

⁵³ Inter-American Commission of Human Rights, ‘Criminalización de la labor de las defensoras y los defensores de derechos humanos’ (2015), Doc. 49/15, December 31, 2015, pp. 74-77.

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Ecosystem Approach in Dealing with Invasive Alien Species: International, European and Ukrainian Experience of Legal Regulation

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ABSTRACT

This chapter is devoted to highlighting the international, European and Ukrainian experience encompassing legal regulation dealing with the invasive alien species that represent the second largest threat to global biodiversity, right after habitat destruction. It has been proved that, at the international level, primarily within the framework of the Convention on Biological Diversity, the ecosystem approach is recognized as the basis in dealing with such species. It is also gradually being reflected in the regulatory framework of the European Union. The provisions of the EU on nature protection and the relevant regulations of the European Commission define invasive species, which are prohibited from activities that may contribute to their dissemination in the environment. In the Ukrainian environmental law, a positive trend towards the recognition of the ecosystem approach in dealing with invasive alien species is observed primarily among national strategic documents, while in current national environmental legislation, these issues are regulated fragmentarily and inconsistently, which indicates the need for its early reform.

Keywords: Environmental law; Biological diversity; Invasive alien species; Ecosystem; Ecosystem approach

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1. INTRODUCTION

One of the main environmental problems of today is the loss of biodiversity. Over the past 400 years 120 species of amphibians, 94 species of birds and 63 species of mammals have disappeared from the face of the Earth due to unreasonable human activities. Although each of the extinct species is a final and irreplaceable loss for the biosphere (evolution knows no turning back), many more of them are under the threat of extinction.¹

There are various causes of biodiversity loss. According to the American biologist, naturalist and writer, E. O. Wilson, they can be abbreviated as ‘HIPPO’, where the first letter means the most significant cause, and the following letters are arranged accordingly as the significance of the factor decreases. The letter ‘H’ comes from ‘habitat’, so the primary reason for the reduction of biological resources is the destruction of habitats of the organisms. The letter ‘I’ comes from ‘invasion’ and indicates the widespread impact of the invasion of alien species, as the introduction of these species, even with good intentions, is a biological contamination. Introduced from other parts of the world, some species are rapidly spreading and displacing native species of ecosystems. The first ‘P’ letter means the third problem – ‘pollution’, while the second ‘P’ letter is associated with the ‘population’ of humans – with the overpopulation of the planet. The last letter ‘O’ indicates the ‘overexploitation’ of biological resources – the destruction of species by hunting and fishing.²

Thus, the second most important cause of biodiversity loss is the invasion of alien species. These are plants, animals, or other organisms that are not native to an ecosystem but introduced largely through human action, either deliberately or by accident. They can become competitors, predators, parasites, and hybridizers of native plants and animals, ultimately threatening the survival of endemic species.³

¹ VI Danilov-Danil’jan, KS Losev and IE Rejf, *Pered glavnym vyzovom civilizacii: Vzgljad iz Rossii* (Moscow: INFRA-M 2005) <http://lit.lib.ru/r/rejf_i_e/peredglawnymwyzowomciwilizacii.shtml> accessed February 10, 2024.

² TA Puzanova, *Jekologija: uchebnoe posobie* (Moscow: ‘Izdatel’stvo ‘Jekonomika’ 2010) 132–133.

³ DK, *The Ecology Book: Big Ideas Simply Explained* (Dorling Kindersley Ltd 2019) 270.

In 2014, the Global Invasive Species Database compiled a list of the invasive alien species (IAS) titled ‘100 of the World’s Worst Invasive Alien Species’,⁴ which included the organisms that had the greatest negative impact on human activities and native species. The list includes 56 animal species, 36 plant species, 5 fungal species and 3 microbial species, some of which are the European rabbit (*Oryctolagus cuniculus*) and the cane toad (*Rhinella marina*) that caused significant damage to the endemic Australian ecosystem.

Widely known examples of IAS are also the Nile perch (*Lates niloticum*), which was introduced into Lake Victoria and caused the extinction of some 200 endemic fish species; the Caulerpa seaweed (*Caulerpa taxifolia*) invaded the Mediterranean and severely damaged the endemic aquatic flora and fauna. The introduction of the Polynesian rat into Easter Island is thought to have contributed to the deforestation of that island, with severe consequences for the human populations.⁵

The IAS pose a threat to biodiversity and natural ecosystems of Ukraine. Today there are about 90 invasive species reported, including over 40 transformer species. Generalist mollusk species have spread in the Sea of Azov and the Black Sea (*Mya arenaria*, *Anadara inaequalis*), and such species as *Deroceras caucasicum* and *Krynickillus melanocephalus*, as well as *Arion lusitanicus* slug, which is rapidly spreading in Ukraine, are a cause of major concern for the country’s biodiversity. Among the common alien mammals are the muskrat, American mink, and raccoon dog.⁶

Considering the negative impact that IAS have on biodiversity and ecosystems, an urgent need is the legal regulation fighting against such species, based on the implementation of the ecosystem approach.

The IAS are investigated by many scientists, that include Smith, Bazely, Yan (2000), Genovesi, Shine (2004), Essl, Bacher, Roy (2019), Krämer (2021) and others. The ecosystem approach is developed by Smith, Maltby (2003), Morgera (2015), Platjouw (2016), De Lucia (2019), etc. From legal standpoints, the authors of this chapter also studied these issues in different contexts. However, it should be noted

⁴ GM Luque and others, “The 100th of the World’s Worst Invasive Alien Species” (2013) 16 Biological Invasions 981.

⁵ L Krämer, “Managing Invasive Alien Species by the European Union: Lessons Learnt,” *Managing Wildlife in a Changing World* (IntechOpen 2021) <<http://dx.doi.org/10.5772/intechopen.94548>> accessed February 10, 2024.

⁶ Sixth National Report of Ukraine on the Implementation of the Convention on Biological Diversity (English version), December 2018, 83. Available online: <<https://www.cbd.int/doc/nr/nr-06/ua-nr-06-en.pdf>> accessed February 10, 2024.

that scientific research combining such areas as the legal regulation of the implementation of the ecosystem approach and the prevention of the negative impact of IAS on the environment, unfortunately, has not been carried out to date. Such a comprehensive study is relevant for national environmental legislation in the context of the latest international legal norms, and is also promising for environmental and legal science in general. Taking this into account, the purpose of this chapter is to highlight certain aspects of the international, European and Ukrainian experience of legal regulation of the implementation of the ecosystem approach in dealing with IAS.

2. IAS-LINKED ECOSYSTEM APPROACH IN INTERNATIONAL AND EUROPEAN ENVIRONMENTAL LEGISLATION

At the international level, there are many legal documents devoted to the conservation of biodiversity and ecosystems, among which leading is the Convention on Biological Diversity⁷ (CBD), adopted in 1992, having objectives to conserve biodiversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources (Art. 1).

The CBD defines the terms ‘biological diversity’ (the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part) and ‘ecosystem’ (a dynamic complex of plant, animal, micro-organism communities and their non-living environment interacting as a functional unit) (Art. 2). The CBD also establishes a number of provisions for the protection and conservation of biodiversity and ecosystems, in particular: establish a system of protected areas or areas where special measures need to be taken to conserve biodiversity; promote the protection of ecosystems, natural habitats and the preservation of viable populations of species in the wild; take measures to rehabilitate and restore degraded ecosystems; prevent the introduction of alien species that threaten ecosystems, habitats or species, and control or destroy such alien species, etc. (Art. 8 a, d, f and h).

The key provisions of the ecosystem approach are reflected in the decisions of the meetings of the governing body of the CBD – the Conference of the Parties (COP). At the First meeting (Nassau,

⁷ Convention on Biological Diversity (adopted on 5 June 1992). Available online: <https://www.cbd.int/convention/text> accessed February 10, 2024.

Bahamas, 1994), it was confirmed that the planet's essential goods, ecological functions and services depend on a variety and variability of genes, species, populations and ecosystems (para. 1 of Annex to Decision I/8)⁸, and at the Second meeting (Jakarta, Indonesia, 1995), the ecosystem approach was recognized as the basis for action under the CBD (Decision II/8).⁹ The Fifth meeting of the COP (Nairobi, Kenya, 2000) was of particular importance for the development of the ecosystem approach, as it adopted Decision V/6,¹⁰ which contains a description of the ecosystem approach, a list of its principles and practical recommendations for their application (sections 'A', 'B' and 'C').

Thus, the ecosystem approach introduced by the CBD is a means of examining the relationships within ecosystems with other systems and people for whom ecosystems are habitats and livelihoods. It involves moving from a one-sided view of marketable species – for example, accessing forests solely as a source of timber – to a multifaceted view, working on different spatio-temporal scales, using all available knowledge and involving relevant stakeholders. This approach aims to ensure the long-term sustainability of biodiversity and the significant development of today's understanding of sustainable nature.¹¹

Returning directly to IAS, it should be noted that at its Fourth meeting (Bratislava, Slovakia, 1998), the COP invited the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) to develop guidelines for the prevention of the introduction of alien species and mitigation of its consequences and report on it at its Fifth meeting (section 'C' of Decision IV/1)¹², and in Annex II to Decision IV/16¹³ it announced a comprehensive consideration of alien species as one of the items on its Sixth meeting.

In turn, at a meeting in Montreal (Canada), 2000, SBSTTA developed draft of the above guidelines,¹⁴ which are fully reflected in

⁸ CBD (1994). Report of the First Meeting on the COP to the CBD (UNEP/CBD/COP/1/17).

⁹ CBD (1995). Report of the Second Meeting of the COP to the CBD (UNEP/CBD/COP/2/19).

¹⁰ CBD (2000). Report of the Fifth Meeting of the COP to the CBD (UNEP/CBD/COP/5/23).

¹¹ RA Perelet, "Ekosistemnyi podhod k upravleniyu prirodopolzovaniem i prirodohrannoy deyatel'nostyu" (2006) 1 *Mechanism of Economic Regulation* 39.

¹² CBD (1998). Report of the Fourth Meeting of the COP to the CBD (UNEP/CBD/COP/4/27).

¹³ Ibid.

¹⁴ SBSTTA (2000). Item 3.4 of the Provisional Agenda. Alien Species: Guiding

the Annex to Decision V/8 of the COP.¹⁵ This Annex establishes a definition of the terms ‘alien species’, which refers to a species that occurs outside its normal distribution, and ‘alien invasive species’, an alien species that threatens ecosystems, natural habitats or species, and declares that all measures to deal with IAS should be based on the ecosystem approach, in line with the relevant provisions of the CBD and the decisions of the COP (Guiding principle 3 ‘Ecosystem approach’).

The most thorough provisions on IAS in general and the ecosystem approach as the basis in dealing with such species, in particular, were enshrined in Decision VI/23 ‘Alien Species that Endanger Ecosystems, Habitats or Species’,¹⁶ adopted at the Sixth meeting of the COP (the Hague, the Netherlands, 2002), and in the Annex of which ‘Guiding Principles of Preventing Invasions and Mitigating the Influence of Alien Species that Endanger Ecosystems, Habitats or Species’ are contained.

Decision VI/23 sets out the basic framework for the legal regulation of the prevention of the negative impact of IAS on ecosystems. As stated in the Preamble to it, such species are a major threat to biodiversity, especially in geographically and evolutionarily isolated ecosystems, such as Small Island Developing States, and that the risk may increase with the expansion of world trade, transport, tourism and climate change.

In accordance with the ‘Guiding Principles’, ‘alien species’ refers to a species, subspecies or lower taxon, introduced outside its natural past or present distribution; includes any part, gametes, seeds, eggs, or propagules of such species that might survive and subsequently reproduce, while ‘invasive alien species’ means an alien species whose introduction and/or spread threaten biological diversity (note 57). Some of the measures envisaged by Decision VI/23 on the prevention of the harmful effects of IAS on ecosystems can be proposed. So, in the process of implementing the ‘Guiding Principles’ and developing, reviewing and implementing national strategies and action plans for biodiversity conservation in order to address threats of IAS to the biodiversity, it is necessary to raise awareness among policy makers at

Principles for the Prevention, Introduction and Mitigation of Impacts (UNEP/CBD/SBSTTA/5/5).

¹⁵ CBD (2000). Report of the Fifth Meeting of the COP to the CBD (UNEP/CBD/COP/5/23).

¹⁶ CBD (2002). Report of the Sixth Meeting of the COP to the CBD (UNEP/CBD/COP/6/20).

all levels of government and in the private sector, officials in quarantine, customs and other border services, as well as among the general public, about the threats posed to biodiversity by IAS, goods and services provided by ecosystems, and the means to deal with such threats, and interact with trading partners and neighboring countries, at the regional level, and, as appropriate, with other countries to address the threats posed by IAS to the biodiversity of ecosystems located in two or more countries and to migratory species, as well as to address issues of common regional interest (paras 'e' and 'g' of part 10).

It also emphasizes that priority measures should consider the need to include IAS provisions in national biodiversity strategies and action plans, as well as in sectoral and intersectoral policies, strategies and plans, in order to take into account, the ecosystem approach and ensure the comprehensive implementation of national strategies and IAS action plans in accordance with the calls set out in decision V/8 of the COP (para. 'd' of part 12). A special place in Decision VI/23 is given to recommendations to facilitate research and assessments on: the parameters of invasive species and the vulnerability of ecosystems and habitats to IAS, and the impact of climate change on these parameters; measures to increase the capacity of ecosystems to resist IAS and recover from their invasions; criteria for assessing the risks associated with the introduction of IAS into biological diversity at the genetic, species and ecosystem levels (paras 'a', 'g' and 'i' of part 24). In addition, the application of these 'Guiding Principles' should pay due attention to the fact that ecosystems are dynamic over time and, therefore, the natural distribution of species can change without human intervention. One of the main guidelines is that measures to deal with IAS should be based accordingly on the ecosystem approach described in Decision V/6 of the COP (Principle 3). Research on IAS should include careful detection of IAS and documentation of: a) history and ecology of the invasion (origin, routes of entry and time frame); b) biological characteristics of IAS; and c) the associated effects on the ecosystem, species and genetic level, as well as the social and economic consequences and the nature of their changes over time (Principle 5).

Thus, emphasis is placed on cooperation with relevant organizations, which will facilitate the further implementation of Art. 8 h) of the CBD, including through the development of guidelines, sound methods and pilot projects to address the threats posed by IAS to certain

habitats, including means to enhance the capacity of ecosystems to resist or recover from IAS (part 16).

Issues against IAS were discussed at almost all subsequent meetings of the COP to the CBD, in particular, the Seventh (Decision VII/13), the Eighth (Decision VIII/27), the Tenth (Decision X/2), the Eleventh (Decision XI/28), the Twelfth (Decision XII/17), the Thirteenth (Decision XIII/13) and the Fourteenth (Decision XIV/11) meetings. For example, the Tenth meeting (Nagoya, Japan, 2010) approved the Strategic Plan for Biodiversity 2011-2020 'Living in harmony with nature' and the Aichi Biodiversity Targets (Annex to Decision X/2).¹⁷ The Plan contains a list of strategic objectives in this area, including taking measures to address the causes of biodiversity loss, as well as reducing the direct burden on it (paras 'a' and 'b' of part 10). Targets 8 and 9 of 'Strategic Objective B. Reduction of direct pressures on biodiversity and promotion of sustainable use' envisage that by 2020 environmental pollution, including from excess nutrients, should be brought to levels that do not cause harm the functioning of ecosystems and biodiversity, and the identification and prioritization of IAS and their distribution routes, priority species will be regulated or destroyed, and measures will be taken to regulate movement routes to prevent their introduction and implementation.

Additionally, a number of acts have been developed to implement the CBD and to actively combat harmful species at the international level, including: The Global Invasive Species Programme, 1999, The Global Strategy on Invasive Alien Species, 2001, The European Strategy on Invasive Alien Species, 2002, etc. For instance, the Global Strategy on Invasive Alien Species states that these species are currently recognized as one of the greatest biological threats to the ecological and economic well-being of our planet, as IAS are alien species whose creation and distribution threaten ecosystems, plant species or their habitats, harm the economy or the environment.¹⁸ That is why the European Strategy on Invasive Alien Species states that transboundary and sub-regional cooperation is a priority, as many of these territories cross the national borders. That is, ensuring the application of a precautionary approach to IAS decision-making in accordance with international law, as part of a risk analysis that takes into account the possible effects on internal biodiversity

¹⁷ CBD (2011). Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets. Decision X/2 (UNEP/CBD/COP/10/27).

¹⁸ Global Invasive Species Programme, *Global Strategy on Invasive Alien Species* (IUCN 2001).

and ecosystem functions, and the need to promote an ecosystem approach as an appropriate basis for assessing planned actions and policies applies to IAS.¹⁹

At the regional level, common legal procedures ensure the control of pests and diseases that adversely affect the condition of plants, animals, life and human health, in contrast to IAS that threaten biodiversity and ecosystem functions. The above document provides for a number of key actions, including: empowering the competent authorities to take appropriate mitigation measures; revision of lists of species and conservation strategies to ensure legal protection against IAS; make better use of existing legal measures (for example, to control the spread of weeds); establishing responsibilities within reasonable limits for landowners, users and relevant stakeholders to prevent or control the further spread of IAS, etc.

Since an ecosystem is a set of species of living organisms that have adapted to living in a certain environment, that is why legal regulation and measures to regulate the negative impact of IAS on ecosystems should be based on the main types of ecosystems. It will be recalled that the CBD distinguishes terrestrial, marine and other aquatic ecosystems. The division into main types of ecosystems corresponds to the thematic areas studied under the CBD. The use of these spatial units for analysis ensures consistent reporting under the CBD and also allows for thematic, regional and global reviews. It is expected that countries will use more detailed data on key typical ecosystems for practical purposes. Such a hierarchical ecosystem allows for general reviews at different levels, both in individual countries and at the inter-State level. The main types of ecosystems include: marine and coastal areas, forests, freshwater bodies, tundra, arid and sub-humid lands, meadows, agricultural lands, and built-up lands, etc.²⁰

It should be noted that issue of preserving ecosystems from IAS at the international level has been consolidated not only in the CBD and decisions of its COP, but also in other important international agreements. For example, the Framework Convention on the

¹⁹ P Genovesi and C Shine, *European Strategy on Invasive Alien Species: Convention on the Conservation of European Wildlife and Habitats (Bern Convention)* (Council of Europe 2004). Available online: <<https://www.cbd.int/doc/external/cop-09/bern-01-en.pdf>> accessed February 10, 2024.

²⁰ CBD (2003a). Monitoring and indicators: designing national-level monitoring programmes and indicators (UNEP/CBD/SBSTTA/9/10).

Protection and Sustainable Development of the Carpathians,²¹ which in the context of implementing ecosystem approach has established certain requirements for many spheres, including preservation and sustainable use of biological and landscape diversity (Art. 5). Protocols to this Convention have been adopted in various years, which also reflect certain aspects of the ecosystem approach, in particular the control of IAS. Thus, in the Protocol on Conservation and Sustainable Use of Biological and Landscape Diversity²² IAS are recognized as the cause of deterioration of quality and value of environmental functions, its degradation, their next definition is provided ('non-native species introduced intentionally or unintentionally outside their natural habitats where they have settled, reproduced and disseminated in ways that harm the environment into which they have been imported') (Art. 2 f and j), and the Parties are obliged to cooperate in order to prevent the import, control or destruction of IAS that threaten ecosystems, habitats or local species of the Carpathians (para. 'b' of Art. 1), prevention of their introduction or release (Art. 13), etc.

The regulatory framework for IAS is also being actively developed by the European Union, which is a Party to the CBD and has certain obligations under Art. 8 h) to prevent the introduction of alien species that endanger ecosystems, habitats or species. Thus, Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive)²³ aims to promote the maintenance of biodiversity, taking account of economic, social, cultural and regional requirements, emphasizing the need to adopt provisions for additional measures for the re-introduction of certain natural species of flora and fauna and the possible introduction of alien species.

²¹ The Framework Convention on the Protection and Sustainable Development of the Carpathians (signed on 22 May 2003). Available online: <http://www.carpathianconvention.org/convention/framework-convention/> accessed February 10, 2024.

²² The Protocol on Conservation and Sustainable Use of Biological and Landscape Diversity to the Framework Convention on the Protection and Sustainable Development of the Carpathians (adopted on 19 June 2008). Available online: <http://www.carpathianconvention.org/convention/protocols/protocol-on-biodiversity/> accessed February 10, 2024.

²³ Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, OJ L 206, 22.7.1992, p. 7–50.

In support of the achievement of the aims of the Habitats Directive, as well as the Water Framework Directive²⁴, the Marine Strategy Framework Directive²⁵ and the Birds Directive²⁶, EU Regulation 1143/2014 of 22 October 2014 (on the prevention and management of the introduction and spread of invasive alien species)²⁷ approved the relevant requirements for risk assessment, procedures for measures to prevent the penetration of IAS into the EU, rapid identification and removal of new IAS, management of species that are already widespread in the EU, etc. The document states that a significant proportion of alien species can become invasive and have a serious negative impact on biodiversity and related ecosystem services, as well as other social and economic consequences that should be prevented. About 12,000 species in the EU and other European countries are alien, of which about 10-15% are invasive.²⁸ In accordance with this regulation, a list of IAS for EU countries was subsequently adopted Commission Implementing Regulation (EU) 2016/1141 of 13 July 2016 adopting a list of invasive alien species of Union.²⁹

It is worth noting that the EU Regulation 1143/2014 and its monitoring were discussed in detail by Krämer (2021), in order to see, what lessons can be learnt from the cooperation and concertation of the different states with regard to IAS. The author concludes that in order to reach results, within the EU or at international level, close cooperation between neighbouring countries is necessary. It is not sufficient to leave the implementation and effective application of international agreements or of EU legislation to the goodwill of the countries concerned. The COP to the CBD as well as the European

²⁴ Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy, OJ L 327, 22.12.2000, p. 1–73.

²⁵ Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy, OJ L 164, 25.6.2008, p. 19–40.

²⁶ Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds, OJ L 20, 26.1.2010, p. 7–25.

²⁷ Regulation (EU) No. 1143/2014 of the European Parliament and of the Council of 22 October 2014 on the prevention and management of the introduction and spread of invasive alien species, OJ L 317, 4.11.2014, p. 35–55.

²⁸ Ibid.

²⁹ Commission Implementing Regulation (EU) 2016/1141 of 13 July 2016 adopting a list of invasive alien species of Union concern pursuant to Regulation (EU) No 1143/2014 of the European Parliament and of the Council C/2016/4295, OJ L 189, 14.7.2016, p. 4–8.

Commission will, therefore, have to do more to ensure an effective application of the existing provisions.³⁰

To date, a group of scientists was a comprehensive work on developing a list of invasive alien species likely to threaten biodiversity and ecosystems in the European Union. They present these species highlighting the potential negative impacts and the most likely biogeographic regions to be affected by these potential IAS. Furthermore, researchers recommend conducting regular reviews of both the species rankings and future potential IAS that could threaten the EU, as demanded by the EU.³¹ For this purpose, dedicated species accounts should be considered and kept updated in the species data repository formally endorsed by the EU Regulation i.e., EASIN – European Alien Species Information Network.³²

Concluding the common review of international and European experience in the legal regulation of the introduction of the ecosystem approach in the fight against IAS, it should be mentioned that an extraordinary event in the field of EU biodiversity and ecosystems was the adoption on 20 May 2020 by the European Commission (2020) of a new EU Biodiversity Strategy for 2030: Bringing nature back into our lives,³³ which is called ‘the most ambitious environmental document in human history’ and according to which EU countries seek not only to preserve their biodiversity and related ecosystem services, but also to become a world leader in nature conservation and restoration for a decade.³⁴ The Strategy contains specific commitments and actions to be implemented in the EU by 2030, including control of IAS. It is noted that IAS can significantly undermine efforts to protect and restore nature, facilitate the outbreak and spread of infectious diseases, posing a threat to humans and wildlife. Of the 1,872 species now considered

³⁰ Krämer (n 5).

³¹ HE Roy and others, “Developing a List of Invasive Alien Species Likely to Threaten Biodiversity and Ecosystems in the European Union” (2018) 25 *Global Change Biology* 1032.

³² Ibid.

³³ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions EU Biodiversity Strategy for 2030 Bringing nature back into our lives, COM/2020/380 final

³⁴ European Commission, EU Biodiversity Strategy to 2030: Returning Nature to Our Lives. Address by the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions (unofficial adapted translation into Ukrainian from English O Osypenko; ed. and adapt. A. Kuzemko et al.) (Chernivtsi: Druk Art 2020) 6

threatened in Europe, 354 are under threat from IAS. Without effective control measures, the rate of invasion and the risks it brings to nature and health will continue to rise.³⁵

3. ECOSYSTEM APPROACH IN DEALING WITH IAS IN THE ENVIRONMENTAL LEGISLATION OF UKRAINE

The main problem in developing legal mechanisms to regulate the prevention of IAS in national legislation is not taking into account all existing species of different ecosystems. The type of ecosystems to be invaded include freshwater, marine, terrestrial, etc., and the type of invaders include plants, animals, microorganisms, etc. In this context, it would be useful to give examples from some countries of the introduction of an ecosystem approach to the regulation of IAS at the national level.

For example, one of the means of public awareness used in USA is a list of IAS called ‘The Dirty Dozen’, which are some of the least desirable alien species in USA. Although these 12 species differ from each other in many ways, they all have one thing in common: they cause problems to native species and ecosystems. The species on this list represent many different organisms, a variety of ecosystems, and a wide geographical range, from Hawaii to Florida and from Maine to California.³⁶

The next example is Canada, which in pursuance of Art. 8 h) of the CBD, that, in 1995, developed the Canadian Biodiversity Strategy, and in 2004, the Invasive Alien Strategy for Canada. Subsequently, the national IAS strategy led to the development of two action plans for terrestrial IAS plants and plant pests and aquatic IAS, respectively, as well as a national strategy for wildlife diseases.³⁷

Particular attention needs to be paid to marine and freshwater ecosystems, which are considered very vulnerable to the invasion of

³⁵ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions EU Biodiversity Strategy for 2030 Bringing nature back into our lives, COM/2020/380 final

³⁶ R Wittenberg and MJW Cock, *Invasive Alien Species ; a Toolkit of Best Prevention and Management Practices* (CAB International, Wallingford, Oxon, UK 2001) 32–33.

³⁷ AL Smith, DR Bazely and N Yan, “Are Legislative Frameworks in Canada and Ontario up to the Task of Addressing Invasive Alien Species?” (2013) 16 Biological Invasions 1325.

alien species. That is why international instruments relating to the aquatic environment emphasize the need for precautionary measures related to the introduction of alien species.³⁸ Geographically isolated ecosystems are particularly vulnerable to invasive species. That is why it is necessary to cite the example of island States, for which the provision of an ecosystem approach is extremely important for the conservation of all biological diversity. The IAS is a major threat to the vulnerable marine, freshwater and terrestrial biodiversity of the Caribbean and to the people whose livelihoods depend on it. The Caribbean States have recognized the need for a regional strategy and have expressed interest in pooling their national efforts to implement Art. 8 h) of the CBD, which will lead to the joint development of the Global Environment Facility (GEF) funded project entitled ‘Mitigation the Threats of Invasive Alien Species in the insular Caribbean’. The aim of the project is to mitigate the threat to local biodiversity and the economy from IAS in the Caribbean islands, including terrestrial, fresh and marine ecosystems.³⁹ Therefore, the legal framework should provide a basis for regulating the invasion of alien species into any type of ecosystem, as well as for monitoring and managing their use wherever this occurs. However, today the legal regulation of terrestrial ecosystems is much broader than for coastal and marine environments or inland water ecosystems.⁴⁰

While exploring the foundations of legal regulation of this issue in Ukraine, it should be noted that Ukraine, ratifying the CBD⁴¹ and other environmental treaties, has undertaken international legal obligations to preserve and restore natural ecosystems and the implementation of the ecosystem approach in national environmental policy and law, including dealing with IAS. Ukraine also has certain obligations for the conservation of biological diversity and natural ecosystems in the framework of the Association Agreement with the

³⁸ C Shine, N Williams and L Gündling, *A Guide to Designing Legal and Institutional Frameworks on Alien Invasive Species* (IUCN 2000).

³⁹ U Krauss, “Invasive alien species management in St. Lucia and Caribbean partner countries”, *Actes du Colloque Biodiversité insulaire: la flore, la faune et l’homme dans les Petites Antilles* (Martinique 2010) 196.

⁴⁰ Shine/Williams/Gündling (n. 38).

⁴¹ Law of Ukraine (1994). On Ratification of the Convention on Biological Diversity, Law of Ukraine 257/94-VR of 29 November (1994), Verkhovna Rada of Ukraine, 1994. Available online: <<https://zakon.rada.gov.ua/laws/show/257/94-bp#Text>> accessed February 10, 2024.

European Union,⁴² including the implementation of the Habitats, Birds and Water Framework Directive (Annex XXX). However, according to experts, in the light of the newly adopted EU Biodiversity Strategy 2030, the full implementation of all objectives set by the Agreement will be insufficient to achieve Ukraine's indicators relevant in the EU after the adoption of the Strategy. Therefore, this document can be considered without achieving indicators of which further European integration steps will be difficult to imagine.⁴³

The main strategic document of environmental orientation in Ukraine is the Law 'On Basic Principles (Strategy) of the State Environmental Policy of Ukraine for the period up to 2030',⁴⁴ which was adopted on 28 February 2019, and came into force on 1 January 2020. Adoption of this document was an important step towards the formation of a modern national environmental policy, as it is aimed at reviewing its priority tasks related to the signing of the Association Agreement between Ukraine and the EU, and ensuring gradual approximation of environmental legislation with the EU directives. This Strategy should become a reference point for further systematization of environmental legislation in the context of European integration processes.⁴⁵

A comprehensive analysis of the provisions of the Strategy indicates that significant attention is paid in it to the conservation and restoration of ecosystems and the implementation of the ecosystem approach, since the ecosystem component is clearly manifested as the goal of the state environmental policy, as well as among the expected results of its implementation, since in accordance with Section VI in 2030 year, Ukraine must achieve such a level of balanced (sustainable) development, in which dependence on the use of non-renewable natural resources and environmental pollution will be reduced to ecosystemically acceptable levels.

⁴² Association Agreement between the European Union and its Member States, of the one part, and Ukraine, of the other part, Official Journal of the European Union L 161/3, 29.5.2014. Available online: <[https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:22014A0529\(01\)&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:22014A0529(01)&from=EN)> accessed February 10, 2024.

⁴³ European Commission (n. 34).

⁴⁴ Law of Ukraine (2019). On Basic Principles (Strategy) of the State Environmental Policy of Ukraine for the period up to 2030, Law of Ukraine 2697-VIII of 28 February (2019), Verkhovna Rada of Ukraine, 2019. Available online: <<https://zakon.rada.gov.ua/laws/show/2697-19#Text>> accessed February 10, 2024.

⁴⁵ Anatolii Getman, *Ekolohichne pravo* (Kharkiv: Pravo 2019) 57.

The Strategy does not explicitly indicate the need to implement an ecosystem approach in dealing with IAS, but it states that one of the tasks to reduce environmental risks in order to minimize their impact on ecosystems (Objective 4) is the prevention of the spread of invasive species and the control of their occurrence and distribution in natural ecosystems, including marine ones.

Thus, it can be assumed that the application of the ecosystem approach in the fight against IAS follows from a broad formulation of the goal of the State environmental policy, which is based on the need to implement this approach in all spheres of socio-economic development. Nevertheless, it is obvious that this wording needs further clarification, which, incidentally, is stated in the recommendations of the parliamentary hearings approved on January 14, 2020 on the topic: 'Priorities of environmental policy of the Verkhovna Rada of Ukraine for the next five years',⁴⁶ in which it is recommended that the relevant Ministry together with the central executive authorities should consider the specification and clarification of the above Law, mechanisms to ensure its implementation, as well as streamlining environmental legislation of Ukraine by systematizing it for each of the natural resources with the ecosystem approach.

Issues of IAS control, albeit briefly, are enshrined in the Concept of the National Biodiversity Conservation Program for 2005-2025.⁴⁷ It provides for measures to preserve flora and fauna, along with their groups, complexes and ecosystems, and notes that the implementation of this Program will allow to recreate degraded ecosystems, promote the conservation of endangered species, prevent the introduction of species characteristic of other natural regions that may adversely effect on ecosystems, local species or public health.

The latest strategic document, which is likely to replace or supplement the previous one, should be the Biodiversity Strategy to

⁴⁶ Resolution of the Verkhovna Rada of Ukraine (2020). On the Recommendations of the Parliamentary Hearings on the Topic: 'Priorities of the Environmental Policy of the Verkhovna Rada of Ukraine for the Next Five Years, Resolution of the Verkhovna Rada of Ukraine 457-IX of 14 January (2020), Verkhovna Rada of Ukraine, 2020. Available online: <<https://zakon.rada.gov.ua/laws/show/457-20#Text>> accessed February 10, 2024.

⁴⁷ Order of the Cabinet of Ministers of Ukraine (2004). On Approval of the Concept of the National Biodiversity Conservation Program for 2005-2025. Order of the Cabinet of Ministers of Ukraine 675-r of 29 September (2004), Verkhovna Rada of Ukraine, 2004. Available online: <<https://zakon.rada.gov.ua/laws/show/675-2004-p#Text>> accessed February 10, 2024.

2030, which is currently being developed and will be the basis for all environmental decisions. This strategy will not only become a comprehensive document aimed at biodiversity conservation but will also demonstrate a European approach to nature protection in Ukraine.⁴⁸ The objectives of the Strategy are: ensuring monitoring of the state of biodiversity in Ukraine; introduction of the concept of ecosystem services; formation of an integrated approach to the conservation of species and the fulfillment of international obligations for the conservation of biodiversity. We hope that due attention in the Strategy is paid specifically to the issues of conservation and restoration of ecosystems and the implementation of the ecosystem approach in dealing with IAS.

Equally important in this area is the draft order of the Cabinet of Ministers of Ukraine ‘On approval of the National Strategy for the management of invasive alien species of flora and fauna in Ukraine until 2030’, designed to improve state environmental policy to prevent penetration and control of introduction of IAS into natural ecosystems, destruction and mitigation (minimization) of adverse effects of such species on natural ecosystems, economic activity and human health (Art. 2). Within this aim, the following objectives and tasks are identified:

1. Raising awareness and scientific and methodological support of measures for the management of IAS. Tasks within this objective:

- conducting special research on the ecological and biological properties of alien species and identifying potential IAS;
- development of criteria for assigning species to the category of IAS and assessing the level of their impacts on biodiversity, ecosystems, public health and economic activity;
- approval and periodic updating of lists of IAS by level of danger for local species, ecosystems and human health by individual taxonomic units or their groups; and
- creation of a database on IAS by all taxonomic groups, etc.

2. Improving public policy, regulatory framework and institutional capacity to prevent the intrusion, destruction, control of the introduction of IAS into natural ecosystems and mitigate (minimize)

⁴⁸ V Ukraini rozpochato rozrobku proiektu Stratehii okhorony bioriznomanittia do 2030 roku. Available online: <<https://spilno.org/news/v-ukraini-rozpochato-rozrobku-proiektu-stratehii-okhorony-bioriznomanitya-do-2030-roku>> accessed February 10, 2024.

their adverse effects. The following tasks are distinguished within this objective:

- taking into account in state strategic documents the issues of IAS management;
- formation of the regulatory framework for the effective prevention of penetration and control over the spread of IAS, their destruction, minimizing the impact or mitigation of the consequences of the invasion;
- approval of criteria for classifying species as IAS, assessment of their impact on biological diversity and economic activity, public health, structural and functional organization of ecosystems; and
- approval of lists of IAS, etc.

3. Development and implementation of practical measures to prevent the penetration, control of the spread, destruction and mitigation of the effects of IAS invasion at the local and state levels, which provides for the following tasks:

- development and approval of a system (plans) of measures to prevent the penetration, control of the spread, destruction and mitigation of the consequences of the invasion of IAS at the local and state levels; and
- development of measures to control the spread and control of IAS within the territories and objects of the nature reserve fund in order to preserve the natural state of ecosystems, rare aboriginal species and groups.
- determination of responsible executors for the implementation of such measures.

It is assumed that the achievement of the objectives of the National Strategy will be carried out in two stages: the first – 2020-2023, and the second – 2023-2030. This Strategy will become a book of rules for the treatment of IAS of flora and fauna in Ukraine. It will establish legal mechanisms for the management of IAS, in particular, regulations, guidelines will be approved, as well as appropriate amendments to existing regulations on agriculture, fisheries, forestry, hunting, housing and communal services, transport infrastructure, natural reserve fund, veterinary medicine, quarantine and plant protection, sanitary and epidemiological well-being of the population, customs.

Thus, it is observed that the National Strategy provides the basic principles for preventing the negative impact of IAS on biodiversity and ecosystems of Ukraine, and, therefore, its adoption will facilitate the implementation of the CBD and other international and European instruments in this area into national legislation. However, the National Strategy, essentially needs further refinement, taking into account the ecosystem approach. Although among the national strategic documents, there is a positive trend towards the recognition of the ecosystem approach in dealing with IAS, the situation with the recognition of this issue at the level of current regulatory environmental legislation of Ukraine is much more complicated.

It should be noted that the key environmental law in Ukraine ‘On Environmental Protection’⁴⁹ does not contain any rules for the preservation and restoration of natural ecosystems, the introduction of an ecosystem approach and the prevention of negative impacts of IAS on biodiversity and ecosystems. In addition, according to this Law, the ecosystem is not recognized as an object of legal protection at all (Art. 5), just as it not only lacks definitions, but also never mentions the words ‘ecosystem’ and ‘invasive alien species’, which are a significant shortcoming that needs to be addressed as soon as possible. Such legal uncertainty creates a significant barrier to the introduction of an ecosystem approach to IAS for all ecosystems, not to mention the need to take into account certain features of legal regulation regarding their different types. Also, the Land Code of Ukraine does not contain any legal norms on ecosystems⁵⁰, although the ecosystem definition of ‘land’ is enshrined in the Law of Ukraine ‘On Land Protection’⁵¹, according to which land is a land surface with soils, minerals and other natural elements that are organically combined and function with it (Art. 1). Neither the ecosystem approach nor IAS are mentioned in the Water

⁴⁹ Law of Ukraine (1991). On Environmental Protection, Law of Ukraine 1264-XII of 25 June (1991), Verkhovna Rada of Ukraine, 1991. Available online: <<https://zakon.rada.gov.ua/laws/main/1264-12#Text>> accessed February 10, 2024.

⁵⁰ Law of Ukraine (2001). Land Code of Ukraine, Law of Ukraine 2768-III of 25 October (2001), Verkhovna Rada of Ukraine, 2001. Available online: <<https://zakon.rada.gov.ua/laws/show/2768-14#Text>> accessed February 10, 2024.

⁵¹ Law of Ukraine (2003). On Land Protection, Law of Ukraine 962-IV of 19 June (2003), Verkhovna Rada of Ukraine, 2003. Available online: <<https://zakon.rada.gov.ua/laws/main/962-15#Text>> accessed February 10, 2024.

Code of Ukraine⁵², although in the Procedure for state water monitoring⁵³ significant attention has been paid to the protection of ecosystems from the negative impact of IAS.

It would seem that the key role in this area should belong to floristic and faunal legislation, especially since the list of activities related to environmental measures includes measures to prevent the introduction and spread of alien plant species in natural ecosystems. Instead, in the Law of Ukraine ‘On Flora’⁵⁴ there are no references to the ecosystems or ecosystem approach, only the ecosystem definitions of ‘flora’ (the totality of all plant species, as well as fungi and their groups in a given area) and ‘natural plant communities’ (a set of plant species that grow within certain areas and are in close interaction with each other and with environmental conditions). This Law provides a definition of ‘introduction’ (artificial introduction of a species into the plant world outside its natural range) (Art. 3) and states that the requirements for the introduction of wild plants are determined by the relevant Regulation, the responsibility for the development and approval of which rests with the relevant Ministry (part 3 of Art. 33). In a very general way, the ban on the introduction of IAS is provided for the legal protection and use of greenery in human settlements, as in accordance with paragraphs 6 and 7 of Section IV of the Standard Rules for Landscaping a Settlements⁵⁵ of aboriginal flora and their decorative forms are used for landscaping such areas, while the use of plant IAS is prohibited.

⁵² Law of Ukraine (1995). Water Code of Ukraine, Law of Ukraine 213/95-VR of 6 June (1995), Verkhovna Rada of Ukraine, 1995.

⁵³ Resolution of the Cabinet of Ministers of Ukraine (2018). On approval of the Procedure for the implementation of state monitoring of waters, Resolution of the Cabinet of Ministers of Ukraine 758 of 19 September (2018), Verkhovna Rada of Ukraine, 2018. Available online: <<https://zakon.rada.gov.ua/laws/show/758-2018-rr#Text>> accessed February 10, 2024.

⁵⁴ Law of Ukraine (1999). On Flora, Law of Ukraine 591-XIV of 9 April (1999), Verkhovna Rada of Ukraine, 1999. Available online: <<https://zakon.rada.gov.ua/laws/main/591-14#Text>> accessed February 10, 2024.

⁵⁵ Order of the Ministry of Regional Development, Construction, Housing and Communal Services of Ukraine (2017). On Approval of the Model Rules for the Improvement of the Territory of a Settlement, Order of the Ministry of Regional Development, Construction, Housing and Communal Services of Ukraine 310 of 27 November (2017), Verkhovna Rada of Ukraine, 2017. Available online: <<https://zakon.rada.gov.ua/laws/show/z1529-17#Text>> accessed February 10, 2024.

In contrast to the analyzed acts, the Forest Code of Ukraine⁵⁶ shows some tendency to implement an ecosystem approach, in connection with the implementation of some international acts.⁵⁷ In Art. 1 of this Code, the ecosystem definition of ‘forest’ is enshrined, which means a type of natural complexes (ecosystem) combining mainly woody and shrubby vegetation with relevant soils, grasses, fauna, microorganisms and other natural components that are interrelated, and linked in their development, affect each other and the environment. In addition, this chapter was supplemented by ecosystem definitions of natural forests (natural forest ecosystems), virgin forests (virgin forest ecosystems) and quasi-virgin forests (conditionally virgin forest ecosystems) (parts 7-9). At the same time, only one article in the Code (Art. 85 ‘Conservation of biodiversity in forests’) is devoted to the issue of combating IAS, according to which such conservation is carried out by forest owners and permanent forest users at the genetic, species, population and ecosystem levels by, in particular, prevention of genetic contamination of aboriginal species and invasions of introduced species into natural ecosystems.

A similar situation can be traced with regard to faunal legislation. The Law of Ukraine ‘On Fauna’⁵⁸ does not contain a definition of ‘fauna’, but recognizes its ecosystem character, because not only objects of fauna (wild animals, their parts and products of their vital activity), but also their habitat and migration routes are under protection (Art. 3). Moreover, Art. 36 of this Law, which determines the content of wildlife protection, stipulates that such protection provides a comprehensive approach to studying the state, development and implementation of measures to protect and improve the ecological systems in which the wildlife is located and is an integral part (part 2). At the same time, one of the ways to protect animals is to prevent the invasion of alien species of

⁵⁶ Law of Ukraine (1994). Forest Code of Ukraine, Law of Ukraine 3852-XII of 21 January (1994), Verkhovna Rada of Ukraine, 1994. Available online:

<<https://zakon.rada.gov.ua/laws/main/3852-12#Text>> accessed February 10, 2024.

⁵⁷ Law of Ukraine (2017). On Amendments to Certain Legislative Acts of Ukraine on the Protection of Virgin Forests under the Framework Convention for the Protection and Sustainable Development of the Carpathians, Law of Ukraine 2063-VIII of 23 May (2017), Verkhovna Rada of Ukraine, 2017. Available online:

<<https://zakon.rada.gov.ua/laws/show/2063-19#Text>> accessed February 10, 2024.

⁵⁸ Law of Ukraine (2001). On Fauna, Law of Ukraine 2894-III of 13 December (2001), Verkhovna Rada of Ukraine, 2001. Available online:

<<https://zakon.rada.gov.ua/laws/show/2894-14#Text>> accessed February 10, 2024.

wild animals and to take measures to prevent negative consequences in the event of their accidental penetration (Article 37).

Certain reservations regarding IAS are also contained in the Law of Ukraine 'On Aquaculture'.⁵⁹ It provides definitions of aquaculture objects (aquatic organisms used for breeding, keeping and cultivation in aquaculture conditions), their introduction (activity on the introduction of aquatic organisms (introducers) into water bodies (their parts) located outside their natural habitat) and alien species of aquatic organisms (species or subspecies of aquatic biological resources that appear outside their natural range and outside the zone of their natural potential distribution) (Art. 1). Also it imposes on aquaculture entities the obligation to prevent unauthorized, including accidental, ingress of alien and non-native species into water bodies (parts thereof) (part 2 of Art. 5), and in the case of use of these species in the field of aquaculture to ensure their uncontrolled spread in new habitats, the absence of negative impact on the state of populations of local species of aquatic biological resources and the conditions of functioning of aquatic ecosystems (part 1 of Art. 20).

4. CONCLUSION

The study concludes that, at the international level, the ecosystem approach can rightly be considered as the basis for combating IAS, which is explicitly stated in Decision VI/23 of the COP to the CBD. EU environmental policy also aims to regulate the implementation of the ecosystem approach to the IAS, as evidenced by the Biodiversity Strategy 2030, which pays due attention to the implementation of the ecosystem approach to achieve its objectives, including the control of the IAS.

Having ratified the CBD, Ukraine has taken international legal obligations to preserve and restore natural ecosystems and the implementation of the ecosystem approach in environmental policy and law. Analysis of Ukrainian environmental legislation shows that a positive trend towards the recognition of the ecosystem approach in dealing with IAS is observed primarily among national environmental strategic documents. Also important in this area should be the

⁵⁹ Law of Ukraine (2012). On Aquaculture, Law of Ukraine 1593-VI of 18 September (2012), Verkhovna Rada of Ukraine, 2012. Available online: <<https://zakon.rada.gov.ua/laws/main/5293-17#Text>> accessed February 10, 2024.

Biodiversity Strategy until 2030 and the National Strategy for the management of invasive alien species of flora and fauna in Ukraine until 2030, which are currently in the process of development and approval.

In contrast to the specified strategic documents, in other acts of Ukrainian environmental legislation, in particular in the Law of Ukraine ‘On Environmental Protection’ and resource legislation (Land, Water, Forest Codes of Ukraine, as well as the laws of Ukraine ‘On Flora’, ‘On Fauna’, etc.), the issues of IAS control on the basis of the implementation of the ecosystem approach are regulated in fragments and inconsistently and therefore need significant reform.

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Conceptual Challenges to the Recognition and Enforcement of the Right to Clean, Safe and Healthy Environment

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ABSTRACT

The right to clean or healthy environment, or what may be called environmental right, is one of the most controversial emerging rights since the agitation for the recognition of the link between human rights and the environment started gaining momentum at international law forums. This is happening partly because, at the global level, no treaty attempts to delimit the scope of this right explicitly; an endeavour which would have served as a form of guide to national jurisdictions. Given that the UN General Assembly recently officially resolved that a clean, healthy and sustainable environment is a universal human right, and considering the implication this may have on national jurisdictions, it has become more imperative to redefine this right for the ease of enforcement. This chapter seeks to examine the conceptual and the theoretical conundrum as well as the criticisms of the right to clean, safe and healthy environment that have largely played a prominent role against the enforcement of the rights in general. The chapter also examines constitutional challenges associated with the recognition of the rights in Nigeria and the judicial effort in the case of *Gbemre v SPDC* in attempting to expound the constitutional right to life to include the right to the environment. The chapter finds that the right to the environment has been described and qualified diversely from one jurisdiction to another rendering the same susceptible to the challenges of interpretation. The chapter, however, suggests that given the importance of the right, same should be interpreted, no matter how it is qualified, to mean a right to an environment fit for human living, the courts

being sufficiently able to draw the line between what environment is fit and what is not for human habitation.

Keywords: Recognition; Enforcement; Clean environment; Environmental right; Constitution; Justiciable; Nigeria

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1. INTRODUCTION

The agitation for clean, safe and healthy environment has just assumed a more progressive dimension with the recent official resolution of the UN General Assembly recognising the right to clean, healthy and sustainable environment as a universal human right. There has always been high demand on modern governments to diversify, industrialise, promote and sustain a sound economy to enable them to create jobs, provide housing and meet other human and capital needs.¹ While this crave is imperative and properly placed, same has thrown nature ‘out of balance’² and man has begun to grapple with a catalogue of environmental challenges whether in developing or developed countries. In order to strike a balance between preservation of the environment and promoting sound economy, many countries, including Nigeria³, have had to adopt

¹ The necessity for development appears antithetical to the demand for a clean environment. As it is observed, “environmental concerns can negatively affect the short term needs and objectives of human beings. States and individuals could be in a situation of disadvantage, if they neglect their economic development in favour of environmental protection. Especially in developing countries, the struggle of parts of the population against poverty is often considered as more important than environmental protection.” S Nijhawan, “Human Rights to a Clean Environment.” (Unpublished Essay) submitted to the Faculty of Law and Social Sciences (London: School of Oriental and African Studies, 2004) pp. 3-4, <www.subin.de/enviromen.pdf> accessed 14 January 2015.

² Erin Daly, ‘Constitutional Protection for Environmental Rights: The Benefits of Environmental Process’ (2012) 17 International Journal of Peace Studies 76, citing Justice Feliciano in the Philippine case of *Minors Oposa v Factoran Jr.* (1993) 224 SCRA 792.

³ In Nigeria, environmental consciousness did not begin much early. As of 1990 there were still complaints about the pace of the awareness of environmental problems in Nigeria. See, Jelili A Omotola, (ed.) *Environmental Laws in Nigeria including Compensation* (Lagos: Faculty of Law, University of Lagos, 1990) 201. Until 1988 when the Federal Environmental Protection Agency Decree was promulgated, there was no distinct environmental regulatory regime in Nigeria. In fact, it was the national environmental emergency situation i.e. the discharged of imported containers of toxic waste product in Koko in 1988 that led to the promulgation of the Federal Environmental Protection Act. Martin Joe Ezeudu, “Revisiting Corporate Violations of Human Rights in Nigeria’s Niger Delta Region: Canvassing the Potential Role of the International Criminal Court” (2011) 11 African Human Rights Law Journal 36. Apart from scanty legislative instruments, legal discourse on the Nigerian environment too was rare until 1988 when the Faculty of Law of the University of Ibadan organized a conference on Environmental Law as part of the activities marking the 40th anniversary celebration of the University. See the Introduction to the book, Folarin Shyllon, *The Law and the Environment in Nigeria* (Ibadan: UI Press, 1989).

several approaches - legislative⁴, ministerial⁵, political and judicial to address the evolving environmental concerns. Thus, human rights advocates⁶ have found the need to extend the frontiers of human rights campaign by seeking for the recognition and enforcement of an emerging right referred to as environmental right, particularly to provide a quality, adequate and satisfactorily⁷ safe environment for human living. Though

⁴ Several environmental legislations exist in Nigeria, some of them enacted in the hope of curtailing the rising temple of environmental degradation. Examples are the Environmental Impact Assessment Act Cap E.12 Laws of the Federation of Nigeria (LFN) 2004, Federal Environmental Protection Act Cap F.10 LFN 2004, Harmful Wastes (Special Criminal Provisions, etc) Act 1988, and National Environmental Standards and Regulations Enforcement Agency (Establishment) Act 2007.

⁵ There is in Nigerian, both at the Federal and State levels, ministries of environment as well as departments, boards, agencies, commissions, etc. specially established to monitor the environment.

⁶ In fact, according to Boyle, a chief proponent of right to the environment, the nexus between the environment and human rights “amounts to ‘greening’ human rights law.” See Alan Boyle, “Human Rights or Environmental Rights? A Reassessment” (2006) 18(3) *Fordham environmental Law Review* (2006) 18(3) 472, <<https://ir.lawnet.fordham.edu/cgi/viewcontent.cgi?article=1634&context=elr&htt>> accessed 4 February 2024. See also, The Ksentini Report (Sub Commission of the United Nations Commission on Human Rights) UN. Doc. E/CN.4/sub.2/1989/C23 (1989). According to Ako, “The Ksentini Report offers what may be the broadest definition, or better still, components, of environmental rights. It suggests that the possible components of substantive human rights or perhaps several rights to the environment can be seen in one source that sets out no less than fifteen rights related to environmental quality.” R. Ako, “The Judicial Recognition and Enforcement of the Right to Environment: Differing Perspectives from Nigeria and India” (2010) 3 *NUJS Law Review* 426. These include (a) Freedom from pollution, environmental degradation and activities that adversely affect the environment or threaten life, health, livelihood, well-being or sustainable development; (b) protection and preservation of the air, soil, water, sea-ice, flora and fauna, and the essential processes and areas necessary to maintain biological diversity and ecosystems; (c) the highest attainable standards of health; (d) safe and healthy food, water and working environment; (e) adequate housing, land tenure and living conditions in a secure, healthy and ecologically sound environment; (f) ecologically sound access to nature and the conservation and the use of nature and natural resources; (g) preservation of unique sites, and (h) enjoyment of traditional life and subsistence for indigenous peoples. Thus, para. 2 of the Draft Principles on Human Rights and the Environment E/CN.4/Sub.2/1994/9, Annex I (1994), which provides that “All persons have the right to a secure, healthy and ecologically sound environment” and that “this right and other human rights, including civil, cultural, economic, political and social rights, are universal, interdependent and indivisible” was a follow up of the Ksentini Report.

⁷ Article 24 of the African Chapter on Human and People’s Rights OAU Doc. CAB/LEG/67/3 rev. I.L.M. 58 (1982) provides that “all peoples shall have the right to a generally satisfactory environment favourable to their development.” See

laudable this project is, it is not absolved of controversies, challenges or even confusion both real and imagined in the attempt to insist on a right to clean, safe and healthy environment.

2. THEORETICAL ASPECT OF THE RIGHT TO CLEAN, SAFE AND HEALTHY ENVIRONMENT

2.1 Understanding the term *Environment*

Part of the challenges facing the recognition and the enforcement of the right to a clean environment anywhere stems from the intricate nature of the term ‘environment’ itself. Thus, as a corollary to the discussion on the concept of the right to clean environment, it is imperative to start with what the term *environment* connotes. It has been said that ‘the environment may encompass everything, and almost everything that happens in society can implicate the environment.’⁸

As simple as the term seems, the conceptual underpinnings are not devoid of divergence. While some see the environment from human right angle (anthropocentric), others see the right to the environment as right for the environment itself (ecocentric). Besides, the term ‘environment’ is inherently broad and neutral⁹ with diverse synonyms such as *nature*, *earth*, *ecology*,¹⁰ *ecosystem*¹¹, *biosphere*,¹² *biodiversity*,¹³ etc.

generally K. S. A. Ebeku, ‘The Right to a Satisfactory Environment and the African Commission’ (2003) 3 African Human Rights Law Journal 149-166.

⁸ Daly (n 2) 73.

⁹ PE Taylor, ‘From Environmental to Ecological Human Rights: A New Dynamic in International Law?’ (1998) 10 Georgetown International Environmental Law Review 309, 360.

¹⁰ Encyclopedia of Earth states “an academic discipline, such as mathematics or physics, although in public or media use, it is often used to connote some sort of normative or evaluative issues...more properly ecology is used only in the sense that it is an academic discipline, no more evaluative than mathematics or physics. When a normative or evaluative term is needed then it is more proper to use the term ‘environmental,’ i.e., ‘environmental quality,’ or environmentally degrading.” Hall, Charles, Judith S. Weis, *Ecology* in Cutler J. Cleveland (ed.) *Encyclopedia of Earth* (Washington, D.C.: Environmental Information Coalition, National Council for Science and the Environment, 2009) <<http://environment-ecology.com/what-is-ecology/75-ecology.html>> accessed 4 February 2024.

¹¹ The Convention on Biological Diversity defines ‘ecology’ to mean “a dynamic complex of plant, animal and micro-organism communities and their non -living environment interacting as a functional unit.” See article 2 of the Convention on Biological Diversity, opened for signature 5 June 1992, 1760 UNTS 79 (entered into force 29 December 1993).

¹² This has been defined as the biological component of earth systems which also includes the lithosphere, hydrosphere, atmosphere and other ‘spheres’ (e.g.,

The meaning of the term is also coloured by some social, economic or political considerations in certain circumstances. For instance, some have linked environmental problems to the improper distribution of natural resources which is creating tension in the environment.¹⁴ The term, therefore, does not lend itself to the exclusive preserve of any particular field of learning in underscoring an acceptable meaning. Environmental scientists, environmental lawyers, analysts and commentators all have equal challenge in the theoretical voyage into the ambit of the term ‘environment.’ According to Dupuy and Viñuales¹⁵:

“A first question that arises when we attempt to understand the object of international environmental right law is whether the term ‘environment’ refers or can be pinned down to a single concept or meaning. The term ‘environment’ pervades scientific, political and media discourse and, yet its meaning remains unclear. As with the concept of ‘time’ of which Augustine said that we know what it means so long as we are not asked for a definition, the term ‘environment’ is as simple to understand intuitively as it is difficult to circumscribe precisely.”

The fact that the term lends itself to diverse interpretations has been cited as one of the major challenges facing the judicial enforcement and institutionalisation of the right. According to Daly:

“Constitutionally enshrined environmental rights are particularly challenging for courts for a number of reasons, many of which flow from the lack of certainty about what the “environment” actually entails and how a meaningful conception of the environment can be incorporated into the practice of constitutional adjudication.”¹⁶

cryosphere, and anthroposphere, etc.). The biosphere includes all living organism on earth, together with dead organic matter produced by them.” See David M. Gates, Biosphere, Britannica<<https://www.britannica.com/science/biosphere>> accessed 4 February 2024.

¹³ The word ‘biodiversity’ is a contracted version of “biological diversity.” The Convention on Biological Diversity defines it as “the variability among living organisms from all sources including *inter-alia*, terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are a part...” See n11, art. 2.

¹⁴ Ashwin Kumar, ‘Ecological Environment: The Sociological Perspective’ (2005) 10 (2) Journal of Applied Social Science 101.

¹⁵ Pierre-Marie Dupuy and Jorge E., ‘Viñuales, *International Environmental Law: A Modern Introduction*’ (Cambridge University Press 2015) 24.

¹⁶ Daly n2, 73.

The question therefore is: what environment do we mean whenever there is reference to the phrase *environment*, and by extension, the *right to clean, safe and healthy environment*? Understanding what *environment* means is critical to whatever right that is attached to the environment. For instance, the environment has been defined as “everything which surrounds spatial entity, abiotic or alive.”¹⁷ In the Oxford Dictionary of Ecology, the term ‘environment’ is defined as: “[t]he complete range of external conditions, physical and biological, in which an organism lives. The *environment* also includes social, cultural, and (for humans) economic and political considerations, as well as the more usually understood features such as soil, climate, and food supply.”¹⁸

The Supreme Court of Chile had this to say on the environment:

“[T]he environment, environmental heritage and preservation of nature, of which the Constitution speaks and which it secures and protects, is everything which naturally surrounds us and that permits the development of life, and it refers to the atmosphere as it does to the land and its waters, to the flora and fauna, all of which comprise nature, with its ecological systems of balance between organisms and the environment in which they live.”¹⁹

In the same vein, the New Zealand Environment Act of 1986 defines the environment as including:

(a) ecosystems and their constituent parts including people and communities; and (b) all natural and physical resources; and (c) those physical qualities and characteristics of an area that contribute to people’s appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes; and (d) the social, economic, aesthetic, and cultural conditions which affect the matters stated in paragraphs (a) to (c) or which are affected by those matters.²⁰

¹⁷ Dupuy and Viñuales, n15, 24 citing F. Ramade, ‘Dictionnaire Encyclopedique de l’ecologie et des Sciences de l’environnement’ (Dunod 2002) 279.

¹⁸ Dupuy and Viñuales, n15, 24 citing Michael Allaby, ‘Oxford Dictionary of Ecology’ (3rd edn, Oxford University Press 2005) 154.

¹⁹ *Pedro Flores v Codelco*, División Salvador (1988) Rol. 2.052.

²⁰ Section 2 of the New Zealand Environmental Act 1986.

To some scholars, the environment constitutes “an object of religious, cultural, and historical importance”²¹, while to others, it is “the physical landscape of a people's history and future.”²² From the above, it is apparent that though the definition of the term varies from place to place, there is a common denominator. That is, the term *environment* means more than the ecosystem - it includes everything in it. It is a description of the entire way of life of the people and people may not meaningfully enjoy full happiness if removed from what they understand as their environment.

2.2 The Concept of the Right to Clean Environment

Besides the challenge of ascertaining what the environment itself entails, there is also the more complex conceptual difficulty of underscoring the import of the various phrases which have been employed in describing the relationship between the environment and human rights being described in this work as the right to clean environment. The meaning of the phrases such as the ‘right to clean environment’ or the term ‘environmental human right’²³ are not delimited by any known human right or environmental law instrument

²¹ Daly, n2 citing *Advocate Prakash Mani Sharma for Pro Public v His Majesty Government Cabinet Secretariat and others* (1995) WP 2991(Nepal Supreme Court Joint Bench 1997.06.09).

²² See the opinion of the Kenyan High Court in the case of *Ogiek People v District Commissioner* (1999) Case No. 238/1999. In this case, the plaintiffs are the indigenous people of Ogiek Community in Kenya. They sought declarations and orders that their eviction from Tinet Forest by the Government (acting by the provincial administration) contravened their rights to the protection of the law, not to be discriminated against, and to reside in any part of Kenya, having lived in Tinet Forest since time immemorial. Though the court refused plaintiffs’ claim in the overall interest of the Kenyan people as the Ogiek people were continuing to exploit natural resources of the Tibet forest indiscriminately the court found that an environment could be a physical landscape of a people’s history and future.

²³ These rights can be both substantive and procedural. See Human Right-Based Approach to Health and Environment: Report of a Regional Seminar, by World Health Organization, Bangkok, Thailand, 20-21 August 2007, p.13 <<https://iris.who.int/bitstream/handle/10665/205298/B3222.pdf?sequence=1&isAllowed=y>> accessed 4 February 2024 (hereafter, Human Right-Based Approach to Health and Environment). It is generally agreed amongst authors that there is no international agreement as to what environmental human rights are; but they can be broadly grouped into three areas i.e., “the right to clean and safe environment; the right to act to protect the environment; the right of information, to access to justice, and to participate in environmental decision making.” Alero T Akujobi, ‘Human Rights: The Environment and Sustainable Development in Nigeria’ in MOU Gasiokwu, (edn), *Ecology: Concept, Politics, and Legislation* (Chenglo Books, 2013) 464.

whether international, regional or domestic.²⁴ However, these phrases have emerged and have been accepted as relating to the nexus between human rights and the environment.²⁵ Thus, in most discussions on the relationship between human rights and the environment, several terminologies and adjectives have been employed to denote the meaning of the concept. Some of these terms are ‘environmental rights,’²⁶ ‘fundamental environmental rights,’²⁷ ‘right to healthy’²⁸ or ‘clean’²⁹ or ‘quality’³⁰ or ‘adequate’³¹ environment’, etc. Most of the times,

²⁴ As rightly identified by Weston and Bollier, “on the global plane, no treaty provides for a human right to environment explicitly in either its autonomous or derivative form.” See BH Weston, and DA Bollier, ‘Regenerating the Human Right to a Clean and Healthy Environment in the Commons Renaissance’ 14, <<https://www.ritimo.org/IMG/pdf/Regenerating-Essay-Part1.pdf>> accessed 16 August 2022.

²⁵ The struggle of linking human right with the human environment arose majorly as a result of the growing environmental concern. This is because “human rights law seeks to ensure that environmental conditions do not deteriorate to the point where the substantive right to health, the right to a family, right to life, the right to culture, and other human right are seriously unpaired.” D Shelton, ‘Human Right and Environment: What Specific Environmental Rights have been Recognized?’ (2008) 35 (1) Denver Journal of International Law and Policy 129.

²⁶ Shelton uses the term ‘environmental rights’ to refer to “any proclamation of a human right to environmental conditions of a specified quality.” D Shelton, ‘Developing Substantive Environmental Rights’ (2010) 1 (1) Journal of Human Rights and the Environment 89.

²⁷ James R May and Erin Daly, ‘Vindicating Fundamental Environmental Right Worldwide’ (2009) Oregon Review of International Law 364-440. Shelton has always referred to these rights simply as ‘environmental rights.’ See generally, Shelton n26, 89-120.

²⁸ Principle 10 of the Rio Declaration on Environment and Development, UN Doc. A/CONF 151/26 (Aug. 12, 1992), United Nations Conference on Environment and Development, June 3-14, 1992, Rio de Janeiro, Brazil, (hereafter referred to as Rio Declaration) which states that human beings are “entitled to a healthy and productive life in harmony with nature.” See also Art. 11 of the Additional Protocol to the American Convention on Human Right in the Area of Economic, Social and Cultural Right, Nov. 14, 28 ILM 156 which guarantees the right to a healthy environment.

²⁹ The adjective ‘clean’ as qualifying the environment has provoked certain scholars to ask if there is any right to clean environment at all. See generally, Nijhawan, n1.

³⁰ See Principle 1 of the Stockholm Declaration of the United Nations Conference on the Human Environment, (New York, 1973), UN Doc. A/CONF.48/14/Rev.1, which states that “Man has the fundamental right to freedom, equality and adequate conditions of life, in an *environment of a quality* that permits a life of dignity and well-being.” According to Shelton “Principle 1 of the *Stockholm Declaration* established a foundation for linking human rights, health, and environmental protection...” Dinah Shelton, ‘Human Rights, Health & Environmental Protection: Linkages in Law & Practice’ (2007) 1 Human Rights and International Legal Discourse 9.

when these terms are used in legal instruments or discourses, they are intended to explain the relationship between the environment and human rights,³² or those rights described as fundamental rights in the Constitution.³³ According to Rodriguez-Rivera:³⁴

“There is the issue of the quality of environment involved in the right to a satisfactory environment. As yet, there is no agreement on the proper descriptive adjective; some of the adjectives employed by various authors and instruments include: healthy, healthful, adequate³⁵, satisfactory, decent, clean, natural, pure, ecologically sound, balanced and viable. Even so, it has been questioned whether it is realistic to have a precise minimum standard of environmental quality that allows for a life of dignity and well-being, given the scientific uncertainty surrounding the issue.”

May and Daly observe that:

“Adjudicating constitutionally entrenched environmental rights comes with certain unavoidable challenges. New concepts and vocabulary need to be developed. Does the noun “environment” mean human environment, natural environment, or both? And which adjective to choose: quality,” “healthful,” “clean,” “adequate,” or something else? What does a fundamental right to a quality environment entail?”³⁶

³¹ See the Preamble to the Convention on Access to Information, Public Participation in Decision making and Access to Justice in Environmental Matters, June 25, 1995 2/U.N.T.S. 447 (hereafter referred to as Convention on Access to Information) which states expressly that “Every person has the right to live in an environment adequate to his or her health and well-being.”

³² Shelton n26, 89.

³³ See for instance, Chapter 4 of the Constitution of the Federal Republic of Nigeria 1999 (as amended).

³⁴ Ebeku, citing EL Rodriguez-Rivera ‘Is the Human Right to Environment Recognized under International Law? It Depends on the Source’ (2001) Colorado International Environmental Law and Policy 1.

³⁵ Okorodudu-Fubara, particularly expresses the view that ‘the requirement that environment must be “adequate for [human] health and well-being” is extremely vague.’ M Okorodudu-Fubara, *Law of Environmental Protection* (Caltop Publications, 1998) 80.

³⁶ May and Daly, n27, 370-371. Weston and Bollier also have this to say: “we use the phrase ‘clean and healthy environment’ to encapsulate the numerous adjectives that, alone or in combination, are used to identify or define this right, e.g., ‘adequate,’ ‘decent,’ ‘balanced,’ ‘biodiverse,’ ‘resilient,’ ‘safe,’ ‘sustainable,’ and ‘viable,’ in addition to ‘clean’ and ‘healthy.’ In no way, however, should this or other abbreviated usages (e.g., ‘human right to environment,’ ‘right to environment’) be interpreted to diminish the right from its fullest protective

As confusing as these adjectives may be (and even in the absence of any qualification of the environment), it is apparent that an environment suitable³⁷ for human living is the focus of every draftsman, jurist, legal commentator, or human right activist in the pursuit of human right to the environment. For instance, the Supreme Court of Montana³⁸ faced with the task of elucidating the implications of a right to a specified environmental quality in the case of *Montana Environmental Information Center et. al. v. Department of Environmental Quality*³⁹ refused to be carried away by the description qualifying the word “environment” in the Montana Constitution. Article II, Section 3 of the Montana Constitution⁴⁰ provides in part that: “All persons are born free and have certain inalienable rights. They include the right to a clean and healthful environment.”

In this case, the contention of the plaintiff, *inter-alia*, was that part of the Montana Constitution violated by the legislatures when they amended a State law to provide a blanket exception to requirements governing discharges from well water without regard to the degrading effect that the discharges would have on the surrounding or recipient environment.⁴¹ The Court held that:

“... the right to a clean and healthful environment is a fundamental right because it is guaranteed by the Declaration of Rights found at Article II, Section 3 of Montana’s Constitution, and that any statute or rule which implicates that right must be strictly scrutinized and can only survive scrutiny if the State establishes a compelling state interest and that its action is closely tailored to effectuate that interest and is the least onerous path that can be taken to achieve the State’s objective.”⁴²

meaning.” BH Weston, and D Bollier, ‘Toward a Recalibrated Human Right to a Clean and Healthy Environment: Making the Conceptual Transition’ (2013) 4 (2) *Journal of Human Rights and the Environment* 117.

³⁷ We are not unmindful of the fact that even the adjective “suitable” could raise sufficient linguistic questions as any other adjective.

³⁸ This is a state in the Western United States of America.

³⁹ (1999) 296 Mont 207, 988.

⁴⁰ See Montana Constitutional Convention, Vol. IV at 1200, 1 March 1972.

⁴¹ For a fuller discussion see generally, BH Thompson Jr., ‘Constitutionalizing the Environment: The History and Future of Montana’s Environmental Provisions’ (2003) 64 *Montana Law Review* 157-198, <<https://scholarworks.umt.edu/cgi/viewcontent.cgi?article=2290&context=mlr>> accessed 4 February 2024.

⁴² *Ibid*, *Supra* n39.

The holding of the Court was predicated upon what the court felt was the intentions of the drafters of the Constitution as regard the scope of environmental quality guaranteed by the Constitution. The Court considered the drafting history of the constitutional amendment and noted that the original draft had no adjectives preceding the word environment. The Court did not allow itself to be restricted by the adjectives: 'clean' and 'healthful' describing the kind of environment anticipated by the Constitution. The Court recalled a delegate involved in the drafting as explaining that descriptive adjectives such as 'healthful' or 'unsoiled' were not initially included in the Montana Constitution. It was because the majority felt that the use of the word 'healthful' would create room for environment polluters. The court was of the view that, in excluding water discharges from well tests, the statute makes it impossible for the State to "prevent unreasonable depletion and degradation of natural resources" as required in the Montana Constitution, an act that could undermine the fundamental right of the Montana people to clean and healthy environment. The Court stated further:

"We have not had prior occasion to discuss the level of scrutiny which applies when the right to a clean and healthful environment guaranteed by Article II, Section 3 or those rights referred to in Article IX, Section 1 are implicated. Nor have we previously discussed the showing which must necessarily be made to establish that rights guaranteed by those two constitutional provisions are implicated. However, our prior cases which discuss other provisions of the Montana Constitution and the debate of those delegates who attended the 1972 Constitutional Convention, guide us in both respects...we conclude that the right to a clean and healthful environment guaranteed by Article II, Section 3, and those rights provided for in Article IX, Section 1 were intended by the constitution's framers to be interrelated and interdependent and that state or private action which implicates either, must be scrutinized consistently. Therefore, we will apply strict scrutiny to state or private action which implicates either constitutional provision."⁴³

⁴³ See the text of the Judgment at <<https://casetext.com/case/meic-v-dep-of-env-quality>> accessed 4 February 2024. It is obvious from the above that the framer of

According to Boyle:⁴⁴

“Undoubtedly, definitional problems are inherent in any attempt to postulate environmental rights in qualitative terms. Surely, what constitutes a satisfactory, decent, viable, or healthy environment is bound to suffer from uncertainty and ambiguity. Arguably, it may even be incapable of substantive definition, or prove potentially meaningless and ineffective, like the right to development, and may undermine the very notion of human rights.”⁴⁵

It is also imperative to examine whether some of these terms e.g., ‘right of the environment,’ ‘right to the environment,’ ‘environmental rights’ and the ‘right to clean environment’ mean one and the same thing. Some suggests that there is a difference between the “right of the environment” and “right to the environment.” Citing Rodriguez–Rivera, Ebeku⁴⁶ reiterated:

“The right of the environment is founded upon the notion that the environment possesses rights derived from its own intrinsic value, separate and distinct from human use of the environment.”

In other words, the environment itself has certain rights for itself that should be preserved. This is the view of those who see the environment from eco-centric standpoint. However, May and Daly⁴⁷ admit that “definitional issues abound, including whether ‘environment’ is anthropogenic or should include eco-centric interests such as biodiversity...” Cullet on the other hand sees environmental protection “not only as a meaningful instrument for the realization of all human rights *but also as a goal in itself*.”⁴⁸

the Montana Constitution being aware of the nature of problems definitions can cause decided to avoid qualifying the word ‘environment’ in the original draft.

⁴⁴ Ebeku, citing A Boyle, ‘The Role of International Law in the Protection of the Environment’ in A Boyle & M Anderson (eds.), *Human Rights Approaches to Environmental Protection* (Oxford University Press, 1996).

⁴⁵ Cullet, emphasizes the point that “The formulation of the right as a plain ‘right to environment’ is no more imprecise than a right to a healthy or clean environment as these qualifying adjectives are themselves vague and subject to divergent interpretations.” P Cullet, ‘Definition of an Environmental Right in a Human Right Context’ (1995) 13 Netherlands Quarterly of Human Rights 30.

⁴⁶ See Ebeku, n7, 150.

⁴⁷ May and Daly, n27, 380-381.

⁴⁸ Emphasis mine. See Cullet, n45, 33. The right of environment confers right directly on the environment-as the best way of protecting the environment. See Ebeku, n7, 150.

The term ‘environmental right,’ on the other hand, is seen as encapsulating both the substantive and the procedural human rights necessary for the implementation and realisation of the right to a satisfactory environment.⁴⁹ Boyle’s⁵⁰ analysis of the right is more embracing. According to him:

“Environmental rights do not fit neatly into any single category or “generation” of human rights. They can be viewed from at least three⁵¹ perspectives, straddling all the various categories or generations of human rights.”

Some others see the environment as “an independent value and needs a strict protection as other commonly agreed value such as right to property or the right to life and health.”⁵² Mushkat,⁵³ on his part identifies a distinction between ‘environmental human right’ and ‘ecological right.’ According to her:

“A degree of discord may be observed between those who focus on environmental human rights in the narrow sense of the term and those who seek to promote the broader idea of ecological rights. This stems from the intellectual tension, real or apparent, between the anthropocentric and ecocentric philosophical perspectives. The former conceives the environment whether explicitly or implicitly, as a mere good which serves to satisfy human needs and possess no intrinsic value in itself. ... The ecological viewpoint posits that the environment is a condition of all life on earth. It follows that limitation on individual human freedom may be required in order to protect nature, which encompasses the human species.”

⁴⁹ See Rodriguez-Rivera, cited in Ebeku, n7,150.

⁵⁰ Boyle, n6, 1.

⁵¹ The first perspective is that “civil and political rights can be used to give individuals, groups and nongovernmental organizations (NGOs) access to environmental information, judicial remedies and political processes. On this view their role is one of empowerment: facilitating participation in environmental decision-making and compelling governments to meet minimum standard of protection for life, private life and property from environmental harm. A second possibility is to treat a decent, healthy or sound environment as an economic or social right, comparable to those whose progressive attainment is promoted by the 1966 UN Covenant on Economic Social and Cultural Rights. Ibid.

⁵² A Anderson, and T Kolk, ‘The Role of Basic Rights in Environmental Protection’ <https://www.juridicainternational.eu/public/pdf/ji_2003_1_140.pdf>, accessed 13 August 2022.

⁵³ Rhoda Mushkat, ‘Contextualizing Environmental Human Rights: A Relativist Perspective’ (2009) 26 Pace Environmental Law Review 122.

Given that most instruments creating or alluding to the right to the environment do not set out the meaning and scope of the right, and given that various instruments qualify the right using diverse languages and descriptions, some authors have fallen into the temptation of interpreting some of the terms as though they could represent different ideas. Having regard to the spirit behind the pursuit of human right within the context of the environment, it is safer to conclude that the terms such as 'environmental right,' 'right to environment,' 'right to clean environment,' etc. are all employed towards the objective of securing a habitable environment for man.⁵⁴ According to Onvizu,⁵⁵ "The right to a healthy environment is controversial, but scholars have attempted to link the environment to human rights." Some⁵⁶ are of the view that:

"Environmental rights are even broader as they include non-human phenomenal as well.⁵⁷ They have the potential to reach most matters affecting the human condition, including right to life, dignity, health, food, housing, education, work, culture, non-discrimination, peace and children's health,⁵⁸ as well as the health of the earth's water, ground, and air."

Other scholars⁵⁹ have exercised some care in dealing with the terms by delimiting the scope to avoid confusion. However, in arguing a case for eco-centric approach to the environment, Boyle appears to

⁵⁴ It is of paramount importance to note that the Preparatory Committee for the Stockholm Conference was given the recommendation "to draw up a declaration on the human environment dealing with the rights and obligations of citizens and governments with regard to the preservation of the human environment." See generally LB Sohn, 'The Stockholm Declaration on Human Environment' (1973) 14 *The Harvard International Law Journal* 425-426.

⁵⁵ W Onvizu, 'International Environmental Law, the Public's Health, and Domestic Environmental Governance in Developing Countries' (2005) 21 *American University International Law Review* 666.

⁵⁶ May and Daly are right when they state that "the purpose here is not to quibble about which adjective is most appropriate. Both authors use "quality" as the default and "adequate", "healthy", and "clean", generally 'except as applied to the constitutional nomenclature of a specific constitution.' See May and Daly, (n27) 371.

⁵⁷ May and Daly, *Ibid* citing T Hayward, 'Constitutional Environmental Rights' (2005)

⁵⁸ See May and Daly, *Ibid*. See also, ECOSOC, U.N. Commission on Human Rights, Sub-com. On Prevention of Discrimination and Protection of Minorities, Human Rights and the Environment, 248, U.N. Doc. E/EN4/Sub.12/1994/a (July 6, 1994) prepared by Fatma Zohra Ksentini.

⁵⁹ According to Weston and Bollier, "We use the phrase "clean and healthy environment" to encapsulate the numerous adjectives that, either alone or in various combination, are used to identify or define this right, e.g., "adequate," "decent," "ecologically balanced," "resilient," "sustainable," and "viable" in addition to "clean" and "healthy." Weston and Bollier, n24,1.

have compounded the dichotomy between *the right to the environment* and *environmental rights*. He asks:

“Should we continue to think about human right and the environment within the existing framework of human rights law in which the protection of human is the central focus - essentially a greening of the rights to life, private life and property - or has the time come to talk directly about environmental rights in other words a right to have the environment itself protected? Should we transcend the anthropocentric in favor of the eco-centric?”⁶⁰

Boyle appears to have used the term *environmental right* as if it relates to the right to have the environment itself protected. This is what others understand as the right to the environment. One may want to ask, therefore: is environmental right only about having “the environment itself protected? Is it strictly relating to the environment from eco-centric perspective? Is the protection of the environment strictly for the sake of the environment itself? When the environment is safe, is it only for the sake of nature? The answers to these questions are not in the affirmative. This is because the term *environmental rights* literally should connote a right derived from the environment and this right should be all inclusive. The result of environmental rights should be beneficial to both the environment and man.

It is a common ground that from the context in which some of these adjectives are used by scholars, environmental and human rights advocates agree that, broadly speaking, ecological or environmental rights suggest a connection between the environment and human rights. It can be suggested, therefore, that “by implication, environmental rights are akin in all respects to other rights that reflect morally justified individual demands.”⁶¹ To this extent, the meaning and scope of each of these terms should be limited to the context in which the author puts them as there appears to be no agreement as to what strictly each of these terms represent other than they represent a right to live in a suitable environment, the court being in a better position to determine the suitability of the environment in each case.

It is in this light that Justice Feliciano of the Philippine refused to see difficulty or complication in the interpretation of the phrase “a balanced and healthy ecology”. According to the jurist’s claims on the

⁶⁰ Boyle, n6, 3

⁶¹ Mushkat, n53, 122.

right to a *balanced and healthful ecology* can be founded on almost every wrong against the environment. He said:

“It is in fact very difficult to fashion language more comprehensive in scope and generalized in character than a right to ‘a balanced and healthful ecology’. The list of particular claims, which can be subsumed under this rubric appears to be entirely open-ended: prevention and control of emission of toxic fumes and smoke from factories and motor vehicles; of discharge of oil, chemical effluents, garbage and raw sewage into rivers, inland and coastal waters by vessels, oil rigs, factories, mines and whole communities; of dumping of organic and inorganic wastes on open land, streets and thoroughfares...”⁶²

The position, therefore, is that the right to clean environment is at the root of very breach committed against the environment.

3. DEFINING THE RIGHT TO CLEAN ENVIRONMENT

Admittedly, defining a term has been one of the most Herculean tasks in the field of law. But where definition becomes inevitable, it is irrelevant how much ink is spilled in attempting to proffer one.⁶³ It has been identified that the meaning of a word lies in its use in the language.⁶⁴ It may be true too that the meaning of a word is just more words that stand in for them.⁶⁵ However, it is not out of place if one considers the meaning of the term *environmental rights* (as if this subsumes other related terms) with the hope of arriving at a near universally acceptable definition, even though the term may be coloured, some of the time, by its contextual appearance. Trying to develop a general platform to cover the terms is to improvise a framework to ensure that each term does not have to depend on the

⁶² *Minors Oposa v. Factoran*, n2, 224.

⁶³ Arnold, has said that law for instance can never be defined with equal obviousness, however it should be said that adherence of legal instrument must never give up the struggle to define. See Arnold T., *The Symbol of Government*, 1935 p.36 cited in MI Jegede, ‘What’s Wrong with the Law?’ (1993) NIALS Annual Lecture Series 12 at 2.

⁶⁴ Jaime Nester, ‘Word-Meaning and the Contest Principle in the Investigations’ 245 <<http://wab.uib.no/ojs/index.php/agora-alws/article/view/2725/3174>> accessed 15 August 2022, citing Ludwig Wittgenstein, *Philosophical Investigation* (Blackwell Publishers 2002) 187.

⁶⁵ *Ibid.*

context in which it is used at all times but on the general notion of what it is accepted to mean.

The term “environmental rights” has raised a lot of dust and it is still generating more issues, moral, social, legal, and so forth, some of these issues having to do with the ambit of the entire idea of the linkage between human rights and the environment. It is, therefore, a complex term. Some authors rather embarking on the difficult task of proffering a definition have decided to draw inspiration from available relevant legal instruments as aid in elucidating the import of the term. Wet and Plessis state that:⁶⁶

“Environmental rights contained in domestic bills of rights and international human rights instruments often consist of a complex combination of legal obligations. Their interpretation tends to be a particularly challenging task. Arguably, this also holds true for the environmental right in section 24 of the Constitution of the Republic of South Africa Act, 1996 (Constitution). Fortunately, however, there is a growing body of public international law, as well as foreign domestic law, on which one may draw to render the abstract language of section 24 [of the South Africa Constitution] more concrete for judicial application.”

Why Wet and Plessis feel that public international laws and domestic laws may be helpful in clarifying the language of the South Africa Constitution relating to environmental rights provisions, it may even be more confusing in some other jurisdictions. This is because according to May and Daly “the almost complete lack of evidence of framers’ intent about environmental provisions reinforces the sense of

⁶⁶ Erik de Wet and Anél du Plessis, “The Meaning of Certain Substantive Obligations Distilled from International Environmental Rights in South Africa (2010) 10 *Africa Human Rights Law Journal* 346. They lament that the South African Constitutional Court has not yet had sufficient opportunity to clarify the meaning of section 24 of the South African Constitution. Section 24 of the South African Constitution, 1996 provides: “Everyone has the right [a] to an environment that is not harmful to their health or well-being; and [b]. to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that— i. prevent pollution and ecological degradation; ii. Promote conservation; and iii. Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.” *Ibid.* Wet and Plessis, however, draw inspiration from the way in which international human rights bodies (both universal and regional) have interpreted and applied the relevant provisions of the respective human rights instruments within their jurisdiction. *Ibid.*

randomness.”⁶⁷ It is thought, therefore, that it will rather be more rewarding if legislatures and drafters of Constitutions have a near-generally acceptable scholarly idea of what is *environmental rights* to aid in formulating environmental right provisions than to look forward to discordant legislative provisions, whether domestic or otherwise, for guidance.

Notwithstanding that these terms present a contextual conundrum (i.e., “the right to clean environment,” “environment human rights,” “environmental rights,” the right to healthy environment, etc.), all terms are used interchangeably⁶⁸ in this study as though all mean the same thing. However, it is desirable to underscore what they represent by way of definition.

Some scholars have made some attempts at defining the concept. According to MacDonald:

“[E]nvironmental rights are those rights related to environmental standards or protection that are safeguarded so as to benefit someone or something. That someone or something could be the environment itself, humans or combinations thereof. Environmental rights thus concern the right to protect human health and private or common property (including the “natural” environment) from damage or potential damage sourced through the environment.”⁶⁹

Otubu, on the other hand, states that:

“Environmental right ...[is the] right that gives human beings a primary right to a sustainable global environment. It has been defined as the right of individuals and peoples to an ecologically sound environment and sustainable management of natural resources conducive to sustainable development.”⁷⁰ The term

⁶⁷ See, May and Daly, n27, 376.

⁶⁸ For instance, Ebeku uses the term ‘right to a satisfactory environment’ to denote the three ramifications on human right to a satisfactory environment which he noted in his work. See Ebeku, (n7) 150.

⁶⁹ Karen E. MacDonald, ‘Sustaining the Environmental Rights of Children: An Exploratory Critique’ (2006) 18 (1) *Fordham Environmental Law Review* 7.

⁷⁰ J Razzaque, ‘Human Rights and the Environment: Developments at the National Level South Asia and Africa’ (2002) *Joint UNEP-OHCHR Expert Seminar on Human Rights and the Environment* 14-16 January 2002 Geneva, <https://www.researchgate.net/profile/Jona-Razzaque/publication/255967177_Human_Rights_and_the_Environment_The_National_Experience_InSouth_Asia_an_Africa/links/5771017808ae842225abfdb9/Human-Rights-and-the-Environment-The-National-Experience-InSouth-Asia-and-Africa.pdf> accessed 15 August 2023.

manages to be both elusive and controversial: elusive because there is no universal definition, controversial because many from the environmental sector define it from an eco-centric perspective (environment first) while the human rights constituency is predominantly anthropocentric (humans first).⁷¹

According to Alan Boyle, “Environmental rights, give environmental quality comparable status to the other economic and social rights...[and] would recognize the vital character of the environment as a basic condition of life, indispensable to the promotion of human dignity and welfare, and to the fulfillment of other human rights.”⁷²

It is imperative to note at this point that the terms “the right to clean environment,” “environmental human rights” and “environmental rights” or even the *right to healthy environment* may not mean exactly one and the same thing even though it is obvious that all terms relate to the relationship between the environment and human being. For instance, if attention must be given to the definition of the word ‘health’ by the World Health Organisation (WHO)⁷³ then not every clean environment in the strict sense of the word ‘clean’⁷⁴ denotes a healthy environment. WHO defines ‘health’ as “a complete state of physical, mental and social well-being, and not merely the absence of disease or infirmity.”⁷⁵

⁷¹ A Otubu, ‘Environment and Human Rights: An Overview of current Trends in Nigeria’ (2013) 2 The Nigerian Journal of Public Law 211.

⁷² Ayesha Dias, ‘Human Rights, Environment and Development: With Special Emphasis on Corporate Accountability’
<<https://hdr.undp.org/system/files/documents/ayesha-diaspdf.pdf>> accessed 15 August 2022.

⁷³ See the Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19-22 June 1946, which came into force on 7 April 1948. The issue of health as regard the determination of what is a safe environment cannot be brushed aside because “the right to health extends to the underlying determinants of health, which include a healthy environment.”

See The Report of a Regional Seminar by World Health Organization n. 23, 12.

⁷⁴ For instance, AS Hornby, *Oxford Advanced Learner’s Dictionary* (8th edn, Oxford University Press, 2010) defines *clean* as ‘not dirty.’

⁷⁵ See the Principle of the WHO Constitution at
<https://www.afro.who.int/sites/default/files/2017-07/constitution_of_health_en.pdf> accessed 15 August 2022. Though, a critic argues that the “WHO’s definition of *health* is utopian, inflexible, and unrealistic, and that including the word “complete” in the definition makes it highly unlikely that anyone would be healthy for a reasonable period of time. It also appears that ‘a state of complete physical mental and social well-being’ corresponds more to happiness than to health.” Niyi Awofeso, ‘*Re-defining ‘Health’*’ at

Several other generally accepted definitions of the word ‘health’ exist. Bircher⁷⁶ defines health as “a dynamic state of well-being characterized by a physical and mental potential, which satisfies the demands of life commensurate with age, culture, and personal responsibility.” Saracci⁷⁷ defines it as “a condition of well-being, free of disease or infirmity, and a basic and universal human right.” The Australian Aboriginal people generally have this to say about health: “...Health does not just mean the physical well-being of the individual but refers to the social, emotional, spiritual and cultural well-being of the whole community.”⁷⁸ Health can be “a whole of life view and includes the cyclical concept of life-death-life.”⁷⁹ The question therefore is: if the word ‘health’ connotes a state of healthiness, taking a bearing from the WHO’s definition, can there be a ‘healthy’ environment in that sense? And if we have a healthy or healthful environment, does this simply mean a clean environment? Most governments feel threatened by obnoxious fumes and smokes in the atmosphere (and do not have problem treating these situations as unhealthy) but not with noise⁸⁰ (suggesting that if the issue is that of noise alone, the environment is clean enough) even though both situations affect the health of man.

<<https://courses.sfcollege.edu/courses/398612/files/33934478/download?wrap=1>> accessed 15 August 2023.

⁷⁶ Niyi Awofeso, Ibid, citing J Bircher, *Towards a Dynamic Definition of Health and Disease* (Med. Health Care Philos, 2005) 335-341.

⁷⁷ Niyi Awofeso, Ibid citing R Saracci, The World Health Organization needs to Reconsider its Definition of Health (1997) BMJ 409-410.

⁷⁸ Final Report and Recommendations of the National Health and Medical Research Council-Promoting the Health of Indigenous Australians: A Review of Infrastructure Support for Aboriginal and Torres Strait Islander Health Advancement (NHMRC, 1996) part 2. This Report was, however, rescinded by the National Health and Medical Research Council on 24 March 2005. The Report now exists only for historical purposes.

⁷⁹ Niyi Awofeso, Ibid citing HG Nijhuis and LJG Van der Maesen, ‘The Philosophical Foundations of Public Health: An Invitation to Debate’ (1994) J. Epidemiol Community Health 1-3.

⁸⁰ Until around 1975 most governments viewed noise as a ‘nuisance’ rather than environmental problem let alone a human issue. Up till today, noise pollution is only redressable in Nigeria under the common law of tort. In Oregon, however, the word “unreasonable” which is used to qualify the word *noise* is “commonly defined as: “not conformable to reason, irrational, not governed or influenced by reason, immoderate, excessive, exorbitant, foolish, unwise, absurd, silly, preposterous, senseless and stupid.” See *State v Marker* (1975) 21 Or. App. 671, 675.

The definition by WHO may be aspirational yet it has the possibility of sharpening government policies on the environment if analysed within the context of environmental right. The protection of the environment is *sine qua non* for the enjoyment of other human rights including the right to health.⁸¹ This position has remained a major one at international level as a measure to put pressure on regional institutions and domestic governments to recognise environmental right.⁸²

4. THE NIGERIAN EXPERIENCE

The issue of the right to clean environment has not been robustly articulated in Nigerian courts. The first authority on the right to clean, safe and healthy environment in Nigeria is the famous Federal High Court case of *Mr. Jonah Gbemre and Shell Petroleum Development Company Nigeria Ltd and 2 Other.*⁸³ This authority, though very weak, has given that it is a lonely Federal High Court decision whose substance was not tested on appeal, has heightened the campaign for the recognition of the right to clean environment in Nigeria. Since then there has never been any scholarly discussion on the right to clean environment or on Chapter Two of the Constitution, or on social, economic and cultural rights in Nigeria without some pontifications on *Gbemre v SPDC.*⁸⁴ In this case, the Applicants alleged, *inter alia*, that the operation of the Respondents in continuing to flare gas in their community contaminated

⁸¹ Gabčíkovo-Nagymaros Project (Hung. v Slov.), 1997 I.C.J. 92 (Sept. 27) (separate opinion of Judge Weeramantry)

⁸² Brown Etareri Umukoro, 'Revisiting the Non-justiciability issue in Environmental Rights Dialogue in Nigeria' (2023) 25 (2) Environmental Law Review 105. <<https://doi.org/10.1177/14614529231168491>>.

⁸³ (Unreported) Suit no: FHC/B/CS/53/05.

⁸⁴ The following are examples: O Oluduro, 'Environmental Rights: A Case Study of the 1999 Constitution of the Federal Republic of Nigeria' (2010) 4 Malawi Law Journal 255-270; UJ Orji, 'Right to a Clean Environment – Some Reflections' (2012) 42 Environmental Policy and Law 4–5; EP Amechi, 'Litigating Right to Healthy Environment in Nigeria: an Examination of the Impacts of the Fundamental Rights (Enforcement Procedure) Rules 2009, in Ensuring Access to Justice for Victims of Environmental Degradation' (2010) 6 (2) Law, Environment and Development Journal 322-334; EO Ekhatior, 'Improving Access to Environmental Justice under the African Charter on Human and Peoples' Rights: The Roles of NGOs in Nigeria' (2104) 22 (1) African Journal of International and Comparative Law 63–79; T Emejuru, 'Human Rights or the Environment: Whither Nigeria' (2015) 35 Journal of Law, Policy and Globalization 19-27. See also ST Ebobrah, 'The Future of Economic, Social and Cultural Rights Litigation in Nigeria' (2007) 1 (2) CALS Review of Nigerian Law and Practice 108-124.

and polluted their environment and exposed them to several diseases including respiratory illnesses, asthma, cancer, increased premature deaths and also reduced crop yield on the land.⁸⁵ As a result, the applicants urged the Court to declare their right to pollution-free environment entrenched under the Constitution and the African Charter on Human and Peoples' Rights. The substance of the claim of the applicants was that the Constitutionally guaranteed fundamental rights to life and dignity of the human person provided in the Constitution and reinforced by the African Charter on Human and peoples' Right (Ratification and Enforcement) Act inevitably includes the right to clean and healthy environment.⁸⁶ All the reliefs of the applicants were granted.

The Judge has been highly commended for giving a purposeful interpretation to the fundamental rights contained in the Constitution and the African Charter. According to Ladan, "[t]his is a landmark judgment in the sense of application of fundamental human rights to an environmental case for the first time in Nigeria, consistent with the trend in other jurisdictions."⁸⁷ Some scholars feel that even though the Supreme Court is yet to pronounce on the case, *Gbemre v SPDC* gives the sign that the African Charter can ground a valid application for the enforcement of socio-economic and cultural rights in the Nigerian Courts.⁸⁸ The decision of the Federal High Court in *Gbemre v SPDC*, at the moment, is on appeal before the Court of Appeal. SPDC is contesting the use of fundamental rights enforcement procedure for redressing environmental claim instead of the common law procedure

⁸⁵ Brown E. Umukoro 'Gas Flaring, Environmental Corporate Responsibility and the Right to a Healthy Environment' in Festus Emiri & Gowon Deinduomo (eds), *Law and Petroleum Industry in Nigeria- Current Challenges* (Malthouse Press Ltd 2008) 49-64; Brown E. Umukoro, 'The Ogidigben EPZ Gas Project and the Environment: Health and Human Rights Implications' (2017) *Ajayi Crowther University Law Journal* 1-38.

<<https://aculj.acu.edu.ng/index.php/lj/article/download/14/16>>.

⁸⁶ See the text of the case in <http://climatecasechart.com/wp-content/uploads/sites/16/non-us-case-documents/2005/20051130_FHCBCS5305_judgment.pdf>, accessed 15 August 2022 for the text of the judgment.

⁸⁷ M. T. Ladan, 'A Critical Appraisal of Judicial Attitude towards Environmental Litigation and Access to Environmental Justice in Nigeria, 20 being a text of paper presented at the 5th IUCN Academy Global Symposium, Rio de Janeiro, Brazil, 2007.

⁸⁸ S. T. Ebobrah, 'The Future of Economic, Social and Cultural Rights Litigation in Nigeria' (2007) 1 (2) *CALS Review of Nigerian Law and Practice* 122.

of writ of summons which allows for scientific proof.⁸⁹ This is so because the burden of proof of environmental degradation is heavier on the applicant under the common law procedure.⁹⁰

There have been pockets of scepticisms shrouding *Gbemre's* case, particularly, having regard to the provisions of sections 6(6) (c) and 20 of the Nigerian Constitution. Section 20 of the Constitution provides that “the State shall protect and improve the environment and safeguard the water, air and land, forest and wildlife of Nigeria.” The provision of section 20 is under Fundamental Objectives and Directive Principles of State Policy (FODPSP). By section 6(6) (c) of the same Constitution, FODPSP are not enforceable. Section 6(6) (c) provides:

“The judicial powers vested in accordance with the foregoing provisions of this section ...shall not except as otherwise provided by this Constitution, extend to any issue or question as to whether any act of omission by any authority or person or as to whether any law or any judicial decision is in conformity with the Fundamental Objectives and Directive Principles of State Policy set out in Chapter II of this Constitution...”

This section has been the major setback to the recognition and enforcement of all socio-economic rights as well as the right to clean, safe and healthy environment in Nigeria. The Court in *Gbemre's* case was exceptionally courageous by giving a broader interpretation to the provisions of the Constitution (which guarantee the right to life and the dignity of the human person) to include the right to live in a clean, safe and healthy environment. However, it has been correctly observed that “broadly interpreting the right to life to include the protection of environmental rights is not yet an established legal principle in Nigeria.”⁹¹ This leads us to why *Gbemre's* case has not opened up the way

⁸⁹ Emmanuel Addeh, ‘Shell Challenges Judgement Ordering Halt to Gas Flaring in N’Delta Community’ (Thisday, 26 December, 2021) <<https://www.thisdaylive.com/index.php/2021/12/29/shell-challenges-judgement-ordering-halt-to-gas-flaring-in-ndelta-community>> accessed 5 February 2024.

⁹⁰ B E Umukoro and M. O. Omozue, ‘Prosecuting Environmental Pollution Cases in Nigeria: The Head of a Carmel Passing through the Eye of a Niddle’ (2022) 15 (2) *Baltic Journal of Law & Politics*, pp. 2016-2029. <<https://versita.com/menuscrypt/index.php/Versita/article/view/1368>>.

⁹¹ R. Ako, ‘Promoting Environmental Justice in Developing Countries: Thinking Beyond Constitutional Environmental Rights’ p. 7 being a text of paper presented at the 3rd UNITAR-Yale Conference on Environmental Governance and Democracy, 5-7 September 2014, New Haven, USA.

to right-based environmental justice in Nigerian. Apart from the uneasiness which trailed the political environment after the judgment, some constitutional lawyers feel that only the Constitution should protect the calibre of rights envisaged in Article 24 of the African Charter and that section 6(6) (c) of the Nigerian Constitution having made mockery of section 20 of the same Constitution, there exists no further basis for upholding environmental rights in Nigeria.⁹² Others wonder why the Court did not make a statement on section 20 of the Constitution. As such, *Gbemre* not having been directly predicated on the Constitution appears to lack necessary force of law associated with fundamental rights provisions.

In summary, it is worthy of note that the Court in *Gbemre's* case refused to be carried away by any conceptual, theoretical, technical or constitutional limitation which has always been canvassed against the enforcement of the right to clean environment in jurisdictions where the right is inexplicit. No court has followed *Gbemre's* path since over 17 years of the decision. However, the decision of the Court of Appeal is being awaited. The outcome of the appeal will leave a very significant impact on environmental rights' dialogue and advocacy in Nigeria.

In the more recent case of *Centre for Oil Pollution Watch v. Nigerian NNPC*⁹³ the Appellant was a Non-Governmental Organisation [NGO] involved in the reinstatement, restoration and remediation of environments impaired by oil spillage/pollution; it also ensured that environments are kept clean and safe for human and aquatic live/consumptions. It sued the Respondent at the Federal High Court, Lagos, wherein it claimed *inter alia* for the:

1. Reinstatement, restoration and remediation of the impaired and/or contaminated environment in Acha autonomous community of Isukwuato Local Government Area of Abia State of Nigeria particularly the Ineh and Aku Streams, which environment was contaminated by the oil spill complained of.
2. Provision of portable water supply as a substitute to the soiled and contaminated Ineh/Aku Streams, which are the only and/or major source (sic) of water supply to the community.

⁹² The decision in *Gbemre's* case discloses a strong desire on the part of the trial court to do environmental justice notwithstanding existing technical hitches.

⁹³ (2013) LPELR-20075(CA).

The Respondent on its part contended that the Appellant lacked the requisite *locus standi* to institute or maintain the action as presently constituted, as the Appellant had neither suffered damage nor been affected by the injury allegedly caused to the Acha Community. The Court of Appeal in dismissing the appeal of the Appeal Court had this to say:

“The position of the law may have changed to cloak ‘pressure groups, NGOs and public-spirited taxpayers’ with *locus standi* to maintain an action for public interest, as argued by the Appellant, but that is in other countries, not Nigeria. The truth of the matter is that there is a remarkable divergence in the jurisprudence of *locus standi* in jurisdictions like England; India; Australia, etc., and the Nigerian approach to same, which has not evolved up to the stage, where litigants like the Appellant can ventilate the sort of grievance couched in its Amended Statement of Claim. As it is, the position of the law on the subject is that the plaintiff must show [enough] interest in the suit.”

On appeal to the Supreme Court, the apex court reversed the decision of the Court of Appeal and held that “public spirited individuals and organizations can bring an action in courts against relevant public authorities and private entities to demand their compliance with relevant laws and to ensure the remediation, restoration and protection of the environment.”⁹⁴ Thus, the Acha community was denied access to justice on the basis of *locus standi*. The court again failed to look at the issue of the right to live in a clean, safe and healthy environment in Nigeria. As it stands in Nigeria today, the government is not under any compelling duty to improve on the environment as there is no enforceable right to clean, safe and healthy environment. Accordingly, more depends on the judiciary in the struggle for the enforceability of environment rights in Nigeria. A vibrant judiciary must seek alternative pathways to environmental justice.

5. THE IMPLICATION OF THE UN GENERAL ASSEMBLY RESOLUTION ON THE RIGHT TO THE ENVIRONMENT

The 28 July 2022 is a very remarkable day for the struggle for the recognition of the right to clean environment as a universal human right. The United Nations General Assembly finally categorically

⁹⁴ *Centre for Oil Pollution Watch v. Nigeria NNPC* (2019) 5 NWLR (Pt1666) 518

recognised that a “clean, healthy and sustainable environment is a universal human right.”⁹⁵ The UN General Assembly with 161 votes and eight absentees adopted a significant resolution calling upon States, international organisations, and business enterprises to intensify efforts to ensure a healthy environment for all. This, no doubt, is a historic resolution. The Resolution recognises that “the impact of climate change, the unsustainable management and use of natural resources, the pollution of air, land and water, the unsound management of chemicals and waste, and the resulting loss in biodiversity interfere with the enjoyment of this right - and that environmental damage has negative implications, both direct and indirect, for the effective enjoyment of all human rights.”⁹⁶

The struggle for the recognition of the right to clean environment started 50 years ago when the United Nations Conference on the Environment in Stockholm adopted the Stockholm Declaration⁹⁷ which was the first statement by international community to address environmental issues from human rights angle and “marked the start of a dialogue between industrialised and developing countries on the link between economic growth, the pollution of the air, water and the ocean, and the well-being of people around the world.”⁹⁸ The Declaration of Principle on the Human Environment was meant to inspire and guide the people of the world in the preservation and enhancement of the environment. 50 years after the UN General Assembly has found the need to categorically and officially resolve that the right to clean, safe and sustainable environment is a universal human right.

With the official recognition of the right to clean environment at international level there is hope as the stage is now set for the advancement of the right at domestic level in jurisdictions where the right has not been given outright recognition. Some countries like Nigeria identify environmental rights in a manner that makes it difficult

⁹⁵ United Nations General Assembly Resolution (UNGA) A/76/L.75(2022).

⁹⁶ UN News ‘UN General Assembly declares access to clean and healthy environment a universal human right’ (28 July 2022) <<https://www.un.org/africarenewal/magazine/july-2022/un-general-assembly-declares-access-clean-and-healthy-environment-universal-human>>, accessed 15 August 2022.

⁹⁷ Stockholm Declaration on the Human Environment, *Report of the United Nations Conference on the Human Environment* (New York, 1973), UN Doc. A/CONF.48/14/Rev.1.

⁹⁸ UN News, n956.

to enforce directly.⁹⁹ Nigeria with a rapidly deteriorating environment as a result of decades of unabated exploration and exploitation of oil, pollution victims still have no clear constitutional guarantee to clean environment. This legislative and judicial inertia is not common to Nigeria and has remained largely so in some countries partly, because of lack of sufficient force at international level. In the African continent, there is the African Charter on Human and Peoples' Rights which clearly recognises the right to 'satisfactory environment' in article 24.¹⁰⁰ This Charter has also been domesticated in Nigeria¹⁰¹ but the judiciary in Nigeria has not been able to give effect to the right because it is listed as non-justiciable right in the Constitution¹⁰² which makes the Ratification and Enforcement Act a toothless dog. On the hand, the African Charter is not enforceable because section 12 of the Constitution states that treaties must be domesticated before they can be enforced in Nigeria. While the recent UN General Assembly Resolution may mean well for many other nations without explicit and enforceable environmental rights provisions, it may not be the same for some countries like Nigeria until the various constitutional challenges have been addressed.

6. CONCLUSION

In the history of the struggle towards the recognition of the right to a clean, safe and healthy environment all over the world, many governments have begun to give a thought to the recognition of environmental rights particularly through constitutional provisions.¹⁰³

⁹⁹ Other countries in this category are Afghanistan, Algeria, Cameroon, Comoros and Norway. May and Daly, n27, 388. Brown Etareri Umukoro 'Looking Beyond the Constitution: Legislative Efforts Toward Environmental Rights in Nigeria: A Review of Some Salient Legislations (2022)9(2) Brawijaya Law Journal 141-64. <<https://doi.org/10.21776/ub.blj.2022.009.02.03>>.

¹⁰⁰ Article 24 of the Charter provides that 'all peoples shall have the right to a general satisfactory environment favourable to their development.' For a fuller discussion on this, see generally, M Linde and L Louw, 'Considering the interpretation and implementation of article 24 of the African Charter on Human and Peoples' Rights in light of the SERAC communication' (2003) 3 African Human Rights Law Journal 167-187.

¹⁰¹ African Charter on Human and Peoples' Right (Ratification and Enforcement) Act Cap A9 LFN 2004. (Hereafter, Ratification and Enforcement Act).

¹⁰² Section 20 and 6(6) (c) of the Constitution.

¹⁰³ Boyd states that "Today [environmental right] ... is widely recognized in international law and endorsed by an overwhelming proportion of countries. Even

This is likely going to receive a higher recognition with the recent resolution of the UN General Assembly clearly and officially stating that a clean, healthy and sustainable environment is a universal human right. With this bold step by the international community, the interpretation of the concept and enforcement of this right at different levels now calls for further attention. There is a measure of disharmony between those who emphasis on environmental human rights in the narrow sense of the term and those who seek to promote the broader idea of ecological rights. These later agitators see the right as the centre of human existence. Thus, whether the right is termed as 'environmental right,' 'right to environment,' 'right to clean environment,' 'right to satisfactory environment,' or 'right to decent or healthy environment,' all are descriptions towards the objective of securing a habitable environment for man. It is suggested that whatever context in which the right is used, or whatever conceptual challenges that may be associated with the import of the right, judicial efforts should be geared towards interpreting the right to provide the full enjoyment as envisaged by the UN General Assembly Resolution and other instruments especially where environmental right is not explicitly provided for.¹⁰⁴

Taking lead from the Montana's Case,¹⁰⁵ it does appear that there is a general understanding of the import of the right to clean and healthy environment no matter how it is described. Even if all a statute states are that *citizens shall have right to the environment* it should be interpreted by the courts¹⁰⁶ to mean a right to an environment fit for human living, the courts being sufficiently able to draw the line between what environment is fit and what is not for human habitation.

more importantly, despite their recent vintage, environmental rights are included in more than 90 national constitutions. These provisions are having a remarkable impact, ranging from stronger environmental laws and landmark court decisions to the cleanup of pollution hot spots and the provision of safe drinking water." DR Boyd, 'The Constitutional Right to a Healthy Environment' (2012) 54 (4) Science and Policy for Sustainable Development 3.

¹⁰⁴ Some constitutions, such as South Africa explicitly provide for the progressive realization of some environmental rights. See generally Wet and Plessis n66, 345- 376.

¹⁰⁵ *Montana v DEQ* n39.

¹⁰⁶ For instance, in South Africa, the Constitutional Court had interpreted section 24 of the South African Constitution to the effect that the section implies that environmental rights should be accorded recognition and respect even in administrative processes. *The Director: Mineral Development, Gauteng Region and Sasol Mining (Pty) Ltd v Save the Vaal Environment and Others* (1999) 2 SA 709 (SCA).

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Prospects and Challenges to Prove Environmental Harm in Litigation: Status Quo in Nigeria

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ABSTRACT

Environmental litigation and enforcement of environmental rights remain a global challenge to sustainability, especially in developing countries such as Nigeria. The increasing rates of industrial activities have led to increase in production of hazardous substances posing threat to lives of the inhabitants of the environment. Victims of environmental harm most times find it difficult to protect and enforce their environmental rights. Proving environmental harm such as damages to property in litigation to enforce rights of compensation or restoration for damages suffered becomes difficult due to locus standi technicalities and undue delays during trials. Sometimes victims are faced with financial constraint in pursuing the course of justice which involves retaining the services of a lawyer and expert witnesses. This chapter, therefore, examines the prospects and challenges to proving environmental harm in litigation. This chapter employs doctrinal legal research methodology and content analysis of both primary and secondary sources in relation to proving environmental harm in litigation. On this premise, this chapter recommends the application of the principle of Res Ipsa Loquitur in trials of environmental cases. Proving environmental harm for the enforcement of environmental rights by victims, should be totally devoid of technicalities of law during trials. This will in turn promote the course of justice in cases dealing with environmental harm.

Keywords: Environmental harm; Challenges; Litigation; Compensation; Locus standi

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1. INTRODUCTION

This chapter discusses the prospects and challenges to proving environmental harm in litigation. It examines rights of compensation or restoration in cases of damages to land, streams, vegetation, etc. induced by anthropogenic activities. It is observed that in almost all African Countries, such as Nigeria, Ghana, Cameroon, among others, environmental harms are majorly caused by human industrial activities. This is as a result of human developmental and profit-oriented ambition superseding environmental sustainability, hence, the recurrent cases of environmental harm. In Nigeria, access to a clean environment appears to rank the least in order of environmental priorities due to an overwhelming profit and developmental interest overriding fundamental human rights to life and serene environment. These rights to life and serene environment are synonymous to healthy living.

The importance of the right to healthy living cannot be overemphasized owing to the fact that the major causes of sicknesses and diseases befalling humans are from environmental harm. Thus, right to a clean and healthy environment was defined as something of which no one may be deprived without a great affront to justice.¹ It is recalled that there is a plethora of environmental harm cases in which victims of environmental harm lost their rights to compensation or reinstatement. This is often predicated on legal technicalities, such as locus standi, documentary evidence, among others, which are involved in proving damages or harm suffered by the victims. Furthermore, victims often encounter the financial challenge in funding expert witnesses to prove their cases.

2. ENVIRONMENTAL HARM

Environmental harm means any impact on the environment as a result of human activity that has the effect of degrading the environment (whether temporarily or permanently).² Inflicting environmental harm might be environmental crime in some cases. According to White and

¹ Cranston, M., 'Human Right; Real and Supposed in Raphael (eds) Political Theory and the Rights of a Man' Blooming, 1967, 52.

² Cleverline, T. B. and Nlerum, S. O., 'Redressing Harmful Environmental Practices in the Nigerian Petroleum Industry Through the Criminal Justice Approach', (2020) 11 (1) Journal of Sustainable Development Law and Policy; Afe Baba Lola University, <www.ajol.info/jsdp?article=view> accessed 21 September 2023.

Heckenberg (2014), the term “environmental harm” has been used interchangeably with “environmental crime”³. This is because, like most concepts in environmental law, environmental crime does not lend itself to any specific definition, especially, because no definition can be retrieved from international conventions.⁴ In conceptualizing environmental harm, White (2008) proposed three approaches: the conventional criminology approach, the ecological perspectives approach, and the green criminology approach.⁵

The conventional criminology approach speaks to the conceptualization of harm from the point of view of legal instruments, such as law, rules and international conventions. Under this approach, activities are either legal or illegal.⁶ Ecological perspective approach accommodates the conceptualization of harm from the understanding of the interrelationship between species and the environment. Under this approach, the key issue is that of ecological sustainability and the categorization of social practices into benign and destructive practices.⁷ Green criminology approach conceptualizes harm from the point of view of justice for the effects of activities of human, ecological and animal rights and egalitarian concerns. This approach weighs different kinds of harm and violation of rights within the context of eco-justice framework.⁸

Environmental harm is a very broad concept that describes a physical or mental injury or moral wrongdoing to human kind and the health of other living organisms or interference with the ecological system of which form a part, including any human senses or human

³ White, R. and Heckenberg, D., ‘Green Criminology: An Introduction to the Study of Environmental Harm’ Routledge (2014) 348; as cited by Orlando, E. and Bergin, T., ‘Forging a Socio-Legal Approach to Environmental Harms: Global Perspective’, Routledge (2017) 3.

⁴ Mistura, A., ‘Is There Space for Environmental Crimes Under International Criminal Law? The Impact of the Office of the Prosecutor Policy Paper on Case Selection and Prioritization on the Current Legal Framework’ (2018) 43 (1) Columbia Journal of Environmental Law 181, 196, <journals.library.columbia.edu> accessed 22 December 2022.

⁵ White, R., ‘The Criminalization of Environmental Harm: Rob White Explores How Environmental Harm is Conceptualized and How it should be Tackled’ (2008) 74 (1).

⁶ Ibid, 24.

⁷ Ibid.

⁸ Ibid.

property.⁹ It can be caused by activities such as tree clearing, fishing, pollution and mining, damming rivers, killing native animals, soil erosion and aircraft noise.¹⁰ Environmental harm is any adverse effect on the value of the environment.¹¹ The environmental value is a quantity or physical characteristics of the environment that is conducive to ecological health or public amenity or safety.¹²

3. THE PROBLEM OF PROVING ENVIRONMENTAL HARM DURING COURT PROCEEDINGS

Many reasons have been put forward for the lack of success in proving environmental harm. This ranges from developmental interest of the government as against environmental interest, technicalities involved in the use of experts, lack of funds in securing services of experts, attitudes of the Judges who are reluctant in awarding adequate compensation, and the longevity of court proceedings or trials before cases are determined. These challenges are discussed below in three categories, namely: judicial approach in deciding matters of environmental harm, developmental interest overriding sustainability and impediments such as delay, cost of litigation, etc. to environmental litigation in Nigeria.

3.1 Judicial Approach in Deciding Matters of Environmental Harm

Ecologically, apart from the aforementioned provisions meant to guard against the pollution and degradation of the Nigerian environment, the Constitution¹³ of the Federal Republic of Nigeria clearly states that the State shall protect and improve the environment and safeguard the water, air and land, forest and wildlife of Nigeria. It is

⁹ Hughes, D., 'Environmental Law', (2003) 14 (1) Management of Environmental Quality 162, <<https://doi.org/10.1108/meq.2003.14.1.162.6>> accessed 22 December 2023.

¹⁰ Caxton Legal Centre Inc., 'Environmental Harm' (2016), as cited by Cleverline, T. B. and Nlerum, S. O., 'Redressing Harmful Environmental Practices in the Nigerian Petroleum Industry Through the Criminal Justice Approach', (2020) 11 (1) Journal of Sustainable Development Law and Policy, <<https://ajol.info/jsdp/article/view>> accessed 25 September 2023.

¹¹ Environmental Protection Act, 1994, s 14.

¹² Ibid, s 9.

¹³ Section 20 of the Constitution of the Federal Republic of Nigeria, 1999 as amended 2011.

unfortunate that the attitude of some of the Nigerian judges towards matters relating to environmental hazards created by the multinational corporations have rendered the enforcement of environmental laws ineffective. Some members of the judiciary as noted by Ebeku¹⁴ have been reluctant to give orders compelling companies whose operations are damaging to the environment to ease the action complained of.

Perhaps, these judges consider the potential loss of income and investments of litigants at the expense of the environmental protection. Additionally, this could be the fact that Nigeria's economy depends largely on the sales of crude oil. Whichever is the case, such actions retard the implementation of environmental laws and, thereby, encourage relegating these laws to a toothless dog. According to Oluwatoyin,¹⁵ there have been several oil related cases filed in the Nigerian Courts by affected Nigerians ranging from pollution from oil exploration, loss of incomes, loss of properties, contamination of drinking water leading to water borne diseases, and so on. A few cases need to be mentioned here. In the case of *Chevron Nigeria Limited v. Nwuche and Others*¹⁶, the plaintiffs were farmers and natives of Umukene Ohaji community in Imo State of Nigeria. The plaintiffs instituted legal action against the defendant that the defendant's mineral oil exploration has caused a lot of damages to their farmlands and also deprived them of their farming benefits. The defendant contended that the trial court lacks jurisdiction to entertain the matter. Defendant further contended that the plaintiffs are not entitled to the reliefs being sought in the trial. The trial court ruled that it has jurisdiction to adjudicate on the matter. On appeal, the Court of Appeal set aside the ruling of the trial court and the plaintiffs' entire suit was struck out. Similarly, in *Amos and 4 others v. Shell B.P Nig. Ltd.*¹⁷, the plaintiffs sued the defendants jointly and severally for unlawfully blocking the Kolo Creek waterway, which passes through their farmlands in Ogbia community in Rivers State of Nigeria. The defendants contended that Kolo Creek is a public waterway and that the plaintiffs have no *locus standi* to institute the legal

¹⁴ Ebeku, K., 'Judicial Attitudes to Redress for Oil Related Damages in Nigeria', (2003)12 (2) RECIEL 199-208, as cited by Adamu Kyuka Usman, 'Environmental Protection Law and Practice', Ababa Press Ltd., Nigeria 2012, 228-233.

¹⁵ Osho-Adejonwo Oluwatoyin, 'The Evolution of Human Rights Approaches to Environmental Protection in Nigeria', (2005) Opticom Documans & Task, <www.iucnael.org/index.php?> accessed 12 March 2023.

¹⁶ (2005) PH 420 (CA).

¹⁷ (1972) 4 S.C 123.

action in a court of competent jurisdiction. The court upheld the submission of the defendants and ruled against the plaintiffs. Other similar cases discussed hereinafter are, among others, *Seismograph Services Ltd. v. Onokpasa* and *Oronto Douglas v. Shell Petroleum Development Company Ltd.*

In most of these cases and similar ones, the judicial courts are said to have refrained from making orders on how to remedy the situation of the oil spillage claims, loss of income from fishing and farming, pollution of drinking water and crops, and damage to health as a result of waterborne diseases. Instead of passing orders, which address the complaints regarding damages to the physical environment of these communities (Sagbama community, Peremabiri community in Bayelsa State and Ineh/Aku communities in Abia State of Nigeria), the courts tend to settle for compensation of the affected complainants. In this manner, the environmental laws that were meant to protect human beings and other living things are rendered ineffective. It is hoped that, the judiciary may in future begins to address cases of environmental harm not merely to award monetary compensations but to preserve a healthy environment.¹⁸

The multinational oil companies, which are normally being complained against by oil communities on gas flaring, are more likely to win an environmental litigation, especially, when it relates to technicalities of locus standi and other related issues in proving damages or environmental harm suffered. In the case of *Oronto Douglas v. Shell Petroleum Development Company Ltd. (SPDC)*, the court refused to grant the plaintiff's relief against Shell Petroleum Development Company Ltd. The court held that the Plaintiff lacked the *locus standi* to commence suit having failed to proffer evidence that he suffered any injury above that of the public.

3.2 Developmental Interest Overriding Sustainability

Many reasons have been advanced for the lack of effective environmental enforcement policies. Profit-oriented and developmental ambitions had, over the years, superseded sustainable interest. The notion here is that, in as much as the adventure is lucrative, the side-effect harm is of less priority. One of the reasons often cited is

¹⁸ Okorodudu, M.T., 'Law of Environmental Protection' (1998) Text C., as cited by Ebeku, K., 'Judicial Attitudes to Redress Oil Related Environmental Damage in Nigeria' (2003) 12 (2) RECIEL 207.

corruption of public officials charged with the duty of enforcing these laws. Corruption is a major problem in Nigeria and has pervaded almost all sectors of the economy. The enforcement agents that deal with the wealthy multinational oil companies, such as Chevron, Agip, are easily influenced to compromise against international best practices.

These factors could alone or in combination act as serious impediments to enforcing environmental regulations. It, however, offers little explanation on why the Nigerian Federal Government seems reluctant in imposing stringent penalties on activities that caused serious environmental harm in the country, as it is in the case of gas flaring, which is highly tolerated.

The Nigerian leadership is even ready to subject the standard of living and health of its citizens over the continued flaring of gas. Though gas flaring has been declared illegal in Nigeria since 1984, and various courts of jurisdiction have ruled against its practice, it continues unabated. In the case of *Jonah Gbemre v. Shell Petroleum Development Company of Nigeria Ltd & Ors*,¹⁹ the court ruled against the activities of gas flaring and declared gas flaring as unconstitutional and a breach of fundamental rights to life and dignity of human persons. These rights are guaranteed by the African Charter on Human and People's Right and the Constitution of the Federal Republic of Nigeria.²⁰

Today, Nigeria is one of the countries with highest percentage of gas flaring, globally. Therefore, to understand why the Nigerian government seem reluctant to enforce its environmental laws to the latter, it becomes necessary to look at the nature of its economy because, as analysed herein, it shows the nature of the Nigerian economy having lopsided towards the production of a single commodity that has had the greatest impact in weakening the political will of Nigerian leaders and have effectively made it rely on rent/proceeds from oil production for its survival.

3.3. Impediments to Environmental Litigation in Nigeria

There are certain hiccups that are associated with litigation in Nigeria. This is regardless of whether such litigation is an environmental litigation or other subject matters. These impediments are not sector specific or court specific. They include factors like delays, cost of litigation and services of legal practitioners, ignorance of the law on part

¹⁹ (2005) 151 AHLR (NgHC).

²⁰ Constitution of the Federal Republic of Nigeria, 1999 as amended 2011.

of citizens, remoteness of court halls from rural dwellers etc.²¹ Much litigation in courts takes time and unnecessary delays are attributable to them. It is recorded that an average length of litigation in superior courts of record lasts between five to six years and those cases that are eventually heard proceed with no real sense of urgency.²²

This is the minimum time a victim of environmental harm for instance will take to assert his right. This excludes the right of unsuccessful litigant to file appeal. Friends of the Earth International captured the exact nature of the length of environmental litigation against oil multinational companies in the following words:

“A classic example of how transitional oil companies escaped from the arm of the law using the cumbersome legal system that is time wasting to frustrate litigants. In Nigeria, delays significantly plague the course of litigation against the poor rural communities. The delay in getting judgment in the courts discourages the prospective litigants from instituting any environmental action in court. Some cases are illustrative. According to records, a spill at Peremabiri Bayelsa State in January 1987 came to the High Court in 1992 and to the Court of Appeal in 1996; a case heard in High Court in 1985 in relation to damages suffered on a continuous basis since 1972 was held in Court of Appeal in 1994; a case held in 1987 in relation to damages suffered since 1967 was heard in the Court of Appeal in 1990 and in the Supreme Court in 1994.”²³

It is crystal clear that the victims of environmental harm are confronted with so many difficulties in trying to prove their cases with regards to harm suffered consequentially from the misconduct of another. The resultant effect of this is loss of confidence by the victims in the Nigerian courts and this has led to a number of environmental

²¹ Fagbemi, S.A. and Akpanke, A.R., ‘Environmental Litigation in Nigeria: The Role of the Judiciary’, (2019) 4 <[www.ajol.info>article>view](http://www.ajol.info/article/view)> accessed 25 September 2023.

²² Oko O. ‘Seeking Justice in Transitional Societies: An Analysis of the Problems and Failures of the Judiciary in Nigeria’ (2005) 9 (14) 31 *Brook J Int. Law*, as cited by McCaskill L., ‘When Oil Attacks: Litigation Options for Nigerian Plaintiffs in U.S Federal Courts’ (2013) 22 (2) *Health Matrix; the Journal of Law-Medicine* 560.

²³ Friends of the Earth, ‘Access to Environmental Justice in Nigeria: The Case for a Global Environmental Court of Justice’ (2016), <www.foei.org> accessed 23 August 2023.

cases being taken to courts outside the shore of Nigeria.²⁴ Some victims also abandon their cases halfway due to financial constraint, delays in the judicial system and the technical doctrine of *locus standi*. Thus, the strict enforcement of the doctrine of *locus standi* has deprived numerous environmental litigants their fundamental right to access environmental justice.

The issue of *locus standi* relates to Nigerian environmental law conferring only government agencies with standing to sue. In this way, a government that fails to enact strong laws or enforces its own laws is protected by a system that bars interested members of the public from suing.²⁵ A 2015 survey of enforcement official and legal practitioners corroborates this argument.²⁶ Few courts that have exercised jurisdiction are courts of the United Kingdom,²⁷ African Commission on Human and People's Rights²⁸ and the Economic Community of West African States (ECOWAS) Community Court of Justice that entertain matters when all other remedial local avenues to redress the injustice have been exhausted.

However, the limitation here is that such international courts do not always assume jurisdiction in every matter that is brought before it. This was demonstrated rightly in the case of *Socio-Economic Rights and Accountability Project (SERAP) v. President of the Federal Republic of Nigeria & Ors.*²⁹ In this case, the court held that while it had jurisdiction to entertain the case, its jurisdiction was only to the extent that the Federal Government of Nigeria and its agency, the Nigeria National Petroleum Company (NNPC), are parties to ECOWAS treaties but that it lacked jurisdiction over multinational corporations and proceeded to strike their names off the law suit.³⁰

²⁴ Popoola, E.O., 'Moving the Battlefields: Foreign Jurisdictions and Environmental Justice in Nigeria' (2017), <kujenga-amani.ssrc.org> accessed 24 September 2023.

²⁵ Ibid.

²⁶ Popoola, E. O., 'Appraisal of the Contemporary Jurisprudence on the Right to Environment: A Case Study of Nigeria and South Africa', Ahmadu Bello University, (2016), 390.

²⁷ *Okpabi v. Royal Dutch Shell and Others* (2018) EWCA Civ, 191.

²⁸ Article 50 of the African Charter on Human and Peoples' Rights, 1981.

²⁹ (2010) ECW/CCJ/APP/8/09.

³⁰ Ekhatior, E.O., 'Improving Access to Environmental Justice Under the African Charter on Human and Peoples' Rights: The Roles of NGOs in Nigeria' (2014) 22 (1) African Journal of International and Comparative Law 63, 73.

In the case of *Oronto Douglas v. Shell Petroleum Development Company Ltd (SPDC)*,³¹ the plaintiff, a private citizen, brought an action against the defendant, an oil corporation, seeking a mandatory order directing the defendant to contend certain provisions of the Environmental Impact Assessment Act before continuing with a liquefied natural gas project. The court refused to grant the plaintiff's relief holding that he lacked the *locus standi* to commence suit having failed to proffer evidence that he suffered any injury above that of the public.

It is argued that the doctrine of *locus standi* is not applicable to environmental matter.³² Thus the fundamental rights rules³³ provided to the effect that the courts shall encourage and welcome public interest litigations in the human rights field and no human rights case may be struck out for want of *locus standi*.

Similarly, in *Centre for Oil Pollution Watch v. Nigerian National Petroleum Corporation (NNPC)*,³⁴ the case was initially filed at the Federal High Court by the plaintiff who brought an action against the NNPC for refusing to clean up and reinstate the Ineh/Aku streams and rivers in Abia State of Nigeria. The streams were polluted by the spilled oil from the NNPC corroded pipeline which ruptured. At the trial, the defendant (NNPC) denied liability and filed his defence action contending that the plaintiff, being a non-governmental body, has no *locus standi* to institute such legal action.

The Federal High Court upheld the submission of the defendant and struck out the action. The plaintiff filed a Notice of Appeal and challenged the decision of the Federal High Court. The Court of Appeal upheld the decision of the lower court to the effect that the plaintiff has no *locus standi* in the action. The argument of the Appellant was that the suit was instituted on the ground of public interest for the purpose of conserving the environment and that the suit reveals extreme issue that would validate an exceptional approach to the question of sufficient interest. Responding to the Appellant's argument, the respondent therein contended to the effect that the principle of *locus standi* in the administration of justice under the Nigerian judicial system has not

³¹ (1988) LPELR143/97 (CA).

³² Michael Uche Ukponu, 'Environmental Law and Access to Justice in Nigeria: A Case for a Specialized Natural Environmental and Planning Tribunal (NEPT)', (2019) University of Melbourne, Melbourne Law School, Australia.

³³ Fundamental Rights (Enforcement Procedure) Rules, 2009.

³⁴ (2019) 5 NWLR (Pt. 1666) 518 (S.C.).

changed and that the Appellant has not shown to the court that he personally suffered any injury or harm to its interest nor authorized by the affected community to sue on its behalf. The Court of Appeal, while delivering its judgment, therefore, acknowledged the exponential growth in the change of attitude by courts in other jurisdictions allowing pressure groups, non-governmental organisations and public-spirited taxpayers to institute an action bothering on public interest. It, nevertheless, observed that Nigerian courts are yet to adopt such approach and, therefore, dismissed the appeal. The Appellant being dissatisfied with the judgment went further on to appeal to the Supreme Court and the Supreme Court overruled the decision of the Court of Appeal. The Supreme Court held that the Court of Appeal was wrong in playing into technicalities of *locus standi* to deprive public group's right of action to redress unlawful conduct.

The Supreme Court stated that in environmental cases, as in the instant one, non- governmental organisations (NGOs) such as the Appellant in this suit have the obligatory standing to institute legal action. Furthermore, the court noted that public interest litigation is geared towards improving access to justice for the masses, especially, the poor whose rights are infringed upon. Again, public interest litigation is for the protection of the masses and that such legal action serves as a means of liberating, transforming and protecting the interest of relegated groups. The court stated to the effect that everyone such as pressure groups, public spirited taxpayers or non-governmental organisations who *bona fide* seek a redress in the court of law in respect of the due performance of statutory functions or the implementation of statutory provisions or public laws meant or designed to safeguard human lives, public health and environment, should in appropriate definition be seen as the appropriate parties enshrined with the right standing in law to bring an action to redress unlawful conduct.

The above-mentioned cases are a clear example of cases where victims suffered untold hardship as a result of legal technicalities of *locus standi* though there is access to court. The Supreme Court is commended in this celebrated case. In *Adesanya v. President of the Federal Republic of Nigeria & Anr*,³⁵ the court stated to the effect that the words "*Locus Standi*" represent the legal capacity to institute cause of action in a court of competent jurisdiction. In this case, the court held that the

³⁵ (1981) 5 S.C. 69.

claimant must give a convincing reason to justify that his interest will be affected by the action or that he is a victim of the harm done.

Sequel to the foregoing evaluations, this chapter argues that delay in proceedings and strict enforcement of *locus standi* in environmental cases will deny victims of environmental harm access to environmental justice. This happens mainly in situations where the victim indirectly suffers from the harm done. The right to a serene environment belongs to everyone whose interest may be affected directly or indirectly when the environment is polluted. Wilful disobedience to laid down rules and court's orders pertaining to the use of the environment is a major challenge to sustainability. The worrisome issue is that despite the decision of the court on gas flaring as in the aforementioned case of *Jonah Gbemre v. Shell Petroleum Development Company of Nigeria Ltd. & Ors*, the multinational oil companies still flare gas in disobedience to court's order due to an overriding interest in profit making than the health of the innocent citizens.

It has been pointed out that the need for Nigerian courts to relax standing requirement in environmental litigation in order to engender growth of climate change litigation would help Nigeria realise its climate change mitigation and adaptation potentials more effectively.³⁶

4. THE PATHETIC SITUATION OF NIGER DELTA REGION

There is plethora of cases of environmental problems arisen from pollution, degradation and deforestation, but over 90 percent of them turned out an exercise of futility due to technicalities involved in proving cases of environmental harm in legal action for damages and compensations.³⁷ Even the few ones that succeed are given meagre compensation as the only remedy while the acts being complained of continue.

In *Shell Petroleum and Development Co. Ltd. v. Cole*,³⁸ the inhabitants of Sagbama Community in the Niger Delta sued Shell for compensation for loss of their fishing rights at the Sagbama creek, which the oil company dredged in 1971 for the purpose of oil production. The trial

³⁶ Etemire, U., 'The Future of Climate Change Litigation in Nigeria: COPW v. NNPC in the Spotlight', (2021) CCLR (2) 159

³⁷ Awodezi Henry and Eruteya Ugiomo, 'Environmental Law Litigation and its Remedial Challenges', (2019) Human Rights Jurisprudence Journal (HRJJ); Center for African American Research Studies- CAARS; ISSN:2636-5685.

³⁸ (1992) 8 N.W.L.R. (pt. 259) 335.

judge ruled in favour of the community. Shell appealed. The then Federal Supreme Court judge upheld the judgment of the lower court and held that the amount awarded as damages was far less than the loss proved by the community but could not review the award because the community did not cross appeal on the point.

The problem of getting adequate compensation can be attributed to the fact that development interest and profit-oriented ambitions are prioritized over environmental interest.³⁹ A notable case study of this is the export of toxic waste to Africa which was discovered in 1988. Containers of toxic wastes were imported by a Nigerian peasant living near the small port of koko,⁴⁰ a coastal community located in Delta State of Nigeria and lies south of the former Bendel State close to the Atlantic Ocean. In September 1987, an Italian businessman based in Nigeria, and acting on behalf of an Italian Waste Disposal Company, shipped to the port of Koko 4,000 tons of industrial and nuclear wastes for over a period of 18 months. The wastes were brought into Nigeria purportedly as industrial chemicals for Nigeria Companies.⁴¹

In reaction to the menace, the Nigerian Government enacted different environmental policies.⁴² Findings also showed that the purpose and impact of some of these environmental policies are to an extent cosmetic in conception with no objective framework for implementation to achieve the desired sustainable goals. The reasons for failure are varied, complex and wide. Many regulatory frameworks fail because the government lacks necessary information and data to regulate environmental pollution. However, all nations' rich or poor have no alternative but to be concerned with the environment.⁴³

On the contrary, most of these countries have not been innocent victims and, in most cases, there are contractual prearrangement

³⁹ Ibid.

⁴⁰ Peter, C.M., 'Taking Environment' (1993) 3 *Revue Africaine des Droits de l'Homme*, 42.

⁴¹ Eguh, E.C., 'Regulations of Trans-boundary Movements of Hazardous Wastes, Lessons from Koko' (1997) 9 *RADIC* 130.

⁴² Oil Pipeline Act Cap. 07 Laws of the Federation of Nigeria (L.F.N.) 2004, the Endangered Species Act Cap. E9 Laws of the Federation of Nigeria (L.F.N.) 2004, Environmental Impact Assessment Act, Cap. E12, Laws of the Federation of Nigeria (L.F.N.) 2004, Federal Environmental Protection Agency Act (F.E.P.A.), 2004 which was subsequently repealed by the National Environmental Standards and Regulations Enforcement Agency (NESREA) (Establishment) Act 2007, Harmful Waste (Special Criminal Provisions) Act 2004, among others.

⁴³ Omorogbe, Y., 'The Growth of Environmental Law in Developing Countries: Problems and Prospects' (Mimeo), 2010, 1.

between their governments and multinational corporations. These are done because of the financial gains involved and ignorance of the dangers of such actions. In *Seismograph Services Ltd. v. Onokpasa*,⁴⁴ the plaintiff/respondent found himself in a devastating situation in the sense that his school building developed cracks following the defendant/appellant's rock blasting activities near the school. The cracks became visible only after some weeks following the cessation of the appellant's seismic activities. On these facts, the court held that the respondent failed to establish a nexus between the cracks on his building and appellant's blasting activities. The court stated further that it is important to consider the duration of time between the blasting activities of the appellant and the appearance of cracks on the respondent's building.

Tied to the problem of proving environmental harm is the problem of the technical rules of prosecuting a case in the law courts and the availing defences in the rule in *Rylands v. Fletcher*.⁴⁵ In *Amos v. Shell B.P. Nig. Ltd.*,⁴⁶ the plaintiffs lost their case because they sued on what was considered public nuisance without the consent of the Attorney General. In *Chinda & Ors v. Shell Petroleum Development Co. Ltd.*,⁴⁷ the plaintiffs in a representative capacity sued the defendant company for heat, noise and vibration resulting from the negligent management and control of the flare set used during gas flaring operations. This resulted in a lot of damage to the plaintiff's property. On the representative character aspect of the case, the court held that the plaintiff's action must fail because the plaintiff could not prove they had the mandate to sue in a representative capacity.

Regarding negligence, the court held that the plaintiffs could not prove negligence on the part of the defendant in the management and control of the flare set. In cases requiring such skill and technology, the inhabitants of the host rural oil communities obviously find it extremely difficult to prove negligence or that reasonable care was not taken during the defendant's operations. This problem naturally emerges because of the plaintiff's limited knowledge of operations in the petroleum industry. In the same vein the plaintiffs will find it difficult to prove that 'Good Oil

⁴⁴ (1972) 73/1970 SC. as cited by Adamu Kyuka Usma, 'Environmental Protection Law and Practice' Ababa Press Ltd, Nigeria, 2012, 228-233.

⁴⁵ (1993) 7 N.W.L.R. (Pt.304) 203.

⁴⁶ (1972) 4 S.C 123.

⁴⁷ (1868) 3 L.R 330. (HL).

Field Practices' were not adopted by the defendant. The defendant company on the other hand would have no difficulty in providing experts with in-depth knowledge of petroleum technology to explain such technical terms and prove that they were not negligent.

5. CONCLUSION AND RECOMMENDATIONS

Conclusively, this chapter argued that legal technicalities are hindrances to assessment of environmental justice. Right to compensation or restoration in cases of environmental harm are often difficult to access due to technicalities of law during court trials.

The aforementioned cases of *Seismograph Services Ltd v. Onokpasa*, *Oronto Douglas v. Shell Petroleum Development Company Ltd. (SPDC)*, *Jonah Gbemre v. Shell Petroleum Development Company of Nigeria Ltd & Ors*, among others, are several environmental harm cases in which victims of environmental harm suffered untold hardship in the course of enforcing their rights to compensation or reinstatement not because they lack a just cause of action but due to legal technicalities. The plaintiffs in the case of *Centre for Oil Pollution Watch v. Nigerian National Petroleum Corporation (NNPC)* suffered delay impediment from the trial court to Supreme Court before they could not assess their right to compensation due to technicality of *locus standi*. Legal technicalities of *locus standi*, delays in trials, financial challenge, among others, are major constraints befalling victims.

A plaintiff suing for environmental harm therefore has to engage the services of a good lawyer to make success of his case and this will involve huge amount of money. Due to meagre funds in the hands of the victims, unlike the wealthy industries, the litigants continue to suffer environmental harm from the pollutant-industries. This could be traced to the fact that Nigeria's economy depends largely on the sales of crude oil. Whichever is the case; such actions retard the implementation of environmental laws and, thereby, make innocent victims to continue to suffer untold hardship from environmental harm.

Sequel to the foregoing, this chapter recommends that intending or potential litigants who in one way or the other become victims of environmental harm should seek redress in court by soliciting the doctrine of *Res Ipsa Loquitur* (that is, the facts speak for itself) to establish their cases against the wealthy pollutant-industries. Under this doctrine, the court does not need the plaintiff or claimant to prove the

harm done to him if the harm itself is glaring to the assessment of the ordinary man in the society.

This chapter further recommends that while the innocent victims solicit the doctrine of *Res Ipsa Loquitur* in courts, the courts should in turn apply same in administering course of justice and jettison technicalities of *locus standi*, prove of harm or damage suffered by expert witness and undue delays before cases are determined. The victims of environmental harm are those whose right to clean and healthy environment are infringed upon as a result of damages done to their environment which consequently has adverse effect on their health or means of livelihood.

Alternatively, aggrieved parties should also seek arbitration to reconcile the dispute emerging from environmental harm. Although, this can only be made possible if all the aggrieved parties agree to resolve their dispute through arbitration. In effect, it will save cost and precious time for the aggrieved parties instead of embarking on court's proceedings which may take a longer time for the case to be determined.

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John Burroughs



You cannot cause disproportionate damage to the environment; you cannot harm neutral states. The court said that the threat or use of nuclear weapons is generally contrary to the international law of armed conflict.

AZ QUOTES

International Trade and Environmental Protection: Revisiting David Hunter's "Invisible Elbow Destroying the Common Goods Created by an Invisible Hand"

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ABSTRACT

Twenty-eight years after the emergence of the World Trade Organisation (WTO) regime, the trade-environmental protection relationship seems to have achieved some harmonisation from an initial chequered one, though not without some forms of lopsided balancing of the variables. This chapter explores the relationship between international trade and the environment, revealing whether the competing values are balanced. The methodology adopted is doctrinal, with a comparative and analytical approach involving desk and library research. The chapter is bifurcated into six parts, commencing with an introduction in the first: the second fleshes out international environmental agreements relevant to the trade-environment interaction. The third part examines principles of international environmental law. The chapter examines unilateral trade measures in the fourth part. The fifth part takes stock of WTO jurisprudence. While considerable efforts have been made to mainstream environmental protection into trade objectives through the WTO jurisprudence, there remain some forms of market failures, making the trade-environment relationship lopsided, with inadequate attention given to the environment, which brings to fore the need to revisit David Hunter's metaphoric invisible elbow (trade) destroying the common goods (environment) created by an invisible hand (nature).

Keywords: Biodiversity; Environmental protection; International trade; Climate change; International environmental law; World Trade Organisation Laws; International environmental agreements

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1. INTRODUCTION

Hunter et al. (2022), through their concept of “ecological economics”, described the trade-environment relationship with many metaphors, one of which is Hardin’s “Tragedy of the Commons”. The gist of this analogy is that the interaction between trade and the environment rendered the latter degraded significantly in the absence of laws governing their interface.¹ Twenty-eight years after the emergence of the World Trade Organisation (WTO) regime², the trade-environmental protection relationship (the focus of this chapter) seems to have achieved some degree of harmonisation³ from an initial chequered and loggerheaded one,⁴ though not without some forms of lopsided balancing⁵ of the variables that predictably favours some interests over others in the manner described in the “tragedy of the commons.”⁶ This work aims to explore the relationship between international trade and the environment through community lenses of the WTO regime and international environmental laws and in the process reveal whether the competing values are balanced or not.

2. INTERNATIONAL ENVIRONMENTAL AGREEMENTS

Though fragmentation is an existential challenge in international law⁷, the comparative marginal⁸ and fragmented nature of international

¹ David Hunter, James Salzman, and Durwood Zaelke, ‘International Environmental Law and Policy’ (6th edn, Foundation Press, 2022) 98–100.

² The entire package making up the WTO system known as the Final Act, which includes the Agreement establishing the WTO, the General Agreement on Tariffs and Trade 1994, The General Agreement on Trade in Service, The Agreement on Trade-Related Aspects of Intellectual Property Rights, The Agreement on Technical Barriers to Trade, The Agreement on Sanitary and Phytosanitary Measures, and the Understanding on Rules and Procedures Governing the Settlement of Disputes were opened for signature at Marakesh, Morocco, on 15th April 1994 and entered into force on 1 January 1995

³ Alan Boyle and Catherine Redgwell, ‘Birnie, Boyle & Redgwell’s International Law and the Environment’ (4th edn, Oxford University Press 2021) 810.

⁴ Harro Van Asselt, ‘Trade’ in Lavanya Rajamani and Jacqueline Peel (eds), *The Oxford Handbook of International Environmental Law* (2nd edn, Oxford University Press 2021) 751.

⁵ Ibid 766.

⁶ David Hunter, James Salzman, and Durwood Zaelke (n 1).

⁷ Dean Spielmann, ‘Fragmentation Or partnership? The Reception of ICJ Case-Law by the European Court of Human Rights’ in Mads Andenas and Eirik Bjorge (eds), *A Farewell to Fragmentation* (1st edn, Cambridge University Press 2015)

environmental law⁹ works hardship in identifying norms, rights, duties and obligations¹⁰ at stake in the field. This is unlike other areas of law with a harmonised legal system¹¹. A mention of the sources of International Environmental Law is thus an invocation of different bilateral and multilateral treaties.¹² This part revisits these treaties in two rubrics: the first takes stocks of treaties dealing with biodiversity, while the second explores those on climate change.

2.1 Biodiversity Treaties and Trade

International trade remains one of the greatest drivers of biodiversity loss; illustratively, it has been reported that while internationally traded species such as birds are at risk of perpetual extinction, mammals and amphibians remain endangered due to human use.¹³ Rockstrom et al. (2018)¹⁴ not only pegged the rate of species extinction due to “human activities”¹⁵ to be 100 to 1000 times higher than expected but also warned that such skyrocketing increase in biodiversity loss comes with rife consequences on the functionality of the earth, ultimately leading to ecosystem resilience attrition¹⁶.

173, <https://www.cambridge.org/core/product/identifier/9781139979498%23CT-bp-7/type/book_part> accessed 8 December 2023.

⁸ Elizabeth Fisher, ‘Environmental Law as “Hot” Law’ (2013) 25 *Journal of Environmental Law* 347, 349.

⁹ Alan Boyle and Catherine Redgwell (n 3) 107.

¹⁰ Fisher (n 9) 348.

¹¹ Examples include the Law of the Sea and the WTO regime. Alan Boyle and Catherine Redgwell (n 3) 108.

¹² David Hunter, James Salzman, and Durwood Zaelke (n 1) 413.

¹³ Secretariat of the Convention on Biological Diversity, ‘Global Biodiversity Outlook 5’ (2020) 49.

¹⁴ Johan Rockstrom and et al, ‘A Safe Operating Space for Humanity’ *Nature* (Macmillian Publishers Limited, 2009) 474.

¹⁵ Though the authors did not specifically mention ‘trade’ as a reason for biodiversity loss, their employment of concepts such as human activities, land use, conversion of the natural ecosystem into agriculture or urban areas and introduction of new species into land and freshwater environments could, however, be understood to mean commercial or trade phenomenon that affords humans the platform to derive market or trade benefits from the environment or biodiversity. Ibid. Sands et al. added the conversion of forests to oil palm plantations, among others for biofuels to the list. Philippe Sands and Jacqueline Peel, ‘Principles of International Environmental Law’, (4th edn, Cambridge University Press 2018) 385.

¹⁶ Johan Rockstrom and et al (n 15).

The preceding facts, among others¹⁷, reinforced the need to conserve biodiversity through treaty obligations. The first part of call will be the 1992 Convention on Biodiversity (CBD) and its two protocols¹⁸. The Convention on International Trade in Endangered Species (CITES)¹⁹ should be mentioned. This list of treaties is not exhaustive, as there exist other treaties, soft laws and mechanisms within the ambit of this discussion. A mention will include the Bonn Convention on Migratory Species, the Ramsar Convention on Wetlands of International Importance, the World Heritage Convention, the International Treaty on Plant Genetic Resources for Food and Agriculture, the International Plant Protection Convention, the 1972 Stockholm Declaration, the 1982 World Charter for Nature, Agenda 21, the 1980 IUCN World Conservation Strategy, and the 1984 Action Plan for Biosphere Reserve.

The CBD is animating for taking an ecocentric or habitat-based approach that appreciates both direct and indirect drivers of biodiversity loss.²⁰ Hence, its scope includes the whole gamut of the ecosystem²¹. The CBD thus opened the floodgate for international regulation and protection of non-migratory species that were hitherto limited to national regulation due to state sovereignty, just as it closes the North-South debate about the treatment of biological diversity as a “Common heritage of humankind” by viewing same as “common concern of humankind”; a term that accommodates both Global North’s and South’s concerns of conservation and benefit sharing of biodiversity resources.²² Its innovative introduction of concepts such as biodiversity, genetic resources and biotechnology, benefit sharing, ecosystem, and traditional knowledge epitomised its progressive nature.²³

¹⁷ Sands et al., for instance, developed a trinity reason for biodiversity conservation; (1) Provision of actual and potential sources of biological resources, (2) Maintenance of the biosphere, otherwise known as ecosystem service and (3) Ethical, intrinsic, aesthetic and cultural considerations. Philippe Sands and others (n 16).

¹⁸ The 2000 Cartagena Protocol on Biosafety (The Cartagena Protocol) and the 2010 Nagoya Protocol on Access to Genetic Resources and Benefit-Sharing (The Nagoya Protocol)

¹⁹ The Convention on International Trade in Endangered Species of Fauna and Flora

²⁰ Philippe Sands and others (n 16) 387.

²¹ David Hunter, James Salzman, and Durwood Zaelke (n 1) 998.

²² Ibid.

²³ Elisa Morgera and Elsa Tsioumani, ‘Yesterday, Today, and Tomorrow: Looking Afresh at the Convention on Biological Diversity’ (2010) 21 Yearbook of International Environmental Law 3.

The CBD is, however, bedevilled with the challenge of being a framework with weak obligations that can only bark and not bite.²⁴ This is reflected in its employment of broad concepts that elude clarity.²⁵ A case in point here is its employment of the term; “common concern of humankind” to replace “common heritage of humankind”, which, though settled the North-South debate, potentially creates a weaker obligation on both Northern and Southern states to conserve biodiversity.²⁶ The CBD, in this manner, has not only turned out to be a sword and a shield in the conservation crises but has also earned the reputation of a “soft law”²⁷ with uncertain obligations that have been said to reinforce its lack of prioritisation of objectives.²⁸

The implication of the preceding is that the implementation of the CBD is subject to the discretion of political actors.²⁹ Hence, the introduction of its two protocols, the Cartagena and Nagoya Protocols, with stronger normative obligations³⁰, was purporting to be the game changer. This did not, however, turn out to be the case as the dispute enforcement mechanism of the CBD remained uninvoked³¹, leaving most of its provisions judicially unappreciated.

In short, the United States (US), which is often a party to most conservation disputes³², is not subject to the CBD system³³; impliedly, difficulties will always arise in adjudicating environmental law disputes arising from the CBD system concerning non-party states such as the

²⁴ Lavanya Rajamani and Jacqueline Peel, *The Oxford Handbook of International Environmental Law* (Oxford University Press, Incorporated 2021) 567
<<http://ebookcentral.proquest.com/lib/brunelu/detail.action?docID=6681452>>
accessed 9 December 2023.

²⁵ David Hunter, James Salzman, and Durwood Zaelke (n 1) 998.

²⁶ Ibid.

²⁷ Stuart R. Harrop and Diana J Pritchard, ‘A Hard Instrument Goes Soft: The Implications of the Convention on Biological Diversity’s Current Trajectory’ (2011) 21 *Global Environmental Change* 474.

²⁸ Morgera and Tsoumani (n 25) 4.

²⁹ Rajamani and Peel (n 26) 569.

³⁰ Ibid.

³¹ Philippe Sands and others (n 16) 397.

³² Tuna/Dolphin I, 30 ILM 1594 (1991); Tuna/Dolphin II, 33 ILM (1994); Reformulated Gasoline Case-Report of the Appellate Body, 29 April 1996, WT/DS2/AB/R; Shrimp/Turtle Cases (1998 and 2001); Tuna/Dolphin II (2012)-United States-Measures concerning the Importation, Marketing and Sale of Tuna and Tuna Products, Report of the Appellate Body, WT/DS381/AB/R (16 May 2012)

³³ Morgera and Tsoumani (n 25) 4.

US. This was the case in the EC-Biotech Products case³⁴, where a substantive part of the dispute concerning the interaction of the Cartagena Protocol and the WTO agreements was left unaddressed by the WTO Dispute Resolution Body (DRB) because the US, Canada and Argentina, who were the complainant were not parties to the Protocol.³⁵ The CBD has achieved its ecocentric goal not through dispute resolutions, albeit desirable, but mostly through its Conference of Parties (COPs), which has adopted various mechanisms such as the Strategic Plan for Biodiversity 2011-2020 and the Aichi Targets to actualise its objectives.³⁶ The question of whether the COP's approach to implementing CBD is effective is beyond the scope of this work. However, its effectiveness needs to be researched, especially considering that COPs approaches through the Aichi Targets are more of garnishing the soft law obligations of the CBD rather than concretising them into hard laws.

The CITES, on the other hand, is not only stimulating for taking a bold step in listing species whose conservation is threatened by international trade but also for prohibiting or regulating their international trade as circumstances may demand.³⁷ Thus, unlike the CBD with a holistic approach, the CITES is species-centred³⁸. The CITES regulate trade in species once listed in any of its three Appendices. Appendix-I lists species threatened with extinction that may be further affected by trade.³⁹ By implication, the species listed in Appendix-I can only be subject to international trade upon issuing import and export permits.⁴⁰ With the exceptions of exchange among zoos, scientific exchange, and captive-bred species,⁴¹ there is a complete ban on commercial trade in Appendix-I species.⁴² Unlike Appendix-I, Appendix-II regulates the international trade of listed species to ensure they are not over-exploited. As exemplified by the chequered history of the African elephant that was down-listed from Appendix-I to -II

³⁴ EC- Measures affecting the approval and marketing of Biotech Products (EC-Biotech Case) WTO Panel , T/DS291/R, WT/DS292/R, WT/DS293 (2006)

³⁵ Philippe Sands and others (n 16) 398.

³⁶ Biosafety Unit, 'COP Decision' <<https://www.cbd.int/decision/cop/?id=12268>> accessed 10 December 2023.

³⁷ Philippe Sands and others (n 16) 409.

³⁸ Rajamani and Peel (n 26) 560.

³⁹ Article 2(1) CITES

⁴⁰ Articles 3(2) and 3 of CITES

⁴¹ Article 7 CITES

⁴² Articles 3(2)(d) and 3(3)(c) CITES

following the Southern-Eastern African countries divide and the Global North-Global South conservation-utilization debate⁴³, most species are listed on Appendix-II where international trade is allowed but only regulated⁴⁴. This questioned the status of CITES as a treaty designed to ban the international trade of endangered species⁴⁵ and raised concerns about its effectiveness in achieving this aim.⁴⁶ Again, the priority of the CITES comes to the fore; trade objectives cum utility of species⁴⁷ as canvassed by the Southern African countries⁴⁸, environmental protection and sustainability⁴⁹ as projected by the Eastern African countries and Global North NGOs⁵⁰ or hybridisation? Theoretically, the answer is tilted towards sustainability as canvassed by the Global North; in practice, the answer is utilisation and trade objectives, as exemplified in the overpopulation and down-listing of African elephants in Appendix-II. Except Appendix-I become populated like Appendix-II in the future, the case of the CITES is one where trade has trumped environmental concerns.

Questions have arisen as to which is the best approach: the CBD approach or the CITE approach? There is one common thread that crisscrosses both approaches; they are both fraught with political manipulation of COPs members. While the CBD can be politically manipulated with ease for its soft law nature, the CITES, though with more hardened obligations compared to the CBD is not immune from political manipulations as COPs members politically determine which of the species is to be listed and down-listed as have been witnessed about the African elephant. The primary aim of the CITES is trade; conservation only becomes paramount in cases of endangered species⁵¹; hence it has been stated that at the time the CITES was negotiated,

⁴³ Charis Thompson (ed), *Co-Producing CITES and the African Elephant* (Routledge 2004) 68.

⁴⁴ Ibid.

⁴⁵ Annecoos Wiersema, 'CITES and the Whole Chain Approach to Combating Illegal Wildlife Trade' (2017) 20 *Journal of International Wildlife Law & Policy* 207.

⁴⁶ Geoffrey Wandesforde-Smith, 'Looking for Law in All the Wrong Places? Dying Elephants, Evolving Treaties, and Empty Threats' (2016) 19 *Journal of International Wildlife Law & Policy* 365.

⁴⁷ Michael Bowman, 'A Tale of Two CITES: Divergent Perspectives upon the Effectiveness of the Wildlife Trade Convention: A Tale of Two Cites' (2013) 22 *Review of European, Comparative & International Environmental Law* 228.

⁴⁸ Charis Thompson (n 45) 73–75.

⁴⁹ Bowman (n 49).

⁵⁰ Charis Thompson (n 45).

⁵¹ Wandesforde-Smith (n 48) 368.

habitat loss wasn't of international concern.⁵² By implication, the CITES favour trade objectives than environmental concerns. On the other hand, the CBD was negotiated when there was a yearning for global habitat protection. Thus, the CBD is more concerned with conservation than trade.⁵³ The question of which approach is the best will therefore have to be answered in the context. Global North countries that have championed conservation, including animal rights, will easily take sides with the CBD. In contrast, Global South countries pursuing economic development will find solace in the CITES. Until there is a compromise between Global North and South, where a pluralistic approach is agreed on, the future of the conservation-trade relationship may remain troubled.⁵⁴

2.2 Climate Change Treaties and Trade

The trade-environment relationship under the climate change regime could best be described as an “unequal legal battle”⁵⁵ or what Emeka Chianu described as “The Horse and Ass Yoked”.⁵⁶ Illustratively, between 1750 and 2021, Greenhouse Gas (GHG) Emissions have been reported to increase from 280 parts per million (ppm) to 418 ppm, with a further projection of 870-1100 ppm by the end of the 21st century if the use of fossil fuel is not nipped in the bud.⁵⁷ Either it is as revealed in *Billy V. Australia*, *Urgenda V. Netherland*⁵⁸, *Juliana V. US*, *Milieudefensie v Shell*, *Earthlife Africa v. Minister for Environmental*

⁵² Bowman (n 49) 233.

⁵³ The CBD is not immune from trade objectives as exemplified in the Nagoya Protocol which has access to genetic resources and fair, equitable sharing of benefits arising from their utilisation as its objectives. Article 1 Nagoya Protocol.

⁵⁴ Rajamani and Peel (n 26) 572.

⁵⁵ Antoni Pigrau, “The Texaco-Chevron Case in Ecuador: Law and Justice in the Age of Globalization” (2014) 1(1) RCDA

⁵⁶ Emeka Chianu, “The Horse and Ass Yoked: Legal Principles to Aid the Weak in a World of Unequals” (2007) Inaugural Lecture Series. 91st Inaugural Lecture Series at the Akin Deko Auditorium, University of Benin, Nigeria on 20th September 125 (131)

<<http://www.nigerianlawguru.com/articles/jurisprudence/THE%20HORSE%20AND%20ASS%20YOKED,LEGAL%20PRINCIPLES%20TO%20AID%20THE%20WEAK%20IN%20A%20WORLD%20OF%20UNEQUALS.pdf>> accessed 9 December 2023.

⁵⁷ IPCC 2021, ‘Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change’ [2021] Cambridge University Press.

⁵⁸ *Urgenda Foundation V. The Netherlands*, Hague Dist Court (2015), Court of Appeal (2018)

Affairs, *Delgamuukw v. British Columbia*, or *Lliuya V. RWE AG*,⁵⁹ the trade-environment relationship under climate change regime remain a David V. Goliath entanglement because, in pursuance of industrialisation and trade objectives, the G20⁶⁰ keep generating GHG Emissions⁶¹ to the detriment of the environmental concerns of the vulnerable states who lack the financial capability for adaptation.⁶²

Climate Change negotiations were initiated by the United Nations General Assembly resolution 45/12 and culminated in adopting the 1992 United Nations Framework Convention on Climate Change (UNFCCC), which came into force on 21st March 1994.⁶³ The UNFCCC is fraught with different perspectives on measures that should be adopted to stabilise GHG emissions.⁶⁴ While the developed and middle-income countries prefer a climate change regime that advances their economic objectives, the vulnerable states and developing countries desire environmental protection. Small Island Developing states such as the Maldives and Tuvalu, that are now at risk of losing their island to sea level rise⁶⁵, want strict climate obligations as opposed to developed nations such as the US or members of the Organisation of Petroleum Exporting Countries (OPEC) who prefer not to be committed to a specific emission reduction for obvious trade benefits⁶⁶. The trade objectives and environmental protection agitations that bedevilled the UNFCCC negotiation turned out to be more linear than cyclical, as there seems not to be a meeting point between both sides of the divide. However, a compromise was reached⁶⁷ to make the UNFCCC a framework convention that postponed its main emission reduction objectives to the Kyoto protocol.⁶⁸ Does this not make the UNFCCC a failed piece of legislation from the onset? Of what importance is a treaty that cannot commit its state members to its objectives? Isn't a dead dog better than

⁵⁹ *Lliuya v RWE AG* Case No 2 0285/15 Essen Regional Court, on appeal.

⁶⁰ World's largest economies

⁶¹ Alan Boyle and Catherine Redgwell (n 3) 378.

⁶² L. Rajamani, 'The Increasing Currency and Relevance of Rights-Based Perspectives in the International Negotiations on Climate Change' (2010) 22 *Journal of Environmental Law* 391, 17.

⁶³ Benoit Mayer, 'The International Law on Climate Change' (Cambridge University Press 2018) 12.

⁶⁴ Alan Boyle and Catherine Redgwell (n 3) 381.

⁶⁵ Rajamani (n 63).

⁶⁶ Alan Boyle and Catherine Redgwell (n 3) 381.

⁶⁷ Philippe Sands and others (n 16) 299.

⁶⁸ Randall S. Abate, 'Climate Change and the Voiceless: Protecting Future Generations, Wildlife and Natural Resources' (Cambridge University Press 2020) 5.

one alive yet cannot bite or bark? The UNFCCC could have been akin to this dog safe for its introduction of some principles such as the precautionary principle, common but differentiated responsibility, common concern of humankind, intergenerational equity, and sustainable development, principles of non-discrimination and non-unilateral restriction of trade.⁶⁹

The UNFCCC's apparent inability to address the global climate catastrophe led to the introduction of the Kyoto Protocol. Its approach was to develop stronger commitments to reducing GHG emissions to at least 5 per cent below 1990⁷⁰ for developed countries while leaving developing countries with their previous commitment under the UNFCCC. The Kyoto approach sees both developed and developing states complying with their emission reduction commitment in breach. While the US, Canada and Australia paid a deaf ear to the precautionary and common but differentiated responsibilities principles,⁷¹ China and India seized the loophole in the Kyoto Protocol to increase their GHG emission for about two decades.⁷² The principles of “common concern of humankind” and intergenerational equity⁷³ were buried at the altar of trade and economic growth under the Kyoto regime; Abate referred to this as a “shameful reality.”⁷⁴ The Kyoto regime called for a serious compromise between developed and developing countries if the planet would not be overwhelmed by the global climate crises. With the US's rejection of the Kyoto Protocol in 2001, Canada's withdrawal in 2012, and Japan and Russia's refusal to be committed in its second phase⁷⁵, the Paris Agreement became the next port of call.

The main objective of the Paris Agreement is to reduce the risks and impact of climate change by holding the global average temperature below 2°C above pre-industrial levels and limiting it to 1.5°C above the pre-industrial level.⁷⁶ The Paris Agreement sought to realise these lofty goals through the instrumentality of the nationally determined contributions (‘NDCs’), which do not impose any emission reduction target on states but rather oblige them to self-determine their quota

⁶⁹ Article 3 UNFCCC.

⁷⁰ Article 3(1) Kyoto Protocol

⁷¹ Randall S. Abate (n 69) 5–6.

⁷² Alan Boyle and Catherine Redgwell (n 3) 385.

⁷³ Article 3 Kyoto Protocol

⁷⁴ Randall S. Abate (n 69).

⁷⁵ Alan Boyle and Catherine Redgwell (n 3) 391.

⁷⁶ Article 2(1) Paris Agreement.

towards emission reduction.⁷⁷ Was the Paris Agreement a success or failure? This question becomes pertinent, considering the Paris Agreement's oversimplified approach of shifting the burden of emission reduction to the states through the NDC.⁷⁸ While scholars such as Victor⁷⁹ and Dimitrov⁸⁰ considered it a success for being flexible enough to accommodate all interests, others such as Spash considered it a failure for upholding trade objectives above environmental concerns.⁸¹ Kahl and Weller agree that the Paris Agreement is confronted with a lack of legally binding obligations for employing a flexible approach.⁸²

One should agree with Abate, that the entire climate change regime under consideration begs the question rather than answer it, as the emission reduction targets themselves are now otiose considering emerging scientific climate change statistics.⁸³ Vulnerable states and individual victims are now taking recourse to litigation as a way out. Billy V. Australia, *Lliuya v. RWE* are a few examples of such concluded and ongoing litigation. Vanuatu, for instance, since 2002,⁸⁴ has threatened to invoke the advisory opinion jurisdiction of the International Court of Justice (ICJ) for a climate judicial remedy. This agitation was repeated in 2022 during COP27⁸⁵. All of these reinforce Abate's conclusion that the current climate change regime is a failure because trade objectives have been allowed to trump environmental concerns; hence, the most vulnerable victims, such as Vanuatu, just like Oswald Mtshali's poetic Boy on a swing, are keen on asking the ICJ: "When will I wear long trousers? Why was my father jailed?"

⁷⁷ Article 4(2) Paris Agreement.

⁷⁸ Randall S. Abate (n 69) 7.

⁷⁹ David G. Victor, 'Why Paris Worked: A Different Approach to Climate Diplomacy' [2015] *Yale Environment* 360.

⁸⁰ Radoslav S. Dimitrov, 'The Paris Agreement on Climate Change: Behind Closed Doors' (2016) 16 *Global Environmental Politics* 1.

⁸¹ Clive L. Spash, 'This Changes Nothing: The Paris Agreement to Ignore Reality' (2016) 13 *Globalizations* 928.

⁸² Kahl and Weller, 'Climate Change Litigation', (Verlag CH Beck oHG, 2021) 215.

⁸³ Randall S. Abate (n 69) 8.

⁸⁴ Timo Koivurova, 'International Legal Avenues to Address the Plight of Victims of Climate Change: Problems and Prospects' 22 34.

⁸⁵ Valerie Volcovici, 'From Pacific to Red Sea: Climate Court Action Gathers Wave of Support' *Reuters* (18 November 2022) <<https://www.reuters.com/business/cop/pacific-red-sea-climate-court-action-gathers-wave-support-2022-11-18/>> accessed 16 December 2023.

3. PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW

This part discusses principles of international environmental law that underpin the trade-environment relationship. Though not an exhaustive list⁸⁶, three of such principles are pinpointed for discussion in this section: sustainable development, precautionary and the common but differentiated responsibility principle, partly for their ubiquitous nature and relevance to the scope of the work.

3.1 Sustainable Development

The principle of sustainable development has manifested its ubiquitous nature in different treaties and tribunal judgments.⁸⁷ Though doubtful, it has been stated that it is a principle that has attained the status of customary international law⁸⁸. With an origin formally traced to the adoption of the Rio Declaration in the 1992 United Nations Conference on Environment and Development (UNCED)⁸⁹, the principle of sustainable development seems to be neither an environmental chimaera nor a panacea, as it harmonised both environmental and trade variables as yin and yang necessary for the actualisation of a better immediate and future world as encapsulated in the 1987 Brundtland Report.⁹⁰ Illustratively, the ICJ, in applying the principle of sustainable development in the *Gabcikovo-Nagymaros* case, held that the spirit and letter of the principle demand a reconciliation of both economic and environmental variables. In this manner, the ICJ refused to stop the operation of the *Gabcikovo* plant despite its obvious environmental consequences and only admonished the parties to find a satisfactory solution for releasing the appropriate volume of water into the main river.⁹¹ The WTO Appellate Body decision in the *Shrimp/Turtle* case was also on four with the ICJ decision, as it held that

⁸⁶ Other principles within the scope of this work include principles of sovereignty and responsibility, intergenerational equity, the obligation not to cause environmental harm, common concern of humankind, common heritage of humankind, the polluter pay principle, principle of prior informed consent, the preventive principle, and duty to provide prior notification and to consult in good faith.

⁸⁷ Philippe Sands and others (n 16) 218.

⁸⁸ Sands, P., 'International Courts and the Application of the Concept of "Sustainable Development"' [1999] 3 Yearbook of UN Law 389.

⁸⁹ Principle 27 Rio Declaration.

⁹⁰ UN Secretary-General and World Commission on Environment and Development, 'Report of the World Commission on Environment and Development': [1987] *The Brundtland Report* <<https://digitallibrary.un.org/record/139811>> accessed 17 December 2023.

⁹¹ ICJ Reports (1997) 78, para. 140

the principle integrates economic and social development and environmental protection, hence its application per Article XX(g) of the General Agreement on Trade and Tariff (GATT) to uphold the US conservation measures.⁹²

Away from the case law, the principle of sustainable development could easily be gleaned in different treaties. From the United Nations Convention on the Law of the Sea (UNCLOS)⁹³ to GATT, UNFCCC, CBD, and Nagoya Protocol, the principle of sustainable development make a bold statement on balancing trade and environmental concerns. This makes it apt to consider whether the principle has formally recognised the normative right to development. Again, the answer to this question throws a spanner into whatever harmonised answer the courts and tribunals have been trying to build with the principle of sustainable development. Not surprisingly, the US dissociated itself from any interpretation that could mean that the right to development has been given flesh and blood through the principle of sustainable development while Global South countries, especially African countries, already with a right to development in their normative regional statutes, fight back by ensuring that environmental objectives do not override their developmental goals in international negotiations.⁹⁴ The question that remained to be answered is how the US, a beneficiary of the normative interpretation of the principle of sustainable development in the Shrimp/Turtle case, suddenly changed the goalpost to argue that the principle is just a goal and does not amount to a right. Accepting the principle of sustainable development as a right to development by the US would have settled the Global North-South development and conservation debate under a harmonised system that balances both variables. Thus as stated by Abate, the principle of sustainable development may be another “greenwashing” adopted by industrialised nations to achieve their capitalist selfish goal ostensibly.⁹⁵

3.2 Precautionary and Common but Differentiated Responsibilities

The precautionary principle concern itself with anticipatory measures that need to be taken to avoid environmental harm where

⁹² 38 ILM 121 (1999), para 129.

⁹³ Preamble and Article 61(3), 62(1), 119(1)(a) and 150(b) of the UNCLOS
Philippe Sands and others (n 16) 229.

⁹⁵ Randall S. Abate (n 69) 9.

there is scientific uncertainty.⁹⁶ The principle has received massive support from vulnerable victims of environmental damage, such as the Alliance of Small Island States (AOSIS).⁹⁷ It has, however, been criticised for having a vague and unclear meaning with the potential to interfere with trade unjustly⁹⁸, just as it has been seen to be in opposition to the cost-benefit analysis of environmental measures.⁹⁹ Its traducers, mainly from the Global North, has refused to apply it as a climate solution mechanism on the ground that it has no bases in international law following the *Corfu Chanel* case¹⁰⁰, where there was a known risk to other states.¹⁰¹ Regardless of the controversy surrounding the precautionary principle, it has gain recognisance in different environmental treaties such the CBD, UNFCCC, Cartagena Protocol, Agenda 21, among others. The ICJ in the *Pulp Mills* case made recourse to the precautionary principle as an interpretative aid, albeit limitedly.¹⁰² The WTO DSS has also had the opportunity to apply the precautionary principle in the *Hormones* and *Biotech Product* cases. In both instances, it refused to decide whether it is a principle of international law. Considering the controversy surrounding the principle, it will not be difficult to agree with Hunter et al., that the use of environmental insurance or bonds will be effective in implementing the precautionary principle.¹⁰³

The principle of Common but Differentiated Responsibility (CBDR), as captured in Principle 7 of the Rio Declaration, is fallout of the general principle of equity in international law which, in the case of international environmental law recognises the significance of mainstreaming Global South interests into the application of international environmental law by Global North countries.¹⁰⁴ Its application in international environmental law has been justified by the Aristotelian postulation of treating dissimilar cases with different

⁹⁶ Principle 15 of the Rio Declaration.

⁹⁷ Philippe Sands and others (n 16) 230.

⁹⁸ Philippe Sands and others (n 16).

⁹⁹ Mark Geistfeld, 'Implementing the Precautionary Principle' [2001] 31 Environmental Law Reporter 11326-11327.

¹⁰⁰ ICJ Reports (1949) 18-22

¹⁰¹ Alan Boyle and Catherine Redgwell (n 3) 170.

¹⁰² Rajamani and Peel (n 26) 314.

¹⁰³ David Hunter, James Salzman, and Durwood Zaelke (n 1) 465.

¹⁰⁴ Anne Gallagher, 'The "New" Montreal Protocol and the Future of International Law for Protection of the Global Environment' (1992) 14 Houston Journal of Law 267.

barometers¹⁰⁵ where different strokes apply to different folks. Apart from its integration into treaty law such as the UNFCCC, Kyoto Protocol¹⁰⁶ and Paris Agreement through the NDCs¹⁰⁷, it has also been called in aid for judicial interpretation by the WTO in the Shrimp/Turtle dispute¹⁰⁸. CBRD has been criticised for being another expression of the right to development that exacerbates the climate change crises.¹⁰⁹ Thus, while India and China remain beneficiaries of the CBRD, it has not been of any benefit to other developing countries¹¹⁰. India and China have refused to lower their GHG emission because the US has not done the same by applying the CBRD. The question that should be asked is whether one wrong could justify another. Suppose countries of the Global North keep emitting GHG emissions to the detriment of Global South countries. What benefit is it for the Global South countries such as India and China to intensify GHG emissions? Until the CBRD become internally applicable between advanced developing countries and non-advanced developing countries in the Global South, it may be unconscionable for the Global South to keep blaming the Global North for global climate crises.

4. UNILATERAL TRADE MEASURES

Though environmental protection is not one of the main objectives of the WTO, it should be noted that the WTO system cannot operate without considering environmental interests¹¹¹. Thus, the emergence of the WTO itself was followed by creating a Committee on Trade and the Environment (CTE),¹¹² just as the Marrakesh Agreement referred to environmental objects in its preamble. The practice has seen states adopting trade-related measures in pursuing environmental

¹⁰⁵ Rajamani and Peel (n 26) 321.

¹⁰⁶ Article 3 UNFCCC and Kyoto Protocol.

¹⁰⁷ Lavanya Rajamani, 'Ambition and Differentiation in the 2015 Paris Agreement: Interpretative Possibilities and Underlying Politics.' (2016) 65(2) *International & Comparative Law Quarterly* 493.

¹⁰⁸ US-Import Prohibition of Certain Shrimp and Shrimp Products -15 June 2002/WTO Doc WT/DS58/RW

¹⁰⁹ Randall S. Abate (n 69) 10.

¹¹⁰ Marie Blévin, 'The Clean Development mechanism and the Poverty Issue' (2011) 41 *Environmental Law* 777.

¹¹¹ Harro Van Asselt (n 4) 756.

¹¹² WTO, 'Decision on Trade and Environment' (15 April 19940 LT/UR/D-6/2

interests. This part explores trade measures such as unilateral trade measures and the environmental exceptions in GATT Article XX.

Owing to the concept of state sovereignty, states often frown at unilateral trade restrictions by other states. They do not hesitate to invoke legal processes against such unilateral trade measures. The *Swordfish* case, where the EU, for instance, not only commenced WTO proceedings against Chile for its restriction of Spanish fishing vessels from accessing its ports but also counterclaimed the UNCLOS proceedings commenced by Chile on the conflict over distant water fishing nations and coastal states and eventually settled the dispute through UNCLOS negotiation mechanism illustrate the extend states could go in kicking against unilateral trade restrictions.¹¹³ Similar reactions of this nature were also recorded in the EU-Faroe Islands Herring Stock Dispute at the WTO.¹¹⁴ One could continue in this manner and refer to other cases such as the US Gasoline Standards case, the Sea Product case, the Shrimp-Turtle Case and even the locus classicus dispute of Tuna/Dolphin, all of which shall be discussed fully in the next section and were provoked as a result of attempts to unilaterally restrict trade by one state which was considered by the other state as overreaching and extraterritorial.

While the GATT panel's decision in the Tuna/Dolphin case seems stringent and non-accommodative of states' obligation to protect the environment and its citizens' public health, it has been argued by some scholars that the case creates room for product-related processes and production method as against non-product related product and processes.¹¹⁵ However, WTO jurisprudence has since made progress, thus rendering the Tuna/Dolphin case a bad law.¹¹⁶ Relying heavily on Article XX of GATT and considering the chapeau, which further limits the exceptions created therein, WTO Appellate Body has aligned itself with state unilateral trade restrictions, provided it could be justified under the exceptions and chapeau in Article XX. This was the attitude of the Appellate Body in the US Gasoline Standards and Shrimp-Turtle

¹¹³ Marcos A. Orellana, 'The Swordfish Dispute Between the EU and Chile at the ITLOS and the WTO' (2002) 71 *Nordic J Int'l L* 55.

¹¹⁴ Yoshimichi Ishikawa, 'The EU-Faroe Islands Herring Stock Dispute at the WTO: The Environmental Justification.' [2014] ASIL.

¹¹⁵ Thomas Schoenbaum, 'Free International Trade and the Environment: Irreconcilable Conflict?' (1992) 86/40 *American Journal of International Law* 700,722.

¹¹⁶ *Ibid* 762.

cases where respect for the Chapeau, good faith, and international environmental agreement was emphasised, respectively.¹¹⁷ Unlike the GATT panel in the Tuna/Dolphin case that neglected or declined to accommodate environmental concerns, WTO jurisprudence, especially through the Shrimp-Turtle case, now accommodates environmental variables through the exceptions enshrined in Article XX of GATT.¹¹⁸

5. WTO JURISPRUDENCE

Though the current climate change regime, as reflected in the treaties discussed in part two of this chapter, is yet to be the subject of a direct dispute before the WTO DRS¹¹⁹, renewable energy cases decided by the WTO DRS will suffice in deducing the attitude of the WTO system towards future climate change disputes. The first such dispute is the case of the measures affecting the renewable energy generation sector and Canada, where the WTO Appellate Body held that renewable energy support measures by the Canadian government of Ontario province were a contravention of multilateral trade rules.¹²⁰ The second such case is *India v US*,¹²¹ where renewable energy support measures were also struck down by the WTO DRS. Though India later successfully challenged the US support measures¹²², it should be noted that these rulings rejecting renewable energy measures were given with the invocation of the non-discriminatory principle of the WTO system against the use of local content requirements. This again reinforced the finding in part two of this chapter that trade objectives reign supreme for the climate change regime.

As noted earlier, the Tuna/Dolphin cases decided by the defunct GATT panels are now otiose, especially the part of the findings against the unilateral trade restriction pursuant to Article XX of GATT. Thus,

¹¹⁷ Alan Boyle and Catherine Redgwell (n 3) 779–780.

¹¹⁸ This allowance is not also without limitation as have been shown through the Biotech dispute.

¹¹⁹ Harro Van Asse (n 4) 765.

¹²⁰ Canada-Certain Measures Affecting the Renewable Energy Generation Sector and Canada – Measures Relating to the Feed-In Tariff Program (Appellate Body Report) (6 May 2013) WTO Docs WT/DS412/AB/R

¹²¹ India- Certain Measures Relating to Solar Cells and Solar Modules (Appellate Body Report) (16 September 2016) WTO Doc WT/DS456/AB/R

¹²² United States-Certain Measures Relating to the Renewable Energy Sector (Panel Report) (27 June 2019) WTO Doc WT/DS510/R

in the Reformulated Gasoline Case,¹²³ the WTO Appellate body overruling the panel considered the US Gasoline measures that unilaterally interfered with Brazil and Venezuela's trade interest as sufficient fulfilment of the requirement in Article XX(g) of GATT, thus paving the way for new reasoning that mainstream environmental concerns into trade measures using WTO laws; a departure from the tuna/Dolphin cases.

The facts and issues raised in the Shrimp/Turtle¹²⁴ cases are similar to those of the Tuna/Dolphin case. Here, the US applied its domestic conservation laws extraterritorially to activities carried out within the jurisdiction of India, Malaysia, Pakistan and Thailand and justified this unilateral trade restriction on the exceptions created in Article XX of GATT. The principle of sustainable development discussed in part three of this chapter was invoked by the Appellate Body in justifying the US unilateral measures pursuant to Article XX of GATT while also holding that the US measures were unjustifiably discriminatory under the chapeau to Article XX. The Shrimp/Turtle case is innovative for applying the principle of sustainable development and balancing the trade-environmental variables.

In the Asbestos case,¹²⁵ where Canada requested the WTO DRB to consider the legality of a French decree with the WTO Agreement, the Appellate Body rejected Canada's three grounds of challenge to the Panel's ruling. It held, among others, that France's health protection measures purportedly restricting Canada's trade objectives were necessary under Article XX(b) of GATT. On the other hand, in the Brazil Retreaded Tyres Case¹²⁶, the Appellate Body found that the Brazilian ban on the EU's importation of re-treaded tyres did not satisfy the dictates of Article XX chapeau.

6. CONCLUDING REMARKS

The main finding of this work is that while considerable efforts have been made to mainstream environmental protection into trade

¹²³ United States-Standards for Reformulated and Conventional Gasoline, Report of the Panel, 29 January 1996, WT/DS2/R

¹²⁴ AB-1998-4, 12 October 1998, 33 ILM 188 (1999)

¹²⁵ European Communities-Measures Affecting Asbestos and Asbestos-Containing Products, Report of the Appellate Body, WT/DS135/AB/R, 12 March 2001 (Asbestos, Appellate Body Report)

¹²⁶ Brazil-Measures Affecting Imports of Retreaded Tyres,

objectives through the WTO jurisprudence, there remain some forms of market failures, making the trade-environment relationship lopsided, with inadequate attention given to the environment, which brings to fore the need to revisit David Hunter's metaphoric invisible elbow (trade) destroying the common goods (environment) created by an invisible hand (nature)¹²⁷. It is concluded that until there is a compromise between Global North and South, habitat and ecocentric-based approaches, conservationists and non-conservationists, where a pluralistic approach is agreed on, the future of the trade-environment relationship may remain troubled and uncertain.¹²⁸

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¹²⁷ David Hunter, James Salzman, and Durwood Zaelke (n 1).

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We must set an example now and move environmentalism from being the philosophy of a passionate minority... to a way of life that automatically integrates ecology into governmental policy and normal living standards.

— *Leonardo DiCaprio* —

International Law Application to Transboundary Pollution: Solutions to Mitigate Mining Contamination in the Elk–Kootenai River Watershed

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ABSTRACT

The Elk Valley is home to five of the six largest mines in British Columbia, with ongoing plans for further expansion. These headwater coal mines have contributed to selenium pollution in the freshwater ecosystems of the transboundary Elk – Kootenai River watershed, evidenced in part by the \$60 million fine imposed on Teck Resources Ltd. under Canada’s *Fisheries Act* in 2021 for the ‘deposit of deleterious substances’. Indigenous communities, including the Ktunaxa Nation, and various other organizations on both sides of the border, alongside governments in the United States, have been calling for higher standards of mining pollution control originating in Canada and for the International Joint Commission to make recommendations on this issue. Two agreements exist between the countries that may be relevant here, including the Boundary Waters Treaty (1909) and Columbia River Treaty (1964). In this chapter, these agreements describing the potential role of the International Joint Commission are analyzed, along with the outlining of the current process for this organization to make recommendations to resolve this ongoing, hot-button issue. The examples from case law and other international agreements pertaining to pollution are used to formulate a two-part conclusion in the form of (1) a short-term solution to effectively communicate and facilitate a resolution of transboundary mining pollution in the Elk – Kootenay River watershed; (2) a long-term solution to settle future disagreements regarding transboundary pollution between Canada and the United States.

Keywords: International law; Environmental law; Transboundary impacts; Mining pollution; International Joint Commission; United States; Canada

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1. INTRODUCTION

In the spring of 2021, the headlines read, “Teck Coal given record-breaking \$60 million fine for contaminating BC rivers,” as media outlets broke down the largest fine ever imposed under Canada’s federal *Fisheries Act* (ss. 36(3)), prohibiting the deposit of deleterious substance.¹ The company, Teck Resources Ltd., hereafter referred to as “Teck”, was found to have been polluting the Fording River in south-eastern British Columbia (BC) with selenium at concentrations well above BC’s safety guidelines or the permissible limits granted by the Government of the Province of BC for almost a decade.² Teck’s four coal mines in question are located in the rural Elk Valley, approximately 130 kilometres from the Canada-United States Roosville border crossing. From the upper Fording River watershed, where the highest selenium levels were found, water flows into the Elk-Kootenai River watershed, a drainage that straddles BC and Montana (USA) and is part of the larger Columbia River Basin that flows into the Pacific Ocean. While the BC Provincial Court handed Teck their \$60 million fine, Teck has yet to answer to selenium pollution flowing into Montana, and it is unsure when or if they will.³

There are few agreements or cases that can be applied to this issue. One agreement, over a century old, is the Boundary Waters Treaty of 1909 (“BWT”).⁴ Under the BWT, the International Joint Commission (“IJC”) was established to solve issues over transboundary water between Canada and the United States. Another treaty, which has been under negotiations to modernize for several years, applies only to

¹ Environment and Climate Change Canada, “Teck Coal ordered to pay \$60 million under the Fisheries Act and must comply with a Direction requiring reduction measures,” <<https://bit.ly/3Jgx5Cc>> [ECCC Investigation]; Bob Weber, “Teck Coal given record-breaking \$60M fine for contaminating BC rivers,” *The Canadian Press* (March 26, 2021), <<https://globalnews.ca/news/7721674/coal-teck-fined-contaminating-bc-rivers/>> [Weber]; Ainslie Cruickshank, “Teck fined \$60 million for water pollution in BC’s Elk Valley,” *The Narwhal* (March 26, 2021), <<https://bit.ly/3Ian3kV>> [Cruickshank 2021]; *Fisheries Act*, RSC 1985, c F-14, s 1 [*Fisheries Act*]; *R v Teck Coal Limited*, 2021 BCPC 118 [*R v Teck*].

² ECCC Investigation, *supra* note 1; Weber, *supra* note 1.

³ Ainslie Cruickshank, “Teck is fighting Montana pollution rules it doesn’t have to follow. Why? Look to BC,” *The Narwhal* (February 2, 2022), <<https://thenarwhal.ca/teck-resources-selenium-fight-montana/>> [Cruickshank, 2022].

⁴ The Boundary Waters Treaty of 1909, Canada & US, January 11, 1909, *International Joint Commission* [BWT].

this specific area at issue: the Columbia River Treaty (“CRT”).⁵ Here, we seek to determine if either of these agreements can apply to this issue; what is the possible role of the IJC? What has prior case law said on the subject of transboundary pollution and use of the IJC? If no solution is apparent through these means, are there other international laws or policies that can apply to this situation?

A solution is needed to address the contentious international aspect of this issue, but it is unclear whether existing international agreements help reaching a solution. After discussing the history of selenium pollution in the Elk Valley and Lake Koocanusa, what progress, if any, has been made so far to solve this issue, and how issues of transboundary pollution have been solved in the past between Canada and the United States, we analyze different approaches to reaching a solution, such as through the BWT and IJC. The IJC has been called on in the past to help reach conclusions for similar issues and should be again here as we conclude it is the most effective existing agreement; however, evaluating the role of the IJC raises another problem: The BWT is not an effective agreement for dealing with transboundary pollution between Canada and the United States. It is recommended that the BWT undergoes amendments to better consider and resolve transboundary pollution issues.

2. BACKGROUND

2.1 Selenium Pollution from Coal Mines in the Elk Valley, BC

The Elk Valley has a rich, mining history. Coal mining has occurred in the Elk Valley since 1898, with Teck operating the Fording River mine and Greenhills mine since 1971 and 1981, respectively.⁶ When the Fording River mine was built, settling ponds were built nearby as an attempt to minimize sediment deposits in the river resulting from the mine; however, fish, including the Westslope Cutthroat trout (*Oncorhynchus clarkii lewisi*), which is a species listed as a “species of special concern” under Canada’s *Species at Risk Act*, eventually made their way into the ponds, signifying the inability to ensure the ponds remained disconnected from the Fording River.⁷ In addition,

⁵ Columbia River Treaty, Canada & US, January 17, 1961, came into force September 16, 1964 [CRT].

⁶ *R v Teck*, *supra* note 1 at para 2.

⁷ *Ibid*, at para 5; *Species at Risk Act*, SC 2002, c 29 [SARA].

waste rock from the mines can often precipitate dissolved calcium and selenium when exposed to oxygen or water.

Selenium is a naturally occurring, non-metal trace mineral that is found naturally in many living organisms, including humans, required in trace amounts for normal body function.⁸ Selenium is often precipitated into water systems as a byproduct of surface mining operations due to overburden waste rock storage and exposure to gradual weathering over time, resulting in accumulations that can be toxic in high concentrations.⁹ The element has a tendency to bio-accumulate in the food chain of freshwater ecosystems where inorganic selenium becomes bioavailable to higher trophic levels in its organic form after ingestion and interaction with primary producers (e.g., bacteria and phytoplankton).¹⁰ For context, selenium concentrations in the Fording River have recently been as high as 208 micrograms per litre ($\mu\text{g/L}$; February, 2021), more than twice their permitted discharge limit (90 $\mu\text{g/L}$) and significantly higher than BC's 'safe for aquatic life' limit of 2 $\mu\text{g/L}$;¹¹ yet just upstream of the mines, selenium concentrations typically rest around 1 $\mu\text{g/L}$.¹²

⁸ Krystyna Pyrzynska & Aleksandra Sentkowska, "Selenium in plant foods: Speciation analysis, bioavailability, and factors affecting composition" (2021) 61 (8) *Critical Reviews in Food Science and Nutrition* 1340-1352, <<https://doi.org/10.1080/10408398.2020.1758027>>.

⁹ Jacqueline R Gerson, and others, "Mercury and selenium loading in mountaintop mining impacted alkaline streams and riparian food webs" (2020) 150 (1) *Biogeochemistry* 109-122, <<https://doi.org/10.1007/s10533-020-00690-7>>.

¹⁰ Thomas R Cianciolo, and others, "Selenium bioaccumulation across trophic levels and along a longitudinal gradient in headwater streams" (2020) 39 (3) *Environmental Toxicology and Chemistry* 692-704, <<https://doi.org/10.1002/etc.4660>>; Dominic E Ponton, and others, "Selenium interactions with algae: Chemical processes at biological uptake sites, bioaccumulation, and intracellular metabolism" (2020) 9 (4) *Plants* 528, <<https://doi.org/10.3390/plants9040528>>.

¹¹ British Columbia, AJ Downie, Director of Mining Authorizations, *Permit 107517* under the *Environmental Management Act*, <<https://j200.gov.bc.ca/pub/ams/download.aspx?PosseObjectId=139003236>>.

¹² Weber, *supra* note 1; Cruickshank 2022, *supra* note 3; *R v Teck*, *supra* note 1 at para 8, 9 & 10; ECCC Investigation, *supra* note 1; Weber, *supra* note 1; Cruickshank 2021, *supra* note 1; Behnaz Rezaie, & Austin Anderson, "Sustainable resolutions for environmental threat of the acid mine drainage" (2020) 717 *Science of the Total Environment* 137211, <<https://doi.org/10.1016/j.scitotenv.2020.137211>> [Rezaie & Anderson]; Nosa O Egiebor & Ben Oni, "Acid rock drainage formation and treatment: a review" (2007) 2 (1) *Asia-Pacific Journal of Chemical Engineering* 47-62, <<https://doi.org/10.1002/apj.57>> [Egiebor & Oni]; K Rambabu, Fawzi Banat, Quan Minh Pham, Shih-Hsin Ho, Nan-Qi Ren, & Pau Loke Show, "Biological

The issue of selenium pollution also has a history in the Elk Valley. Selenium was first discovered in the Fording River in 1995.¹³ However, it was still close to a decade before scientific consensus found that high selenium concentrations could be harmful to the biotic environment. In 2012, Environment and Climate Change Canada (“ECCC”) determined through water quality and fish sampling that the Upper Fording River had selenium levels within a range categorized as “adverse effects.”¹⁴ Studies on selenium, its concentrations, and preventative measures had been conducted for years prior through independent expert studies and by Teck’s own employees.¹⁵ In 1995, when it was discovered that soluble selenium was mobilizing due to the waste rock, there were “990 million cubic metres of waste rock placed in the Fording River and Greenhills mines.”¹⁶ That number increased to 2.2 billion cubic metres by 2008, 2.5 billion by 2011, and 2.62 billion by 2012.¹⁷ Teck was also given approval for an amendment to their Fording River mine certificate (under the BC *Environmental Assessment Act*) in 2017 to increase the amount of waste rock stored at the facility, transferred from the Greenhills operation.¹⁸ Though, 2012 is an important year, because in 2012, Teck admitted depositing a deleterious substance into the Fording River.

Teck’s \$60 million fine in 2021 under *Fisheries Act* was formulated only in relation to the year 2012. However, it was recognized that pollution occurred, at the very least, between a timeframe of 2009 to 2021.¹⁹ Since 2012, Teck has also been charged two times under the *Environmental Management Act*,²⁰ and ordered by the Minister of

remediation of acid mine drainage: Review of past trends and current outlook" (2020) 2 *Environmental Science and Ecotechnology* 100024, <<https://doi.org/10.1016/j.ese.2020.100024>> [Rambabu et al].

¹³ *R v Teck*, *supra* note 1 at para 11.

¹⁴ Environment and Climate Change Canada, “Teck Coal Limited ordered to pay \$60 million under the Fisheries Act and must comply with a Direction requiring pollution reduction measures” <<https://bit.ly/3Jgx5Cc>> accessed August 29, 2022.

¹⁵ *Ibid.*, at para 12 & 13.

¹⁶ *R v Teck*, *supra* note 1 at para 11.

¹⁷ *Ibid.*

¹⁸ Ben R Collison, Patrick A Reid, Hannah Dvorski, Mauricio J Lopez, Alana Westwood, & Nikki Skuce, “Undermining environmental assessment laws: post-assessment amendments for mines in British Columbia, Canada, and potential impacts on water resources” (2022) 7 (1) *FACETS* 611-638, <<https://www.facetsjournal.com/doi/full/10.1139/facets-2021-0106>> [Collison et al].

¹⁹ *R v Teck*, *supra* note 1 at para 22.

²⁰ *Ibid.*, at para 26; *Environment Management Act*, SBC 2003, c 54.

Environment to create an Elk Valley Water Quality Plan.²¹ These charges were laid because of continuous damage resulting from selenium and calcite from waste rock, harm to species in the Fording River and the larger watershed, and harm identified to the Ktunaxa Nation in their traditional territory by polluting their water supply.²²

2.2 International Aspect of the Issue

The Ktunaxa Nation traditional territory spans across the Kootenay Region of BC, including the Elk Valley, Fording River and Lake Koocanusa, and through the states of Montana, Idaho, and Washington.²³ European settlement led to the creation of the present six Bands: four solely in BC and two within the United States.²⁴ In *R v Teck*, Vickie Thomas, the operational director of the Ktunaxa Nation Council Lands Sector, provided a statement in which she said, “Ktunaxa believe that they must care for all living things, and in doing so, we must ensure that the water is clean and pure as it is the giver of life.”²⁵ Thomas followed by identifying concerns about water quality and the safety for Ktunaxa to consume contaminated fish and impair their fishing rights.²⁶ In her address to the court she also said this pollution had led to “alienation of [her] people from [their] lands and waters.”²⁷ This harm identified by the Ktunaxa Nation in their traditional territory was cited as an aggravating factor in determining Teck’s fine.²⁸ In 2013, Teck and the Ktunaxa Nation signed a joint management agreement to conserve 700 hectares of land Teck had just purchased; they agreed to manage the land for conservation purposes to protect fish and wildlife habitat.²⁹ This includes land on the Canada side of the Canada-United States border near the Elk-Kootenai watershed and Lake Koocanusa.

Lake Koocanusa, downstream of the Fording and Elk rivers, spans the Canada-US border between BC and Montana. In 2020, Montana’s Department of Environmental Quality determined that 95 percent of

²¹ British Columbia, Minister of Environment, *Ministerial Order No. M113* (April 15, 2013), under the *Environmental Management Act*, SBC 2003, c 54, s 89, 90.

²² *R v Teck*, *supra* note 1 at para 23.

²³ *R v Teck*, *supra* note 1 at para 16; Ktunaxa Nation, “Who We Are,” <<https://www.ktunaxa.org/who-we-are/>> accessed August 2, 2022 [Ktunaxa Nation].

²⁴ Ktunaxa Nation, *supra* note 23.

²⁵ *R v Teck*, *supra* note 1 at para 16 & 17.

²⁶ *Ibid.*

²⁷ Weber, *supra* note 1.

²⁸ *R v Teck*, *supra* note 1 at para 23.

²⁹ *Ibid.*, at para 27.

selenium entering the lake came from the Elk River.³⁰ This assessment delivered by Kelly and Sullivan (2020) had been worked on since 2015 in partnership with BC officials, local Indigenous peoples and scientists.³¹ This study proposed a selenium standard of 0.8 µg/L, and the level in Lake Koocanusa as of 2020 was 1 µg/L and slowly increasing.³² After negotiation, Montana, BC and the Ktunaxa Nation Council agreed to a selenium standard of 0.85 µg/L in the Koocanusa reservoir and Montana officially adopted these new limits in December of 2020; however, because Teck's coal mines are located in Canada, they are not subject to Montana's state rules.³³ While BC approved the 0.85 µg/L standard, BC water quality guidelines, which are not legally binding, are still 2 µg/L.³⁴ Lawyers for Teck submitted a petition to the Board of Environmental Review in Montana opposing the new Montana standard, arguing it is illegal and targets their mining operations.³⁵ Several environmental organizations and Montana's Department of Environmental Quality wrote to the Board in support of the standard.³⁶ To date, the Board of Environmental Review has not reached a conclusion and the transboundary pollution conflict remains unresolved.

2.3 Historical Dealings of Transboundary Harm between Canada and the United States

No transboundary pollution issue between Canada and the United States can be assessed without reference to the *Trail Smelter* case.³⁷ This case is described as a “touchstone for international environmental law,” and it is often the only case cited in instances of transboundary damage settled by applying international law principles on State liability for cross-

³⁰ Cruickshank 2022, *supra* note 3; Myla Kelly & Lauren Sullivan, September 24, 2020, “Establishing Selenium Standards for Lake Koocanusa and Kootenai River that Protect Aquatic Life,” Montana Department of Environmental Quality, <https://deq.mt.gov/files/DEQAdmin/BER/Documents/AGENDA/DEQ_SMS.pdf> [Kelly & Sullivan].

³¹ Cruickshank 2022, *supra* note 3; Kelly & Sullivan, *supra* note 29.

³² Cruickshank 2022, *supra* note 3; Kelly & Sullivan, *supra* note 29.

³³ Cruickshank 2022, *supra* note 3.

³⁴ *Ibid.*

³⁵ Cruickshank 2022, *supra* note 3.

³⁶ *Ibid.*

³⁷ Arthur K Kuhn, “The Trail Smelter Arbitration—United States and Canada (1941)” (1938) 32 (4) *The American Journal of International Law* 785-788 [Trail Smelter Arbitration].

border damage.³⁸ This case was over an issue of air pollution from a smelter in Trail, BC, causing damage to Washington State farmlands for 13 years.³⁹ Canada and the United States brought the matter before the IJC under Article 9 (looking for a recommendation but not a decision), and the IJC recommended the American farmers be paid \$350,000 as compensation for the damages from air pollution.⁴⁰ The countries then submitted this case to a separate special arbitration tribunal in 1935, where Canada agreed to pay the damages recommended by the IJC that were supported by the tribunal. In 1941, during the tribunal's final decision, they stated that "no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence."⁴¹ This case established several international environmental law principles, including: the state has a duty to prevent transboundary harm, and the "polluter pays" principle requiring the polluting state to pay for transboundary damage they cause.⁴² Many international agreements have ever since adopted these principles; however, no agreements between Canada and the United States have included these principles. The existing agreements between Canada and the United States that may be relevant are discussed next.

2.4 Agreements Regarding Transboundary Pollution between Canada and the United States

The Boundary Waters Treaty, 1909

The BWT was signed between Canada and the United States to settle disputes between the two countries over the rights, obligations, and interests of each other regarding the use of boundary waters.⁴³ The

³⁸ Rebecca Bratspies & Russell Miller, *Transboundary Harm in International Law*, 2006, Cambridge: Cambridge University Press, p.3 [Bratspies & Miller]; Jutta Brunnée, "Review of *Transboundary Harm in International Law: Lessons from the Trail Smelter Arbitration* by Rebecca M Bratspies, Russell A Miller" (2008) 102 (2) *The American Journal of International Law* 395-400, Cambridge: Cambridge University Press, p.395 [Brunnée].

³⁹ Bratspies & Miller, *supra* note 38 at page 27.

⁴⁰ Bratspies & Miller, *supra* note 38 at page 27 & 28; Brunnée, *supra* note 38 at page 395.

⁴¹ Trail Smelter Arbitration, *supra* note 37; Bratspies & Miller, *supra* note 38 at page 127.

⁴² Trail Smelter Arbitration, *supra* note 37; Bratspies & Miller, *supra* note 38 at page 3. -u-s-officials/> [Lavoie].

⁴³ *Ibid.*

Preliminary Article of the BWT defines “boundary waters” as “waters from main shore to main shore of the lakes and rivers and connecting waterways, or the portions thereof, along which the international boundary between the United States and Canada passes...,”⁴⁴ which, using this definition, would include the Elk-Kootenai watershed. Applying the BWT to pollution issues, the relevant article is Article IV, which prohibits pollution to boundary waters on either side if it would injury health or property of the other side.⁴⁵ This is recognized as the “first international pollution treaty in history” by some, but it should also be noted that the main priority is not to prohibit pollution, but to protect the rights of each country.⁴⁶

Since its inception, the BWT has regulated and solved disputes regarding boundary waters between the two countries. This has largely been done through the IJC, which was formed as a permanent Commission under the BWT and is responsible for its implementation.⁴⁷ The IJC has many vital roles as established under the BWT. Article VII establishes that the IJC “shall have jurisdiction over and shall pass upon all cases involving the use or obstruction or diversion of the waters with respect to which under Article III or IV...”⁴⁸ This establishes, therefore, that the IJC is to control and decide on “uses or obstructions or diversions, temporary or permanent” of boundary waters on either side and construction, such as dams or pollution along any boundary waters.⁴⁹

The BWT and IJC have played essential roles in resolving issues of transboundary pollution between Canada and the United States for over a century (the *Trail Smelter* dispute, for example), and continue to do so.⁵⁰

Columbia River Treaty, 1964

The CRT was ratified in 1964 as an agreement between Canada and the United States primarily as a transboundary water management agreement for the Columbia River Basin, specifically regarding

⁴⁴ *Ibid*, preliminary article.

⁴⁵ *Ibid*, art IV.

⁴⁶ Commissioner Gordon Walker, QC, “The Boundary Waters Treaty 1909—A Peace Treaty?” (2015) 29 Canada—United States Law Journal 170 [Walker].

⁴⁷ BWT, *supra* note 4, art VII.

⁴⁸ BWT, *supra* note 4, art VIII.

⁴⁹ BWT, *supra* note 4, arts III & IV.

⁵⁰ Some more case examples where the IJC were called on to solve transboundary pollution issues are expanded upon in the analysis section of this paper.

development.⁵¹ This is important to the region for two reasons: power generation and flood control, both were of upmost importance in the region.⁵² The CRT was deemed necessary after several disastrous floods in the late 1940s and 1950s, including the Vanport City, Oregon flood which killed 50 people and resulted in over \$102 million in damages (equivalent to over \$900 million now).⁵³ The CRT allowed for rapid development of flood control systems that could also produce hydroelectricity.

While the CRT may have been important for flood control and has been positively viewed in some ways, local Indigenous peoples were excluded in the creation of the CRT and many local First Nations communities experienced loss because of flooding to create new reservoirs and facilities for hydropower. The building of dams under the CRT also changed the ecology of the rivers in the Columbia River system, blocked salmon from migrating and flooded cultural territory.⁵⁴ In 2018, Canada and the United States began negotiations to modernize the treaty by 2024, focused on addressing concerns about environmental impacts and Indigenous rights.⁵⁵ On January 10, 2022, Canada and the United States met for the 12th round of negotiations; the latest informal meeting was on May 17, 2022.⁵⁶ While the CRT does not explicitly relate to selenium pollution from coal mines in the Elk Valley, the Elk-Kootenai watershed is within the greater Columbia River watershed boundary, and given the contentious ongoing negotiations to amend it, it should be considered. Other international agreements and cases on transboundary pollution may be relevant to this issue, but our analysis will focus on these agreements and cases, which we believe to be the most pertinent international resources to discuss the case of transboundary selenium pollution mining operations in southern British Columbia.

⁵¹ CRT, *supra* note 5, preamble.

⁵² Alice Cohen & Emma S Norman, “Renegotiating the Columbia River Treaty: Transboundary Governance and Indigenous Rights,” (2018) 18 (4) *Global Environmental Politics* 4-24, p.11 [Cohen & Norman].

⁵³ James M Hundley, “Whither an International Issue: The Columbia River Treaty, the Canada/US Border, and the Curious Case of Libby, MT” (2020) 35 (5) *Journal of Borderlands Studies*, 801-818 [Hundley].

⁵⁴ Cohen & Norman, *supra* note 52, at page 15.

⁵⁵ Bob Keating & Tom Popyk, “Calls to terminate Columbia River Treaty sparks concern after 2 years of negotiations,” CBC News, 2018 [Keating & Popyk].

⁵⁶ British Columbia, *Columbia River Treaty News*, <<https://engage.gov.bc.ca/columbiarivertreaty/>> accessed August 2, 2022.

3. ANALYSIS AND APPLICATION OF INTERNATIONAL LAW

3.1 The International Joint Commission should be called Upon for Recommendations

The IJC is already aware of the issue of selenium pollution and Montana's increasing concern about its effect on Lake Kootenai.⁵⁷ In 2016, the BC Auditor General, Carol Bellringer, stated that the Ministry of Environment had been monitoring selenium levels in the Elk Valley for 20 years, but because there is no regulatory oversight, no necessary action has been taken to solve the problem.⁵⁸ In 2018, two US commissioners on the IJC released a letter to the US State Department stating Canada's three representatives would not endorse a report showing risk to aquatic and human life in Lake Kootenai from selenium pollution. These US commissioners accused BC of negligence in addressing the issue of selenium pollution and said they are at risk of violating the BWT.⁵⁹ Additionally, Teck and the BC government are required to regularly perform water testing in the area, but this data is not made available to the public; these US representatives on the IJC criticized this testing process, stating that Teck and Canadian representatives were "suppressing science."⁶⁰ As such, the apparent lack of transparent, peer-reviewed scientific monitoring that is independent from Teck and the BC government is a significant concern in this case.⁶¹ The IJC has knowledge of the selenium pollution issue and knows that there is ongoing conflict between Montana and BC (therefore, Canada and the US), yet they have not provided recommendations to solve the issue. However, the real issue is that the IJC has not been asked to provide recommendations.

While the IJC commissioners are aware of the issue and seemingly in dispute themselves, they cannot do anything under the treaty because the treaty is not self-activating. Canada and the United States must jointly decide to invoke the treaty if they think a project

⁵⁷ Judith Lavoie, "Canada suppressing data on coal mine pollution, says US officials," *The Narwhal* (July 4, 2018), <<https://thenarwhal.ca/canada-suppressing-data-on-coal-mine-pollution-say-u-s-officials/>> [Lavoie].

⁵⁸ *Ibid.*

⁵⁹ *Ibid.*; Chloe Williams, "From Canadian Coal Mines, Toxic Pollution That Knows No Borders," 2019, <<https://e360.yale.edu/features/from-canadian-coal-mines-toxic-pollution-that-knows-no-borders>> [Williams].

⁶⁰ Lavoie, *supra* note 57.

⁶¹ Erin K Sexton, et al, "Canada's mines pose transboundary risks" (2020) 368 (6489) *Science* 376-377, <<https://doi.org/10.1126/science.abb8819>>.

may affect such things as water levels, water flow, and water quality by sending the issue to the IJC for investigation.⁶² Article X states that the two countries may *jointly* request a reference to the IJC on any matters they disagree on under the treaty over the “rights, obligations, or interests” of either countries or their citizens.⁶³ As mentioned, BC has yet to update its water quality guidelines to follow the selenium standard of 0.85 µg/L; BC will not likely take any action, or request the federal government to call upon the IJC for recommendations, if their selenium standard is not updated first.⁶⁴ However, the issue remains that if BC is to update their standard for Lake Koocanusa, it is still Canada that must request the IJC recommendations in partnership with the US. Though, since studies began analyzing selenium levels in the lake around 2015, there has been increasing concern from the US side and local Indigenous people and increasing tension between all sides because Canada has not been interested in calling on the IJC;⁶⁵ if the IJC is not called upon for recommendations, tensions between Canadian and American counterparts will likely only increase as they make their contradicting arguments to the wind.⁶⁶

One aspect of the BWT that can be blamed for lack of calling on the IJC is the vague mention of pollution despite attempts of the IJC to adopt stronger recognition of environmental concerns. Currently, the BWT states that concerning over pollution is engaged under the agreement only when it could cause injury to the health or property of the other country.⁶⁷ This suggests not a general prohibition against pollution, but rather a protection of rights afforded to each country;

⁶² Walker, *supra* note 46.

⁶³ BWT, *supra* note 4, art X; Robert Wright, “The Boundary Waters Treaty: A Public Submission Process Would Increase Public Participation, Accountability, and Access to Justice” (2008) 54 Wayne L Rev 1609 [Wright].

⁶⁴ Cruickshank 2022, *supra* note 3.

⁶⁵ Karen E Jenni, David L Naftz & Theresa S Presser, 2017, Conceptual modeling framework to support development of site-specific selenium criteria for Lake Koocanusa, Montana, U.S.A., and British Columbia, Canada: U.S. Geological Survey Open-File Report 2017–1130, 14 p., <<https://doi.org/10.3133/ofr20171130>>; Tristan Scott, “Canada Walks Back Position on IJC Reference for Kootenai Coal Mine Contamination,” Flathead Beacon (May 20, 2022), <<https://flatheadbeacon.com/2022/05/20/canada-walks-back-position-on-ijc-reference-for-kootenai-river-contamination/>> [Scott]; Ainslie Cruickshank, “Canada flip-flops amid calls for international investigation into B.C. coal mine pollution,” The Narwhal (May 26, 2022), <<https://thenarwhal.ca/teck-coal-mining-ijc-ktunaxa/>> [Cruickshank, May 2022].

⁶⁶ Williams, *supra* note 59.

⁶⁷ BWT, *supra* note 4, art IV.

pollution is not prohibited until it harms the other side.⁶⁸ It is understandable, then, why BC has been hesitant to adopt a water quality standard that would support the accusation of harmful pollution from a company in their jurisdiction and why Teck has been so adamant against Montana's new standard.

The BWT has continued to use this vague definition of pollution, but the IJC has slowly moved forward toward an ecosystem approach to addressing local concerns by creating the International Watersheds Initiative ("IWI").⁶⁹ The IWI is an approach of the IJC to resolving transboundary water issues through partnership with local communities affected by a given issue out of recognition those closest to issues will likely have more knowledge and understanding of how the specific ecosystem functions, and how it has been impacted.⁷⁰ Canada also developed the *International Boundary Waters Treaty Act* ("BWT Act"), recognizing First Nations treaty rights as affirmed under section 35 of the *Constitution Act*.⁷¹ There is mention in the *BWT Act* of environmental concerns specifically over the "bulk removal" of water within section 12, but other than this there are only vague mentions of environmental concerns as aggravating factors under section 36(2).⁷² For example, section 36(2)(a) states that an offence causing "damage or risk of damage to the environment" is an aggravating factor; section 36(2)(c) states if the damage was "extensive, persistent or irreparable," it is also an aggravating factor.⁷³ While it may appear promising, these provisions offer several issues: they are only listed as aggravating factors for an offence under the BWT, and environmental damage or harm does not trigger an offence on its own; these factors are still vague, with no standard or definition to suggest what constitutes environmental damage, or what is meant by "extensive, persistent or irreparable" (s. 36(2)). Therefore, while the IJC attempts to move forward and modernize, the BWT still only consists of one vague article on pollution, and the *BWT Act* only introduces vague mentions of environmental harm that are solely aggravating factors and

⁶⁸ Walker, *supra* note 46.

⁶⁹ Walker, *supra* note 46; *International Watersheds Initiative*, International Joint Commission (IJC), online: <http://www.ijc.org/en/_IWI> [IWI].

⁷⁰ IWI, *supra* note 69.

⁷¹ Walker, *supra* note 46; *International Boundary Waters Treaty Act*, RSC 1985, c I-17, s 21 [BWT Act]; *Constitution Act, 1982*, being Schedule B to the *Canada Act 1982* (UK), 1982, c 11 [Constitution].

⁷² *BWT Act*, *supra* note 71, s 12 & 36(2).

⁷³ *Ibid*, s 36(2)(a) & 36(2)(c).

not triggering factors. The BWT has existed for over a century now in its current form, while the law and world it operates around have changed drastically.⁷⁴

If the IJC were called upon for recommendations, they would likely consider both Indigenous rights and concerns over environmental harm, given their evolution to an ecosystem-based approach.⁷⁵ Even back in 1975, when called upon to evaluate the effects of the Garrison Diversion on Canadian waters, the IJC demonstrated their ability to modernize by considering risks of irreversible damage to the environment and adopting the precautionary approach.⁷⁶ The IJC is not the issue; what needs improvements is the triggering of the BWT and the considerations under the treaty that should result in consulting the IJC. Under the current treaty, neither Indigenous concern nor environmental harm is reason enough, and consulting the IJC is only necessary if there is harm to the health or property of people. Additionally, while the IJC can enforce the BWT, jurisdictions cannot force each other to respect recommendations or decisions of the IJC;⁷⁷ both countries seem to prefer only using the IJC for recommendations, so they may refuse to accept the recommendations provided if it does not fit with political agendas, economic objectives, or other environmental and social factors. There needs to be more power afforded to the IJC to execute the BWT and provide recommendations regardless of whether both Canada and the United States call upon them. Providing self-execution to the IJC could solve many problems such as the case of transboundary pollution in Lake Koochanusa, or in the case of Devils Lake where the IJC was asked to "survey fish pathogens and parasites in Devils Lake, the Sheyenne and Red Rivers, and Lake Winnipeg in order to better understand their potential risk of transference from Devils Lake to downstream systems."⁷⁸ In the Lake

⁷⁴ Noah D Hall, "The Centennial of the Boundary Waters Treaty: A Century of United States-Canadian Transboundary Water Management" (2008) 54 Wayne L Rev 1417 [Hall].

⁷⁵ IWI, *supra* note 69.

⁷⁶ Andrea Signorelli, "Devils Lake Outlet and the Need for Canada and the United States to Pursue a New Bilateral Understanding in the Management of Transboundary Waters" (2011) 34 Manitoba Law Journal 183 [Signorelli].

⁷⁷ Signorelli, *supra* note 76.

⁷⁸ Signorelli, *supra* note 76; International Joint Commission, "IJC releases report on fish parasites and pathogens in Devils Lake, the Sheyenne and Red Rivers, and Lake Winnipeg" (October 27, 2011), <<https://www.ijc.org/en/ijc-releases-report-fish-parasites-and-pathogens-devils-lake-sheyenne-and-red-rivers-and-lake>>.

Koocanusa case, even allowing a single party to invoke the IJC rather than needing a joint agreement to request the IJC's recommendations would result in the IJC being involved.

3.2 Case Law: Calling on the IJC to make Recommendations would Facilitate Solutions

Looking back to *Trail Smelter*, calling on the IJC for recommendations can facilitate discussions between Canada and the United States, leading to a solution, whether through arbitration or not. The arbitration tribunal, who decided the case, adopted the damages recommended by the IJC. The IJC recommendations also helped facilitate discussions in the tribunal that established key international principles of transboundary pollution and international law. Notably, the tribunal concluded that in the debate over following domestic law or international law, in a matter of transboundary pollution, the domestic law should be in conformity with general international rules.⁷⁹ Additionally, they stated that it was Canada's responsibility to ensure the smelter's conduct adhered to international law obligations.⁸⁰ In the Lake Koocanusa case, this would suggest a responsibility of Canada to ensure Teck is not polluting Montana waters. The tribunal reached these conclusions with helpful recommendations from the IJC, and summarized their reasoning with what is now known as the *Trail Smelter* principles: the state has a duty to prevent transboundary harm, and the polluter pays principle recognizing polluting states should pay compensation for transboundary harm they cause.⁸¹ If these principles are to be followed in the case of selenium pollution in Lake Koocanusa, they both support that Canada needs to take action to prevent pollution flowing from Teck's mines and provide compensation for any damage already caused.

While the *Trail Smelter* principles were important to set precedence through the issue of transboundary pollution in international law, and demonstrated the benefits of calling on the IJC for recommendations, the established principles have potentially vague application as the arbitration tribunal stated other things that contradict those principles. For example, by saying that only when a "case is of serious consequence and the injury is established by *clear and convincing evidence*" can a state intervene, they suggest that producers still have the

⁷⁹ Hall, *supra* note 74.

⁸⁰ *Ibid.*

⁸¹ Bratspies & Miller, *supra* note 38 at page 3.

right to do what is necessary to maximize production and economic benefit.⁸² Therefore, while some key international pollution principles have come from this case, there have also been many critical views of *Trail Smelter* for its failure to impose an obligation to prevent damage.⁸³ Because of this, it is difficult to apply to cases of transboundary pollution currently unless clear evidence of damage has occurred; it introduced an obligation to pay for pollution but not to prevent it from the outset. The threshold of transboundary environmental effects “of a serious consequence” is inherently ambiguous.⁸⁴ Because of this, *Trail Smelter* could be used to support Canada paying for damages to the United States because of Teck pollution, but the case can also be used as support for the use of the IJC.

The eventual fine required to be paid by Canada in *Trail Smelter*, and the international pollution principles that came from the case, stemmed from the research and recommendations of the IJC. The IJC’s investigation was conducted by scientists from both countries who presented scientific impacts on the pollution.⁸⁵ While it did take some time to reach a final decision even after the IJC provided their recommendations, these recommendations facilitated the final discussions and tribunal decisions. Since *Trail Smelter*, the IJC has continued to help solve disputes between Canada and the United States and examples show how the IJC has attempted to modernize while the BWT has not.

Past cases the IJC have been involved in demonstrate the ability of the IJC to help facilitate solutions and show their willingness to adopt more modern principles over time. In 1944 a study and recommendations by the IJC eventually led to the creation of the CRT.⁸⁶ In 1975, the IJC was asked for recommendations and evaluations on the effect of the Garrison Diversion on Canadian waters.⁸⁷ The IJC’s conclusion in the 1975 Garrison Diversion case was that a project involving water transfer between basins should not proceed “unless and until Governments agree that methods had been proven that would eliminate the risk of biota and disease were no longer

⁸² Trail Smelter Arbitration, *supra* note 37; Bratspies & Miller, *supra* note 38 at page 18.

⁸³ Bratspies & Miller, *supra* note 38 at page 126.

⁸⁴ *Ibid*, at page 129.

⁸⁵ Bratspies & Miller, *supra* note 38 at page 28.

⁸⁶ Hall, *supra* note 74; International Joint Commission, “History of the IJC,” <<https://ijc.org/en/who/history> > accessed August 2, 2022 [IJC History].

⁸⁷ Signorelli, *supra* note 76.

of concern” and that the project does not proceed until then.⁸⁸ The IJC adopted a precautionary approach after concluding that the risk of irreversible damage caused by foreign biota was inconclusive as it was impossible to measure all effects.⁸⁹ Ultimately, these IJC recommendations were not adopted; however, these recommendations illustrate the IJC's adaptability and openness to adopt modern principles. While not explicitly using the precautionary principle, the conclusion that a project should not proceed unless a "risk" is "no longer of concern" is following the principle. Regardless, the recommendations still facilitated further discussion between the countries. Notably, the issue and ideas in the Garrison Diversion Project were discussed in the later Devils Lake Outlet case mentioned above.⁹⁰ More recently and regarding an issue close to Lake Koocanusa, the IJC provided recommendations for a proposed mine in the Elk Valley, stating that it should not be approved until there were no potential impacts on the trout fishery in the Flathead River.⁹¹

While IJC recommendations and investigations are not required to be followed, the suggestions made by the IJC are respected and historically have at the very least, facilitated further discussion between Canada and the United States over a given dispute. However, this discussion also illustrates that, while the IJC is attempting to modernize, the BWT remains unchanged. Ironically, the CRT, another transboundary treaty relevant to the area at issue, which was created and signed as a direct result of discussions and cooperation of the IJC,⁹² is already undergoing amendments despite being created 50 years after the BWT.

3.3 The Columbia River Treaty is not Applicable to the Situation but Supports Reform of the Boundary Waters Treaty

Unfortunately, the CRT is not applicable to this case; however, amending of the CRT supports possibly amending the BWT, and the CRT may be applicable once amendments are finished. The CRT is a

⁸⁸ IJC History, *supra* note 86; Embassy of Canada in Washington, *Canada's Statement to the International Joint Commission* (Washington: Embassy of Canada, 2005), <<http://www.canadainternational.gc.ca/washington>>, as cited in Signorelli, *supra* note 76.

⁸⁹ Signorelli, *supra* note 76.

⁹⁰ *Ibid.*

⁹¹ IJC History, *supra* note 86.

⁹² Hall, *supra* note 74.

specific treaty governing flood control, infrastructure, electricity and energy production and does not address the issue of pollution. While Lake Koocanusa is within the Columbia River system, and the Libby Dam (southern end of the lake) was created through this treaty, there is no provision in the treaty that can help solve the conflict over selenium pollution in Lake Koocanusa. Before the CRT was formed, flooding was largely only an issue in the United States. The creation of the CRT demonstrates that there can be international solutions to issues once viewed as solely domestic ones.⁹³ Given the ongoing negotiations to amend the treaty, notably to address concerns about environmental impacts and Indigenous rights, the amended product could apply to pollution issues in Lake Koocanusa upon the 2024 release, or, at the very least, support amending the BWT.⁹⁴ Of course, there is no certainty as to what the amendments will include.

When the CRT was first created, many important factors were not considered, and issues are now apparent with the approach taken to damming the rivers and preventing flooding. For example, grizzly bears were separated onto either side of newly formed lakes, which resulted in two weaker breeding populations, and bull trout numbers are continually dropping because these lakes are not natural and do not have the necessary nutrients to sustain all life.⁹⁵ One of these lakes is Lake Koocanusa, formed by the damming of the Kootenai River. It is possible that if environmental concerns are to be included in CRT amendments, any environmental issue within a body of water formed by the damming of waterways through the CRT could fall under the control of the newly amended CRT.

A notable goal of amending the CRT is to ensure that Indigenous Nations in the Columbia Basin have their interests reflected in the treaty.⁹⁶ This could also provide support the CRT having some

⁹³ Hundley, *supra* note 53.

⁹⁴ Keating & Popyk, *supra* note 55.

⁹⁵ Hundley, *supra* note 53; Vaughn L Paragamian & Jody P Walters, "Bull trout (*Salvelinus confluentus*) movements in a transboundary river" (2011) 26 (1) *Journal of Freshwater Ecology* 65-76, <<https://doi.org/10.1080/02705060.2011.553854>> [Paragamian & Walters]; Ryan P Kovach, et al, "Long-term population dynamics and conservation risk of migratory bull trout in the upper Columbia River basin" (2018) 75 (11) *Canadian Journal of Fisheries and Aquatic Sciences* 1960-1968, <<https://doi.org/10.1139/cjfas-2017-0466>> [Kovach et al].

⁹⁶ BC Government, "Canada, US continue Columbia River Treaty talks," BC Gov News, January 12, 2022, <<https://news.gov.bc.ca/releases/2022EMLI0002-000041>>.

jurisdiction over Lake Koocanusa and other water bodies formed by dams in the Columbia River system in cases of pollution because the Ktunaxa, for example, could hopefully raise concerns about pollution within the Columbia River system under the CRT. As already mentioned, the damming of the Kootenai River, which formed the Koocanusa reservoir, resulted in the harm of several species which were of importance to First Nations, including kokanee salmon and bull trout.⁹⁷ CRT amendments are occurring, in part, out of recognition of harm caused to local Indigenous peoples and their traditional territory, including their food and water supply.

While amendments are focused on including considerations of both Indigenous rights and environmental concerns, it is not clear what these amendments will look like, and it remains unclear if they will aid in preventing or controlling selenium pollution. Even if they addressed pollution in water bodies formed by damming waterways in the Columbia River system, selenium pollution is unrelated to infrastructure, which the CRT controls. A key takeaway from an analysis of the CRT's possible role in this issue should be that if a 1964 treaty can undergo significant amendments to include both Indigenous rights and environmental concerns, why can a 1909 treaty, which clearly needs to be modernized, not undergo similar amendments as well?

3.4 What can We Learn and Apply from Other International Agreements?

There are no other applicable treaties that can be directly used to solve the transboundary selenium pollution because Canada and/or the United States is not a party to any agreements that could be relevant. However, while no treaties apply directly to the issue at hand, there are several that can be looked to for possible suggestive amendments to the BWT, including the 1997 *United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses* ("UN Watercourses Convention"),⁹⁸ the 1992 *United Nations Economic Commission for Europe Convention on the Protection and Use of Transboundary Watercourses and*

⁹⁷ Hundley, *supra* note 53; Randy Ericksen, et al, 2009, "Status of Kokanee Populations in the Kootenai River in Idaho and Montana and South Arm Kootenay Lake, British Columbia," *Contract report prepared for the Kootenai Tribe of Idaho* 30p.

⁹⁸ *Convention on the Law of the Non-navigational Uses of International Watercourses*, United Nations, 21 May 1997, UN GA 51 229 No 49 (entered into force 17 August 2014) [UN Watercourses Convention].

International Lakes ("UNECE Water Convention"),⁹⁹ the *Berlin Rules on Water Resources* ("Berlin Rules"),¹⁰⁰ and the *United Nations Declaration on the Rights of Indigenous Peoples* ("UNDRIP").¹⁰¹

The International Court of Justice ("ICJ"), the official "judicial organ" of the United Nations tasked with settling international legal disputes submitted to it could,¹⁰² in theory, be requested to decide on the issue. However, similar to the IJC, cases have to be referred to the ICJ by the parties involved,¹⁰³ so both countries would have to agree to refer the case. Given that a court decision would be binding, it is unlikely either country would prefer this outcome over coming to an agreement together. Therefore, the ICJ has no real power or ability to help solve this problem. For this reason, we have chosen not to look at ICJ cases in this chapter and instead we focus on illustrating key principles that could be taken from the above agreements when considering what amendments could be included in the BWT to make it more effective at resolving transboundary pollution issues between Canada and the United States.

1997 UN Watercourses Convention

The 1997 UN Watercourses Convention cannot be applied to the Lake Kooacanusa dispute because neither Canada nor the United States is a party to the Convention, but it can be looked to for possible BWT amendments. It is unclear why neither country is a party to Convention; perhaps it is because the UN Watercourses Convention provides more weight to countries with a greater population and economic activity, which contradicts the equality provided in the BWT.¹⁰⁴ Or, perhaps Canada and the United States take issue with the greater access to shared waters. It is unfortunate that the countries are not

⁹⁹ *Convention on the Protection and Use of Transboundary Watercourses and International Lakes*, United Nations Economic Commission for Europe, 17 March 1992 (entered into force 6 October 1996) [UNECE Water Convention].

¹⁰⁰ *Berlin Rules on Water Resources*, "Berlin Conference (2004): Water Resources Law," International Law Association, 21 August 2004 [Berlin Rules].

¹⁰¹ *United Nations Declaration on the Rights of Indigenous Peoples*, adopted by the UN General Assembly, 2 October 2007, A/RES/61/295 No 68 [UNDRIP].

¹⁰² International Court of Justice, "The Court," online: <<https://www.icj-cij.org/en/court>> accessed August 2, 2022; United Nations, *Statute of the International Court of Justice*, 18 April 1946, art 1, <https://legal.un.org/avl/pdf/ha/sicj/icj_statute_e.pdf> [Statute of ICJ].

¹⁰³ Statute of ICJ, *supra* note 102 at art 36(1).

¹⁰⁴ Walker, *supra* note 46.

parties, and the principles within the Convention cannot apply, but equality between the two countries in the BWT is also an important aspect that should remain; as it stands, Commissioners in the BWT reach decisions based on consensus, requiring at least one Commissioner from the other country to be in the quorum.¹⁰⁵ Regardless, some of the key principles and provisions from the UN Watercourses Convention should be considered in a BWT amendment process, especially the cooperative nature of the Convention which is based on the idea of limited territorial sovereignty.¹⁰⁶

Under the UN Watercourses Convention, specific definitions are provided for key terms that are likely to arise in cases, which aids in solving transboundary disputes; the BWT can draw on these. First, under Article 21, a pollutant is considered anything that could alter the quality of downstream waters.¹⁰⁷ One of the criticisms of the BWT has been its vague provisions, notably article IV where pollution is mentioned. A definition such as this one provided in the UN Watercourses Convention would greatly benefit the BWT, making it more applicable to transboundary pollution issues, as the lack of an explicit definition of pollution under the BWT has made it difficult to assess conflicts correctly.¹⁰⁸ Additionally, Article 7 of the Convention adopts the polluter pays principle.¹⁰⁹ The BWT does not include the polluter pays principle, yet the IJC appears to already recognize the principle; adopting it into the BWT would create less conflict between the BWT and IJC and provide more guidance for the IJC to make recommendations.

While many other articles in the Convention could be relevant to the BWT, two of the most important amongst the rest are Articles 8 and 9. These articles state there is a general duty for States to cooperate with one another and watercourse States will regularly exchange data and information related to the condition of a watercourse.¹¹⁰ This would positively apply to the selenium pollution issue and could dissolve the conflict between Canadian and American IJC Commissioners due to accusations of the Canadian side withholding information and preventing

¹⁰⁵ *Ibid.*

¹⁰⁶ Signorelli, *supra* note 76.

¹⁰⁷ UN Watercourses Convention, *supra* note 98 at art 21; Signorelli, *supra* note 76.

¹⁰⁸ Signorelli, *supra* note 76.

¹⁰⁹ UN Watercourses Convention, *supra* note 98 at art 7.

¹¹⁰ UN Watercourses Convention, *supra* note 98 at art 8 & 9.

this issue.¹¹¹ Lastly, it should be noted that Article 21 of the Convention presents several provisions for the prevention and reduction of pollution; for example, Article 21(2) explicitly states that a watercourse State shall “prevent, reduce and control the pollution of an international watercourse that may cause significant harm to other watercourse States or to their environment.”¹¹² These are simple provisions recognizing the duty to prevent and reduce pollution causing harm to other States that could easily be adopted into an amended BWT.

1992 UNECE Water Convention

Like the UN Watercourses Convention, the UNECE Water Convention cannot be directly applied to this situation, as neither Canada nor the United States is a party to it, but it does provide more examples of general provisions that an amended BWT should include to effectively address transboundary pollution issues. The UNECE Water Convention efficiently describes the detailed duties of each party to the Convention under Article 2; for example, Article 2, section 2(a) states that parties shall take all appropriate measures “to prevent, control and reduce pollution of waters causing or likely to cause transboundary impact.”¹¹³ While this is a general obligation for parties, it does more than the BWT to identify the obligations of parties regarding pollution as there is a specific definition provided for “transboundary impact” under Article 1.¹¹⁴ Also of note is section 5, which specifically states the parties in the Convention will apply both the precautionary principle and polluter-pays principle.¹¹⁵ As a transboundary water agreement, these principles should be essential in the BWT; as mentioned, the IJC has adopted both principles in decisions and recommendations, so again, by making these amendments to the BWT there will be less conflict between the BWT and how the IJC has evolved.

Lastly, another key aspect the BWT could integrate is Article 5 of the UNECE Water Convention, which encourages cooperative research and development between States; for example, under (d), parties should cooperate to research and develop a technique for “phasing out and/or substituting substances likely to have a transboundary impact.”¹¹⁶

¹¹¹ Lavoie, *supra* note 57.

¹¹² UN Watercourses Convention, *supra* note 98, art 21(2).

¹¹³ UNECE Water Convention, *supra* note 99, art 2, s 2(a).

¹¹⁴ *Ibid*, art 1.

¹¹⁵ *Ibid*, art 2, s 5.

¹¹⁶ UNECE Water Convention, *supra* note 99 at art 5(d).

A provision like this would facilitate better cooperation between Canada and the United States and encourage more use of the IJC.

Berlin Rules

The Berlin Rules is a summary of international laws currently in existence that apply to freshwater resources adopted by the International Law Association; a useful resource summarizing key provisions governing transboundary waters and pollution in particular that could be of interest for BWT amendments. Chapter III of the Berlin Rules should be of particular interest to BWT amendments as it consists of provisions on internationally shared waters.¹¹⁷ First, under Article 10, States that share an international water basin have the right to participate in the management of its waters “in an equitable, reasonable, and sustainable manner.”¹¹⁸ This is another simple provision that would be a useful addition to the BWT and aid in preventing issues such as selenium pollution in Lake Kooncanusa because of the focus on sustainably managing the waters and equal right to do so. Article 11 requires basin States to cooperate in good faith over the management of transboundary waters.¹¹⁹ As suggested in commentary on the Berlin Rules, this provision speaks for itself as it would be impossible for States to share transboundary water resources sustainably without this type of obligation.¹²⁰ The BWT could use more recognition of an obligation of good faith between Canada and the United States to ensure shared resources are handled sustainably. Next, Article 12 requires the management of waters in an international basin in an “equitable and reasonable manner having due regard for the obligation not to cause significant harm to other basin States.”¹²¹ Again, a principle that would hopefully facilitate greater respect for shared water resources if incorporated into the BWT.

The Berlin Rules also establish the factors that should be considered when determining what is “equitable and reasonable use” and these factors support the prioritization of using transboundary water to “satisfy vital human needs” and the populations “dependent on the waters of the international drainage basin.”¹²² While there are other

¹¹⁷ Berlin Rules, *supra* note 100 at page 18.

¹¹⁸ *Ibid.*, art 10(1) at page 18.

¹¹⁹ Berlin Rules, *supra* note 100, art 11 at page 19.

¹²⁰ *Ibid.*, at page 20.

¹²¹ *Ibid.*, art 12 at page 20.

¹²² *Ibid.*, art 13(2)(c) & 14 at page 21.

factors listed, these stand out. First, prioritizing water use to satisfy vital human needs suggests that this should come first if it is needed as drinking water. In the case of selenium pollution, the Ktunaxa Nation arguably had some of their water resources polluted.¹²³ This provision of the Berlin Rules could be aligned with the goals and provisions of UNDRIP, detailed more below, which promote sustainability and health, and should be looked to as a provision to adopt in the BWT. The factor requiring consideration of the population dependent on the water resource also supports this.

United Nations Declaration on the Rights of Indigenous Peoples

On June 21, 2021, Bill C-15, known as “An Act respecting the United Nations Declaration on the Rights of Indigenous Peoples” (“UNDRIP”), received royal assent.¹²⁴ Through this Act, Canada recognized UNDRIP and committed to implementing it in legislation. Some possible provisions under UNDRIP that should be recognized are, first, Article 8(2), which provides that States will prevent or provide redress for any action depriving Indigenous peoples of “their integrity as distinct peoples,” or “any action dispossessing them of resources.”¹²⁵ Studies have already illustrated the negative effects of selenium pollution on both the water quality and fish stocks in the Elk River system and Koocanusa watershed, both of which are resources of the Ktunaxa Nation.¹²⁶ Articles such as this should be adopted into the BWT to ensure that not only is UNDRIP respected but that Indigenous peoples are afforded the equality they have been promised.

There are several other UNDRIP Articles that should be looked to. Article 18 exemplifies the equality promised to Indigenous peoples stating, “Indigenous peoples have the right to participate in decision-making matters affecting their rights.”¹²⁷ Under the current circumstances of the selenium pollution issue, if this is to be truly respected by Canada, this should suggest that the Ktunaxa Nation, whose traditional territory spans both sides of the Canada-US border around Lake Koocanusa, should have the right to participate alongside Canada and the United States under the BWT now that UNDRIP has

¹²³ *R v Teck*, *supra* note 1 at para 16 & 17.

¹²⁴ Bill C-15, *An Act respecting the United Nations Declaration on the Rights of Indigenous Peoples*, 2nd sess, 43rd Part, 2021 (assented to 21 June 2021).

¹²⁵ UNDRIP, *supra* note 101, art 8(2).

¹²⁶ Ktunaxa Nation, *supra* note 22.

¹²⁷ UNDRIP, *supra* note 101 at art 18.

been recognized, meaning they could also request the IJC get involved. Under Article 26, Indigenous peoples have the right to use or occupy the lands and resources of their traditional territories, and States shall give legal recognition and protection to these lands and resources.¹²⁸ The Ktunaxa Nation traditional territory covers the entirety of Lake Koocanusa.¹²⁹ While the United States has not adopted UNDRIP, if Canada is to respect their commitment to UNDRIP, this should include the entirety of the Ktunaxa Nation traditional territory if they impact this territory through pollution in Lake Koocanusa. Regardless, the Ktunaxa Nation supported the Lake Koocanusa selenium standard of 0.85 µg/L;¹³⁰ if they are to have equal decision-making power and their traditional territory be respected, this standard should be adopted on the Canadian side of the border, and they should have the option of requesting the IJC make recommendations.

4. CONCLUSION: A TWO-PART SOLUTION

Based on this analysis, two conclusions are reached regarding a solution to the issue of selenium pollution in Lake Koocanusa. These conclusions consist of (1) a short-term solution: hopefully facilitating discussions to conclude the Lake Koocanusa conflict and possibly a greater level of oversight and transparency in monitoring and data availability for selenium levels by calling on the IJC for recommendations; and (2) a long-term solution: necessary to solve future disagreements regarding transboundary pollution between Canada and the United States.

4.1 Short-Term Solution

First, specific to how a solution can be reached swiftly in the current case, the IJC needs to be called upon to provide recommendations. Given the recent studies on selenium in the Elk-Kootenai watershed,¹³¹ and the growing concern from Montana and American commissioners on the IJC,¹³² Canada and the US requesting

¹²⁸ *Ibid*, art 26.

¹²⁹ Ktunaxa Nation, *supra* note 23.

¹³⁰ Cruickshank 2022, *supra* note 3; Kelly & Sullivan, *supra* note 30.

¹³¹ Weber, *supra* note 1; Cruickshank 2022, *supra* note 3; Rezaie & Anderson, *supra* note 8; Egiebor & Oni, *supra* note 8; Rambabu et al, *supra* note 8; Kelly & Sullivan, *supra* note 30.

¹³² Cruickshank 2022, *supra* note 3.

recommendations is most likely to facilitate the necessary discussions to reach a solution. Clearly there is disagreement between the two countries with regards to how to address this problem and whether it is a problem at all, and recommendations from IJC would help facilitate a solution. Case law has shown that the IJC provides thorough and respected recommendations and the IJC has been modernizing itself. The IJC is likely equipped to handle environmental concerns and Indigenous rights matters. There are prominent examples of how solutions have been reached after IJC recommendations, such as in the case of *Trail Smelter*.

A recognizable issue, though, is that both countries need to be open to requesting recommendations from the IJC, but Canada is withholding. However, given Canada's recognition of s.35 *Constitution* rights under the *BWT Act*, their recognition of UNDRIP, and because both BC and the Ktunaxa Nation (who possess s.35 rights), have recognized and agreed to the selenium concentration standard of 0.85 µg/L, Canada should jointly call upon the IJC for recommendations.

4.2 Long-Term Solution

Second, and most important for the future of transboundary water disputes between the countries, the BWT needs to be amended. At the very least, amendments need to include updating the treaty to include environmental concerns and Indigenous rights, and the IJC needs to have more power, even if this means the ability to self-execute or only require one party request recommendations rather than both. Key amendments need to include specific definitions of pollution. While Canada and the United States are not parties to the 1997 *UN Watercourses Convention* or the 1992 *UN Water Convention*, they can take key principles from these Conventions, along with the Berlin Rules and UNDRIP, to amend the BWT. Additionally, there should be a possibility for the IJC to be activated from any interested party rather than both parties jointly, such as in the 1997 Convention. While this is a tall order, it has been called for already.¹³³

We see the CRT going through substantial amendments, yet a treaty from 1909 remains unaltered. The CRT amendments show that an amendment process can and should include environmental concerns and Indigenous rights. The IJC is already beginning to reflect these

¹³³ Signorelli, *supra* note 76.

concerns, but the BWT needs to provide them with the ability to be more involved in transboundary water disputes.

Canada handing down the largest fine under the *Fisheries Act* in Canadian history may have made for good press, but in the context of Canada-United States transboundary pollution agreements, this fine (pale in comparison to Teck's multi-billion dollar per year revenue stream) did little but bring the flaws of the century-old BWT to the surface.¹³⁴ The BWT does not need to become a transboundary pollution treaty, but if it is all Canada and the United States are going to have between them to address transboundary pollution, it needs to be amended.

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¹³⁴ Teck, "Teck reports unaudited annual and fourth quarter results for 2021" (February 23, 2022), <<https://www.teck.com/news/news-releases/2022/teck-reports-unaudited-annual-and-fourth-quarter-results-for-2021>>.

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Environmental pollution is an incurable disease. It can only be prevented.

BARRY COMMONER

Convergence of Environmental and Economic Law in the Sphere of Environmental Protection and Natural Resource Management in Ukraine

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ABSTRACT

The present chapter analyses the process of convergence of environmental legislations and commercial regulations to achieve a balance between ecological and economic interests in context of natural resource management and environment protection. The relevance of the topic is dictated by the issues related to environmental safety that require using available legal remedies to facilitate the transformation of the conventional economy into the green economy. By its green nature, such an economy requires multipurpose legal regulations including (environmental and commercial) principles of regulation, integrated definition, integrated criteria of legal facts, and legal remedies to stimulate greening of economic life. This chapter highlights several problems that precede the actual convergence of law and legislation. This is, first of all, the convergence of the environmental and economic policy of the State with conceptual and strategic foundations. This will benefit relevant State administration structures calling for administrative restructuring to ensure competent management in the green economy. Correspondingly, proper organization of the law-making process and scientific-legal research is critically required. The chapter analyses the essential aspects of the convergence of legal remedies for regulation of environmental management. It characterizes main structural components of environmental and economic law that have common features, and delineates the specified links in the course of legal regulation of natural resource management and environment protection.

Keywords: Environmental law; Economic law; Convergence; Natural resources; Environmental management; Environmental impacts

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1. INTRODUCTION

The modern transformation processes of the society require an adequate political, organizational, economic, and legal response to changes in social-economic and spiritual factors, new development trends. As a result, new legal regulations emerge offering grounds for possible intersections between established branches of law or its convergence. Recently, the issues of systemic relations between the branches of law have become the subject of discourse in legal science. The above mentioned provides grounds for research and re-thinking of some theoretical and practical problems in legal transformations, analysis of prerequisites for these processes, and prospects for further development. This chapter is devoted to theoretical and practical foundations of convergence of environmental and economic law and legislation, the study of their mutual influence and possible contradictions in the legal regulation of social relations guiding natural management and environmental protection.

2. CORRELATION OF ECONOMIC AND ECOLOGICAL INTERESTS: INTERNATIONAL ASPECT

The development of systemic relations between environmental law and economic law has its logic and prerequisites that underlie the world globalization processes. In particular, the development of the sustainable development concept was the outcome of prevalent ideology of civilization in the 21st century, and it emanated from the UN Conference on Environment and Development (UNCED)¹ held at Rio de Janeiro in 1992. This concept means the balance of economic, environmental, social, humanitarian, and other goals of social development while the process of utilizing the natural resources does not endanger the capability of future generations to satisfy their needs. The Declaration on Environment and Development adopted at this Conference set out the basic principles as the development benchmarks the member States should follow in developing their national policies. It is stated that the world development and environmental protection are

¹ UN Conference on Environment and Development [1992] United Nations, <https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_CONF.151_26_Vol.I_Declaration.pdf> accessed 12 February 2024.

interdependent and inseparable; all States and peoples should cooperate to complete the important task of poverty alleviation as a prerequisite for sustainable development and to fulfill needs of most of the world population. To solve the problems effectively, the States should cooperate to establish the favorable and open international economic system that would lead to economic growth and sustainable development in all countries. The national governments should promote the internationalization of environmental costs and use of economic means in order a contaminator to cover contamination related losses while respecting social interests and not violating the international trade and investment norms. Importance of environmental impact assessments before conducting planned activities to minimize the negative impacts on the environment was also highlighted in the UNCED.

It should be noted that the concept of sustainable development was internationally recognized and further developed, gaining paradigmatic significance, through the introduction of 17 Sustainable Development Goals (SDGs) declared in 2015 through the United Nations Resolution “Transforming Our World: the 2030 Agenda for Sustainable Development”². This document confirmed the intention of the world community to ensure sustainable development in its three dimensions - economic, social, and environmental - in a balanced and comprehensive way. In particular, social route is intended to alleviate poverty, eradicate hunger, ensure food security, improve nutrition, and so on. Economic path is aimed at promoting continuous, comprehensive, and sustainable economic growth, creating sustainable infrastructure, promoting comprehensive and sustainable industrialization and innovation. Environmental trajectory seeks to ensure availability and sustainable management of water resources and sanitation, transition to rational patterns of consumption and production, protection and restoration of marine and terrestrial ecosystems, combating climate change, and alike. It was stipulated that each State could have different approaches, strategies, models, and instruments available to ensure sustainable development considering its national conditions and priorities.

² Transforming Our World: The 2030 Agenda for Sustainable Development: Resolution of the United Nations General Assembly [2015] United Nations, <<https://sdgs.un.org/2030agenda>> accessed 12 February 2024.

The international legal approaches to form sustainable development components (in harmonious combination of social, economic, and ecological interests) have been reflected in environmental policy of Ukraine. It should be pointed out that the Association Agreement³ between Ukraine and the European Union, the European Atomic Energy Community, and their member States plays an important role in the formation of strategic development benchmarks for Ukraine. The Association Agreement provides for developing and strengthening the cooperation on political, socio-economic, as well as environmental fronts. In particular, Ukraine undertook to implement 29 EU directives and regulations on environment protection. It is expected to facilitate the implementation of long-term goals of sustainable development and green economy by preserving natural resources, improving economic and nature-preservation performance, integrating environmental policy into other spheres of the State policy, and increasing production with the help of modern technology.

Unquestionably, the Association Agreement has become a pointer for the development of the national environmental policy. Its foundations and goals for up to 2030 included ensuring the environmentally balanced use of natural resources. This was seen as a process of interaction between the society and environment that provides for achieving the optimum balance between the economic activity, satisfaction of material and spiritual needs of the population, maintenance of the quality environment and preservation of natural resources for future generations.

Current political foundations assert that the intricate economic operation of the State hinges on achieving sustainable socio-economic development. While the increasing material and spiritual needs of the population are satisfied, at the same time the rational and environmentally safe management and highly effective and balanced use of natural resources are provided, and the favorable conditions for human health, preservation and reproduction of environment and natural-resource potential are created.

³ The Association Agreement between Ukraine, on the one hand, and the European Union, the European Atomic Energy Community and their member states, on the other [2014]. Parliament of Ukraine, https://zakon.rada.gov.ua/laws/show/984_011#Text accessed 12 February 2024.

Better health of environmental, economic and social components was also considered as a basis for developing the national system of sustainable development goals. Thus, in 2015, the “Sustainable Development Strategy of Ukraine - 2020” was approved. One of its tenets was the improvement of living standards by ensuring sustainable economic growth in an environmentally friendly way and creating the favorable conditions for economic activity. Therefore, overcoming a conflict of economic and ecological interests was recognized as a priority. Later on, the Sustainable Development Goals of Ukraine 2030, approved in 2019, declared the transition to rational patterns of consumption and production, and preservation of natural ecosystems.

The development of legal regulation continued to remain a grey area in accordance with the Foundations (Strategy) of the State Environmental Policy of Ukraine 2030 adopted in 2019. The Strategy substantiates that the root causes of environmental problems in Ukraine are the following: 1) consistency of environmental priorities with the economic reasonability; 2) the prevalence of the resource- and energy-intensive industries supporting the economy having negative environmental impacts, which are considerably strengthened by the inappropriate legislation regulating economic management; and 3) physical and moral depreciation of capital assets in all sectors of the national economy, etc. Similarly, declared goals of the State environmental policy are identified as the following: a) overcoming imbalance existing in the economic, social, and environmental spheres; b) ensuring the condition of the environment that will facilitate the quality of life and well-being of the current and next generations; c) creating the situations facilitating agreements between the authorities, businesses and civil society encompassing the improvement of the quality of life of the citizens and ensuring the socio-economic and environmental stability; and d) encouraging sustainable business and environmentally conscious behaviour of the citizens.

To achieve the main goals of the State environmental policy, it is suggested to a) introduce the ‘ecosystem approach’ to all areas of the socio-economic development; b) facilitate sustainable development by introducing the balanced use of natural resources, as well as the preservation and restoration of natural ecosystems; and c) achieve the balance of the development components (economic, environmental, social). In this context, the balance should be maintained in the course of which the economic growth, material production, consumption, as

well as other kinds of social activities are in coordination, and all are taking place within the prescribed frameworks created while respecting the ecosystems' ability to restore, absorbing contaminations and maintaining the proper standards of living of the current and future generations.

The tenets of development are based on the different economic (business, entrepreneurial), environmental (conservational, resource-saving), social (public, civil), and State (national) interests. These interests often overlap or contradict each other in many spheres of social life, especially, in terms of use of natural resources. Public and private interests overlap more precisely. According to Anisimova (2019), the public nature of ecological interests provides for undertaking certain activities for social purposes.⁴ Ensuring ecological interests is carried out by adapting society to potential natural and man-made threats, providing the ability to prevent and avert environmental risks, promote the protection and reproduction of the natural resource potential of the country. The current public ecological interests consist mainly of satisfying the environmental needs of the current and next generations, ensuring the balanced economic growth based on the efficient use of natural and other resources; creating the competitive low carbon economy; identifying the environmentally clean energy sources; developing the environmentally clean productions; using the resource- and energy-saving technology; protecting the natural environment; improving the business environment, particularly, for small and medium businesses; minimizing the negative environmental impact caused by consumption and production system in the society.

Concerning the correlation between public interests and private economic interests, the scientific literature points out that today's business representatives, especially the large capital, ignore or treat the national interests, including the ecological ones, too unfavourably. This obviously calls for the idea of the social-oriented development of the States into question. Many production companies are still oriented towards the short- and mid-term economic benefits and routinely ignore the conservation component, as well as negative consequences in the distant future. At the same time, the issues of small and medium business interests that, according to some scientists, match the system

⁴ Anisimova, H. V., *Theoretical Foundations for Ecological Legislation Development in the context of the Natural and Legal Doctrine* (Kharkiv: Pravo, 2019) 501.

of national interests in the fullest and most harmonic way are virtually disregarded.⁵

According to Saurenko, the in-depth study of theory and practice of the business entities makes it possible to state that the interest is made up by the dialectical unity of the private (useful, egoistic) and public (ethical, social) parts.⁶ Both of these parts of the interest have a single subjective form of implementation, that is, an individual. Hence, both the private and public interests apply the principle of rationality as a natural quality of human nature determined by the phenomenon of resources scarcity. In this regard, the private and public interests a priori contradict each other.⁷ The private interest implements the principle of rationality. The public interest implements the principles of humanity and solidarity and is logically inconsistent in case the subject both of the private and public interest is a person.

Similar approach was adopted by researchers working in the sphere of environmental law. In particular, Yevstigneev considers the basis of sustainable development, first of all, in understanding that the economic, environmental, and social purposes and interests of society and individuals should not be opposed but mutually agreed.⁸ That is why ensuring the sustainable development objectively requires drastic changes, with the main focus on greening human's main activities, including the economic activity inculcating often the special use of natural resources.

In its turn, one of the important forms of ensuring sustainable development and balance of its environmental, economic and social components, according to Yevstigneev, is the legal support of environmental safety in terms of the special use of natural resources.⁹ The economic and environmental measures are directly implemented in this sphere. In contrast, the impact on the social component is indirect, as its proper implementation is most often dependent on harmonic interaction of the two first components that finally should provide for

⁵ Olena V Yakubyak "Correlation of private and public interest in the framework of the modern economic system" (2012) 3(29) Economic Bulletin of Donbass 193

⁶ Tatiana N Saurenko, 'Coordination of public and private interests in business' (PhD (Economic) thesis, Southern Federal University 2012) 10.

⁷ Ibid, 10.

⁸ Andrii S Yevstigneev, "Legal support of environmental safety of the special use of natural resources as a form of sustainable development" (2017) 1(2) Environmental law of Ukraine 15,16.

⁹ Ibid, 15-16.

the environmentally friendly and favorable living and developing the conditions of a human as a biological and social being .

The above mentioned is embodied in the correlation and interaction of the economic and environmental safety, the integrated components of national security. According to Getman and Anisimova, environmental safety and environmental protection are considered as the fundamental imperative statements of the current State's environmental policy.¹⁰ Thus, the interests on ensuring both the economic safety of the State and the environment protection should be combined in the course of sustainable development. The priorities of the safety of life and health of the population over the economic benefit should be followed. That is why, today's most critical problem for the world community is the saving of energy and resources in the context of national economy and the environmentally balanced natural resource management law.

Considering the above, it should be stated that today interaction of legal regulation of the economic activity with regard to the necessary environmental protection, natural resources preservation, and environmental safety remain relevant and is on agenda of many State agencies of Ukraine. An example is the Decision of the National Security and Defence Council of Ukraine "On Challenges and Threats to the National Security of Ukraine in the Sphere of Ecology and Priority Measures to Neutralize them" (2021). Considering the high risks for natural ecosystems and public health (that is due to the considerable environmental pollution, unreasonable exploitation of natural and resource potential, insufficient adaptability of sectors of the economy to the negative process of climate changes), the Decision was aimed at implementing a set of activities to overcome the highlighted environmental problems and to eliminate the threat to the national security of Ukraine. In terms of saving the resources, balancing the natural resource management, and protecting the natural ecosystems, the following activities should be pointed out: (1) strengthening the legal responsibility of business entities for illegal minerals production, including well drilling and operation without relevant permits; (2) developing the criteria to assess the risk from the economic activity in

¹⁰ Anatolii P. Getman and Hanna V. Anisimova, "Some environmental and legal aspects of sustainable development of Ukraine" (2017) 3 (19) Law and innovations 7, 9- 10.

the sphere of the forest protection, safety, use, and reproduction, etc. Although the suggested activities are important for certain spheres and types of natural resources management, they do not form the unified legal regulation system and are logically disconnected.

Consequently, the balance of economic, environmental and social interests in the implementation of the sustainable development concept is very important and, at the same time, a complex task due to different areas of business, state and society needs. However, an urgent need in preserving natural resources and favourable environment for the current and next generations, raising awareness about advantages of introducing resource-saving technology into the economic activity will become a unifying factor, providing for both the economic growth and environmental protection.

3. ENVIRONMENTAL AND ECONOMIC LAW IN THE SYSTEM OF INTERSECTORAL RELATIONS

Currently, the development and transformation of the national legislation of Ukraine is mainly conducted within the ongoing globalization and European integration processes. Hence, it requires the constant update to overcome contradictions and gaps, timely and adequate response to the modern socio-economic problems and challenges. Therefore, legal integration or convergence of some branches of law is required in order to form a new common world system of norms, aimed at ensuring the global interstate interaction in different spheres of social life.¹¹ The development of traditional branches of law and areas of scientific research brings up a question on the content as well as structural and systemic relations of these branches of law.¹² Such relations are observed within the implementation of so-called principle of intersectoral partnership and strengthening the role of environmental management in the State's management system to achieve three components of development: economic, environmental, and social. This combination and the mutual agreement provide for

¹¹ Anatolii P. Getman, "Current state and prospects of development of ecological and legal science in Ukraine" (roundtable 'Environmental law in the system of interdisciplinary relations: methodological principles', Kharkiv, December 2015), 15

¹² Anatolii P. Getman and Vitalii A. Zuyev, "Formation of ecological and legal science: resource aspect and problems of its integration" (2016) 132 Problems of Legality 104, 106.

ensuring the priorities of sustainable development. Thus, it is possible to find the common cross points of the environmental law with the civil, economic, and other laws and, correspondingly, to study the legal problems of the public and private partnership within the environmental protection. As a result, the peculiarities of formation of the agreement-based environmental law, legal regulation of the environmental insurance, audit, etc. must be considered.¹³

At the same time, theoretical research conducted by scientific experts shape the approaches to solving scientific and industry-specific problems, sometimes following one-sided approach, trying to fit, for example, the ecological relations into the system of other branches of law - administrative, civil or economic law. Thus, Dzhumaheldieva states that the formation of the natural resource legislation occurred in the absence of the Economic Code of Ukraine and economic law, which allowed considering it as self-consistent and independent, to some extent.¹⁴ The situation changed with the adoption of the Economic Code of Ukraine, by which a prospect of incorporating a number of the natural resource norms into the economic legislation, particularly those containing the regulation of the use of natural resources in the economic activity, was introduced. It is also pointed out that “one of the main areas for reviewing the existing paradigm of further development of law is greening of legislation on economic use of natural resources, that should be implemented not in the framework of the existing resource approach based on the disintegration of legal norms by their provision in special codes (Land, Water, Forestry Code, etc.) or integration in the particular encoded acts mainly oriented towards the nature management, but cohesively based on the unified principles and approaches provided for in the Economic Code of Ukraine”.¹⁵ However, such an approach is doubtful as it ignores the provisions of the Economic Code, P. 1 of Art. 4, stating that the land, mining, forestry, water resources, use and protection of plants and animals as

¹³ Mariia V. Krasnova, "Modern integration relations of the environmental law with other legal sciences" (roundtable 'Environmental law in the system of interdisciplinary relations: methodological basis', Kharkiv, December 2015) 47.

¹⁴ Hiulnara D Dzhumaheldieva, *Legal Regulation of Economic Use of Natural Resources* (Jurydychna dumka, 2014) 58.

¹⁵ Economic Code of Ukraine No. 436 [2003]. Parliament of Ukraine. <<https://zakon.rada.gov.ua/laws/show/436-15/conv#n1118>> accessed 16 February 2024.

well as territories and facilities of the natural reserves, and atmospheric air are not the subject matter of this Code.

Environmental and natural resource norms must be integrated in the economic legislation in the form of environmental requirements and requirements for rational natural resource management in the course of economic activity that uses natural resources. Today, Chapter 15 of the Economic Code of Ukraine (Art. 148-153)¹⁶ is devoted to the legal regulation of the use of natural resources in economic management. In particular, these norms evidence the attempt to separate the peculiarities of legal procedure of natural resources' use in the economic management; regulate the use of natural resources directly by the business entities; delineate the peculiarities of the procedures of the use of natural resources both under the right of ownership and under the right of use; fix the rights and obligations of business entities regarding the use of natural resources. It can be concluded that the natural resource management is a factor combining the branches of the environmental and economic law. However, the social significance, and thus, the mandatory nature of the norms that regulate the economic natural resource management differ in these branches of law.

It is obvious and logical that the Economic Code of Ukraine regulates the economic relations related to organization and implementation of economic activity between business entities, as well as between these entities and other participants of economic relations. Meanwhile, the influence of the economic legal regulation on environmental legal relations is considered as indirect. However, one should agree with the position of Getman and Zuyev that when the regulation basis of the business entity and its activity is out of touch with the purpose of the legal regulation, the value and worldview component of the legal regulation is lost, which negatively impacts on its quality.¹⁷

The above-mentioned evidence witnesses that despite the stability of the subjects of environmental and economic law, their intersectoral and interdisciplinary relationships and connections are still the object of scientific discourse. Thus, the main cross points of the mentioned branches of law regarding the subject matter, methods and means of legal regulation of social relations, their subject-object composition should be considered. The subject matter of the environmental law is the relations between the subjects regarding the

¹⁶ Ibid.

¹⁷ Getman and Zuyev (n12) 116 .

possession, use, and restoration (reproduction) of natural resources, natural objects and complexes, environmental protection and environmental safety, and, in certain cases, protection of people and environment from harmful impact. According to the Law of Ukraine "On Environmental Protection" (Art. 1), the objectives of the environmental legislation provide for the legal regulation of the mentioned relations, as well as prevention and elimination of the negative impact of the economic and other activities on the environment, preservation of natural resources, genetic fund of the wildlife, landscapes and other natural complexes.

As mentioned above, the economic legislation and law regulate the public economic relations arising in the course of organization and implementation of economic activity between the business entities and other participants of the economic relations. According to Art. 3 of the Economic Code of Ukraine, the economic activity is the activity of business entities in the sphere of social production aimed at goods production and sales, works performance, or services provided in value terms and with the determined price. The economic activity can be performed both for achieving economic and social results and for receiving the profit (entrepreneurial activity) and without such purpose (non-commercial economic activity).

In the environmental sphere, especially in terms of natural resource management, there are lots of elements related to the economic activity, in particular: a) some kinds of the special use of natural resources (for instance, wood production, secondary timber production, hunting, industrial fishing, water abstraction from water bodies using engineering facilities or devices, etc.); b) economic management in the use of natural resources (forestry, water, hunting, fish-farming, aquaculture, etc.); c) economic activity based on the use of useful qualities of the natural environment (activity in the sphere of recreational, tourist, health and other services to the population).

Each of the mentioned elements, though having the features of economic activity, is subject to the peculiarities and requirements of environmental law considering the natural, economic conditions and intended use of the natural resources. Thus, for example, the organization of forestry stipulates division of forests into categories, separating specially protected forest areas; forest management procedure; maintenance of the state forest cadaster, forest recording and monitoring; forest restoration and other organizational and

engineering activities aimed at forest safety and protection from harmful man-made impact and depletion. In turn, main objectives of water management are: meeting the needs of the population and industries in the required amount of water and its quality; ensuring regulation, restoration, and protection of water resources; control over rational use of water resources; introduction of measures to prevent harmful action of waters, etc.

Furthermore, the most common group of social relations arising in the economic sphere are, among others, the relations concerning the use of natural resources. Thus, in the course of the agricultural activity, for example, the land (as the main means of agricultural production), water and forest resources, biological organisms, natural plant resources, etc. are used; in the energy sphere and related economic activity, the energy resources (wind, sun, water energy, etc.), mineral resources (oil, gas, coal, etc.) are consumed.

It should be noted that environmentally-oriented entrepreneurial activity is actively developing. In particular, among such items are collection, sorting, processing and disposal of industrial and domestic waste; manufacture of the equipment for controlling environment pollution and cleaning atmospheric air, water, and other natural resources; development and use of biotechnology, production of organic food products and household items, etc. Consequently, several groups of environmentally friendly entrepreneurship can be outlined: 1) entrepreneurship to ensure nature management effect as a side effect; 2) environmentally friendly production; 3) energy generation and conservation; 4) expert, consulting technology, environmental services.¹⁸

In this case, one can observe some kind of a merger of economic (profit, economic growth) and ecological (environmental protection, resource conservation) interests, the regulation of which should lead to a certain social effect (employment, maintaining public health, improving the living standards). The scientific literature also provides with examples when interests of different levels are combined into one kind of economic activity within the natural resource management. Thus, the use of water resources by water supply companies is aimed at meeting the needs of population and economic entities of the territory (drinking or industrial). This common goal includes the individual

¹⁸ Antonina G. Bobkova, "Kinds of environmentally friendly entrepreneurship" (roundtable "Modern scientific and practical problems of environmental, land and agrarian law", Kharkiv, December 2013) 22-23.

interests of water supply companies (in the form of profit from the supply of water resources), subscribers (obtaining sufficient water to meet personal needs and use in economic activities), local governments (ensuring the effective life support system in the jurisdiction), the State (ensuring the decent living conditions for the population).¹⁹ It should be noted that implementation of these interests is possible only within the framework of the public interest, which at the same time limits the degree of satisfaction of individual interests of its subjects.

The analyses of the environmental and economic legislation help identify the basic principles, according to which the legal regulation of natural resources use in the economic activities is carried out. Thus, the Law of Ukraine "On Environmental Protection" (Art. 40) provides for mandatory environmental requirements for the use of natural resources by citizens, enterprises, institutions and organizations.²⁰ These requirements include a) rational and efficient use of natural resources based on the extensive application of new technologies; b) implementation of measures to prevent damage, pollution, depletion of natural resources and other negative environmental impacts; c) implementation of measures to reproduce the renewable natural resources; d) application of biological, chemical and other methods for improving the quality of natural resources that ensure the environment protection and public health; e) preservation of territories and objects of the nature reserve fund, as well as other especially protected territories; f) carrying out the economic and other activities without violating the environmental rights of other persons; g) implementation of measures for conservation and inexhaustible use of biological diversity in the course of activities related to the genetically modified organisms.

The environmental legislation also provides for requirements and measures to ensure environmental safety in the course of economic activities. In particular, the subjects of such activities must comply with the environmental protection requirements and ensure the safety of people: 1) during the arrangement, design, construction, reconstruction, commissioning and operation of enterprises, buildings and other facilities (projects of economic and other activities must have the environmental and human health impact assessment materials); 2) when using plant protection agents, mineral fertilizers, oil and oil products, toxic

¹⁹ Dzhumaheldieva (n14) 13.

²⁰ Law of Ukraine "On Environmental Protection" [1991]. Parliament of Ukraine, <<https://zakon.rada.gov.ua/laws/show/1264-12#Text>> accessed 16 February 2024.

chemicals and other products; 3) protection against uncontrolled and harmful biological impact; 4) against acoustic, electromagnetic, ionizing and other harmful impacts of physical factors and radioactive contamination; 5) against waste pollution; 6) when using vehicles and other mobile means and installations; 7) in the course of scientific research, implementation of discoveries, inventions, application of new equipment, imported machinery, technologies and systems, etc.

Notably, the Economic Code is more restrained in terms of environmental regulation of economic activity. Thus, Art. 6 states that one of the key principles of economic management is a limitation of the State control and regulation of economic processes in order to ensure the socially oriented economy, fair competition in the entrepreneurship, environmental protection, consumer protection, social and state security.²¹ The most powerful “environmental” center of economic and legal norms is the obligations of business entities enshrined in Art. 153 of the Economic Code. These obligations include the use of natural resources according to their purpose; effective and efficient use of natural resources based on the application of new technology in production; taking measures for timely reproduction and prevention of damage, contamination, pollution and depletion of natural resources in the course of economic activity; timely payments for the use of natural resources; conducting economic activity without violating the rights of other owners and users of natural resources; compensating for losses caused to the owners or primary users of natural resources.

The important aspect of analyzing the nature of environmental and economic law convergence understands the application of certain legal means for regulating environmental and economic social relations. Such means can be presented as separate functions of environmental and economic management or as special methods of legal regulation. Thus, among the means enshrined in the environmental legislation, which are simultaneously used as means of regulatory influence in the sphere of economic activity, the following can be determined: agreement-based natural resource management; planned approach; normative assessment of natural resources; licensing of some kinds of activities that impact the environment; environmental impact assessment of economic activity; regulation of emissions and limitation of the use of natural resources;

²¹ Economic Code of Ukraine (n15).

economic incentives for businesses that use resource-saving and environmentally friendly technologies, etc.

In turn, the common actors of environmental and economic law, are represented by business entities that use natural resources for various purposes, such as production, economic, business, including those that meet social needs. According to Art. 55 of the Economic Code, the business entities are the participants of economic relations that perform the economic activity by exercising the economic competence (a set of economic rights and obligations), possess separate property and bear responsibility under their liabilities on such property, except as otherwise provided by the legislation.²² Natural resource users can be either individuals or legal entities. Their activities can be related to the use of natural resources directly (as the main means of production and their useful properties, e.g., agricultural enterprises, farms, individual farming, fisheries, forestry, water management enterprises, etc.), or indirectly, by providing or accompanying the main economic activity, e.g., land developers; chemical, oil refining, machine-building and other enterprises, which in the course of their activity make emissions into the atmosphere or discharges of pollutants into water bodies, etc.).

Despite the diversity of business entities that use natural resources or have an ecological impact, they all have certain rights and responsibilities, which are determined, among others, by the environmental legal requirements. Additionally, business entities can use natural resources both under the right of ownership and under the right of use. In other words, business entities, in addition to the economic capacity, must also have the natural resource capacity (ability to have natural resource rights and assume natural resource responsibilities) and legal capacity (ability to acquire natural resource rights by their actions and independently perform the respective duties), i.e., to have natural resource legal personality.²³

Particular attention should be paid to the objects of the environmental law that can be used in economic activities. In accordance with the Law of Ukraine “On Environmental Protection” (Art. 5), the state protection and regulation on the territory of Ukraine shall cover the following: environment as a set of natural and natural-

²² Economic Code of Ukraine (n15).

²³ Anonymous, *Natural Resources Law of Ukraine: Study Guide* (2nd ed. Publishing House “Helvetyka”, 2018) 45.

social conditions and processes; natural resources (both involved in the economic circulation and timely unused), such as land, subsoil, water, air, forest and other flora, fauna, landscapes and other natural complexes. As a result, scholars suggest that all these components are divided into objects of legal protection and objects of legal relations of the environmental law (or objects of legal regulation).²⁴ In turn, according to the provisions of general theory of law, the object of legal relations is a certain personal or social benefit, for the acquisition and use of which the parties' mutual rights and legal obligations shall be established.²⁵ The objects of legal relations usually satisfy the immediate needs of society and individuals. Accordingly, the objects of legal relations of the environmental law can be the items of property and natural resource management reflecting its natural resource component, which is formed and developed as the natural resource law. As stated in the ecological and legal literature, the objects of the natural resource law are naturally complete and relatively separate natural components that exist in interaction with the social environment and perform appropriate functions for a human and the society.²⁶

It is noteworthy that the natural resources are at the same time the elements of ecosystem, capable of satisfying certain human needs. Thus, natural resources in the quality of objects of legal regulation are considered as sources of consumption, which traditionally form the basis of the modern market economy and economic management. Being of a natural origin, in relation to the natural environment, and performing life support functions, natural resources may be in civil circulation or in economic management on certain legal titles (property rights or rights of use). Thus, they may be subject to certain legally significant actions (purchase/sale, pledge, exchange, gift, etc.).

Krasnova distinguishes two groups of natural resources, depending on their functions: a) natural resources as tangible values are the parts of the nature or natural objects that are involved in the economic circulation and that, due to their peculiar features, can be used by a human, society and the state for satisfying multiple needs; b) natural resources as intangible values are the natural objects involved in

²⁴ Mariia Krasnova, "Condition and prospects of development of the doctrine of objects of the ecological law: scientific and methodological aspects" (2013) 2(96) Bulletin of Taras Shevchenko National University of Kyiv, Legal Sciences 8, 9.

²⁵ Petro M. Rabinovich, *Fundamentals of the General Theory of Law and State: Study Guide* (5th ed. Attica, 2001) 83.

²⁶ Anonymous, *Natural Resources Law of Ukraine* (n23).

the economic circulation and included into the ecological systems as necessary components, which are of particular significance for satisfying the individual and social needs by fulfilling ecological, healthcare, recreational, scientific and cognitive, aesthetic and other functions.²⁷ Characteristics of natural resources depending on their inclusion in the economic circulation or exclusion from the latter for special protection within specially designated areas make it possible to identify the natural resource component and environmental component of the environmental law.

It should be noted that the basic natural resources play an extremely important role in economic management, primarily due to their versatility. For instance, the land combines many other natural components, main means of agricultural production, the local basis for human life, location of the objects, and economic management. Water (water bodies) is used as the natural resource to meet drinking and household needs of the population, to provide the centralized and decentralized water supply, to ensure water transport, and to provide energy. The natural resource having medicinal and health properties are used for recreational, tourist, and health activities. The reservoirs are used for discharge of wastewater produced during the process of industrial and other activities. The ecological and legal literature has repeatedly emphasized the multifaceted functions of natural objects and its resources. Thus, O.V. Rohovenko, in his research on the legal nature of the coastal area of seas, concludes that it is a complex object of legal regulation, namely: a) the object of landscape law; b) the natural resource; c) the zone for recreational and medical and health-improving activities; d) the area for economic activity.²⁸ The scholar emphasizes that the dialectical combination of these features of this natural object with the reproduction of the basic principles of legal regulation will contribute to a clear definition of its legal regime through the prism of regulation of economic activity. This phenomenon of natural resources

²⁷ Mariia Krasnova, "Condition and prospects of development of the doctrine of objects of the ecological law: scientific and methodological aspects" (2013) 2(96) Bulletin of Taras Shevchenko National University of Kyiv, Legal Sciences 8, 10.

²⁸ Oleh V. Rohovenko, "Legal regime of the coastal area of seas" (PhD (Law) thesis, National University of Bioresources and Natural Resources of Ukraine, 2012) 6.

is pointed out by many other researchers belonging to the fields of both the environmental and economic law.²⁹

Thus, the environmental law and economic law have much in common in regulating social relations guiding the use of natural resources. However, the approaches and ways of legal influence on the activities of the relevant entities in these areas are different.

4. ENVIRONMENTAL MANAGEMENT AS A FACTOR OF CONVERGENCE AND BALANCING ECOLOGICAL AND ECONOMIC INTERESTS

Nowadays the economic activity of mankind makes a lion's share of the today's environmental problems. Many scientific works have been devoted to this issue on a larger scale, and it makes no sense to repeat axiomatic things. However, there are fewer works on determining specific steps towards the reformation and modification of the mentioned economic mechanisms. Generally, it should be assumed that the model of environmentally responsible management can be implemented by a complete paradigm shift in the organization of economic life. Today the environmentally friendly management is in question, as the problem is not only to neutralize the pollution but also to eliminate those destructive changes in the environment that have already accumulated and acquired their negative dynamics.

The first stage of such modification seems to begin with developing the constitutional and legal grounds for tackling the ecological crisis as the main problem of socio-economic life. The current norms of Constitution of Ukraine are extremely insufficient to determine the powerful substantive impact on the nature and direction of the current environmental and economic legislation. Thus, the recognition of the priorities of sustainable economic development, green economy, and environmental management is primarily demanded. Apparently, systematization of the constitutional and legal norms is reasonable to be implemented in a separate section of the Constitution - "Environmental System". Similarly, the creation of the section "Economic System" is required. The mentioned structural

²⁹ Bobkova, A. G. *Legal Support for Recreational Activities* (Yugo-Vostok, 2000); Vladislav V. Kononov, "Legal regime of the protected shoreline belts in Ukraine" (PhD (Law) thesis, Taras Shevchenko National University of Kyiv, 2013).

systematization in the Constitution of Ukraine would allow for in-depth correlation and meaningful convergence of the norms of both sections.

The second stage assumes the creation and implementation of interconnected environmental and economic policy of the State. Nowadays, economic policy and environmental policy of Ukraine are developed separately, and mostly do not correlate with each other. Ineffectiveness of such approach is caused by involving different State authorities, different scientific and doctrinal support, different legal documents (Concepts, Strategies, State Programs, etc.) and, ultimately, different branches of law. Consequently, the inevitable combination of ecological and economic public interests as well as the creation of economic and ecological symbiosis is required. Meanwhile, it can be only achieved by a common State and legal mechanism for the formation of environmental and economic policy.

It should be pointed out that the current legal documents containing the provisions of the State environmental policy of Ukraine also cover some economic topics and aspects. At the same time, self-consistency of economic program documents, particularly in the areas of construction, transport, and investment leads to actual negligence of their environmental component. This problem can be solved by introducing a hardware segment into the state executive system that would be competently burdened with the promotion and development of the “green economy” as a complex category with ensuring its dominance in the structure of the national economy.

At the third stage of developing political and legal support for convergence of the ecological and economic issues, the question of symbiosis of the environmental and economic legislation should be raised. It is important that, in this context, the term ‘economic legislation’ is interpreted in a broad sense, including certain issues of the agrarian and financial law. Thus, a question about the effective organization of the law-making process and the appropriate organization of the scientific and expert activities arises. After all, the barriers exist between the environmental, economic or other branches of law and legislation, which are separated by a relatively strict criterion of subjects and methods of regulation, and between the teams of specialists and scientists.

At the same time, legal regulation of economic activity or agricultural production activity in the framework of strict requirements of the modern environmental law requires the introduction of a number of the agreed legal remedies, principles of economic management,

definitions, objects of legal regulation, relevant range of business entities and, most importantly, comprehensive intersectoral mechanisms of organizational and economic influence of the State on the activities of the entities that can be both restrictive and stimulating, supportive.

However, a set of the following questions arise. Can 'decarbonization' become a principle of economic management? What is the 'greening' of economic management? Which qualification criteria can determine such concepts as 'environmental management', 'environmental innovations', etc.? Obviously, the process of converging environmental and economic legislation preliminarily requires certain 'rapprochement', collaboration of the environmental law and economic law, as well as determination of complex objects of scientific research and regulation.

It should be noted that the concept of sustainable development within the green economy involves the formation of an extremely complex hybrid model of economic activity. Thus, environmental factors, such as climate change, ecological imbalances, lack of vital resources, etc., determine each other and require own systematization and modelling of current and future development options. However, in case of environmental issues, the threats are understood, and possible means to neutralize and overcome them are identified. The expenditure part can also be calculated and correlated with the budgetary and extra-budgetary resources of the State. On the other hand, the correlation of the relevant environmental imperatives with the functioning market mechanisms of self-regulation in the conditions of the international economic competition makes it difficult to determine the value of transforming the traditional economy into the framework of environmental management.

Therefore, a sufficiently wide range of legal remedies prioritizing the greening of economy should be introduced. This shall be done with the help of environmental management that provides for the existence of many special legal regimes targeted to achieve the prognosed ecological impact in the course of economic activity. It is obvious that the concept of ecological impact has evolved within environmental legal framework and, as a result, has a narrowly specific use. However, its implementation into the framework of economic and legal regulation is more than reasonable. In turn, to become a real legal instrument, the concept of 'ecological impact' must be classified and qualified by the lawmaker. In fact, the development of special legal regime for green

economy and greening processes of economic activity is required. In turn, ecological impact can be considered as the subject of the business entity (particularly in the field of waste management), and a side effect of using innovative approach or equipment for producing traditional goods and services. Additionally, the ecological impact can be present even when the production activity improves the state of the environment, restoring it to the parameters that existed before mass pollution (or environmental destruction). For instance, the innovative developments for extracting CO₂ from the atmosphere are undoubtedly one of the most desirable kinds of ecological impact.

A similar complexity is observed while identifying and qualifying different types of environmental management. Thus, on the one hand, environmental management provides several requirements for organizational and legal forms of business entities. For instance, environmental management can be carried out on the basis of commercial and non-commercial economic management, the scope of legal personality and license conditions can differ. On the other hand, the effectiveness of legal means for organizational and economic influence of the State on such economic activity is in question. Noteworthy, it is the State that should create preconditions for economic efficiency. Meanwhile, a combination of incentives should ensure the level of innovative renewal of the business entity's assets and its environmentally oriented activities should reach a competitive level over time. For example, “green tariff” should not be a matter of lifelong fixation, which is only good for the owner of alternative energy sources. Instead, modification of the tariff level over time should be introduced, in order to encourage the “alternative” operators to increase efficiency and take over the owners of traditional energy-generating companies.

The current legislation of Ukraine contains a number of laws that create preconditions for stimulating economic activity to transform to environmental management through various legal regimes. First of all, it is the Law of Ukraine “On the State Support of Business Entities”, “On Public-Private Partnership”.³⁰ An important basis is also made up

³⁰ Law of Ukraine “On the State Support of Business Entities” 2014. Parliament of Ukraine, <<https://zakon.rada.gov.ua/laws/show/1555-18#Text>> accessed 18 February 2024; Law of Ukraine “On Public-Private Partnership” 2010. Parliament of Ukraine, <<https://zakon.rada.gov.ua/laws/show/2404-17#Text>> accessed 18 February 2024.

by the norms of the Economic Code of Ukraine, which determines the types of special economic management regimes.

The objects of special legal regimes may be environmental innovations, their introduction into the production process, the sale of innovative products, and a list of actual activities, where the State determines the most powerful socio-economic relevance. This refers to the question's value in the context of global warming and transition to sustainable agriculture. The creation of appropriate plant varieties, seed production and sustainable agricultural activities for their use requires the State support. Again, it is important to emphasize that this is not synonymous with the subsidized non-viability of the relevant economic activity. The goal of the lawmaker is to adapt agricultural activities to new climatic conditions, but with a new sought level of profitability. The environmental management in the field of waste management accumulated in landfills and greening activities also require a special management regime in Ukraine.

However, it is undoubtful that such traditional environmental pollution sources as energy, metallurgy, chemical industry, transport, construction, etc. require “greening”. It is supposed that to stimulate large business in these spheres, it would be possible to use the potential of the public-private partnership to implement the environmentally oriented innovative development projects. Due to the high level of economic concentration, the large business organizations are unique, which means that using the general special regime may be unnecessary. The use of legal forms of the public-private partnership, which would individualize the relationship between the State and the business entity in terms of introducing environmental innovations, could be quite effective. However, transparency and public control are ensured.

5. CONCLUSIONS

Therefore, in the context of the exacerbated ecological crisis, which has all the features of ecological catastrophe, any activity to satisfy economic interests, economic policy, development of economic legislation, as well as public administration and regulation in the economic sphere can only take place within the requirements of environmental protection. In turn, public relations, which arise in the course of achieving sustainable development, are regulated by many branches of law. In particular, they are transformed through the

integrated connection of the environmental, land, agricultural, civil and economic law. According to the current national legislation of Ukraine, environmental legal relations are based either on various forms of ownership or the right to use natural resources, and arise in the process of a) use and reproduction of natural resources; b) providing for environmental protection; c) ensuring environmental safety.

Given the need to combine the economic, ecological and social interests of mankind to achieve sustainable development, as evidenced by many international documents and principles, the convergence of the norms of environmental and economic law and their harmonization are important to achieve this goal. The priority role should be played by the State environmental policy, which in current conditions is considered an integrated factor of socio-economic development of Ukraine and, thus, should ensure the transition to sustainable development of the national economy and ecologically balanced system of natural resource management.

In terms of ongoing development of market economy and intensification of internationalization processes of economic life, the main task of economic law is to ensure systemic legal support for effective and balanced functioning of economic turnover in order to establish and maintain the public economic order, which should be ensured both through the public and private legal principles. The mentioned processes often occur within the use of natural resources for economic purposes, extraction of natural resources from the natural environment to receive profit, or deterioration of natural resources' quality in the process of their commercial use that leads to negative environmental impacts. Therefore, it is necessary to strengthen the rules of economic legislation with the environmental requirements for such activities. In this case, the proposals of some scientists on the greening of economic legislation should be supported.³¹

Thus, the main objective of the environmental law strives, on the one hand, to ensure environmental protection, restoration and conservation of natural resources, and on the other hand, to promote legal regulation of their use, including the economic sphere. In turn, the rational use of natural resources, their conservation, reproduction and comprehensive protection is the most important prerequisite for sustainable development. Undoubtedly, sustainable development

³¹ Dzhumaheldieva (n14) 178.

requires ensuring the environmental safety for the current and future generations, maintenance of the environmental balance, and, consequently, clean and healthy environment. The property wealth and safely natural environment should balance each other in the system of human values, and the environmental law must become a counterweight to all the legal spheres.

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Natural resources have dropped out of the competitive equation. In fact, a lack of natural resources may even be an advantage. Because the industries we are competing for - the industries of the future - are all based on brainpower.

— *Lester Thurow* —

The Legal Landscape of Climate Change in Ukraine: Challenges and Prospects

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ABSTRACT

When climate change is one of the most urgent, complex and challenging planetary problems of the present, threatening the global economy and international security, it has to be primarily regulated domestically at the level of a State. The present article aims to examine the status quo of legal regulation of climate change issues in Ukraine. Accordingly, the critical analyses of the national climate legislation and whether it corresponds with the State policy's strategic aims are conducted; the provisions of strategic documents on climate change adaptation and mitigation in Ukraine are examined and the evaluation of such regulatory mechanism's efficiency and effectiveness is performed. As a result, the author points out the drawbacks of climate national policy and law and offers a set of suggestions for its improvement.

Keywords: Climate change; State policy; State climate policy; UNFCCC; Association Agreement; European Integration; European Green Deal

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1. INTRODUCTION

When climate change is one of the most urgent, complex and challenging global problems of the present it has to be primarily regulated locally, at the level of a State. This is due to the fact that climate change poses an immediate threat to the national security of the country and the well-being of its citizens, such as an increase in natural disasters, a threat to food security, water shortage, economic losses, etc., and thus it is the local governance that has to respond promptly. Article 16 of the Constitution of Ukraine proclaims that ensuring environmental safety and maintaining ecological balance in the territory of Ukraine is the responsibility of the State.¹

Ukraine has already faced climate-driven changes in various spheres and sectors. Increased incidence of strong floods in the last 20 years has affected nearly one-third of the population, especially in the Carpathian Mountains and its foothills. Droughts now occur on average once every three years, causing a 35-trillion-litre deficit of water for Ukraine. In 2021, the situation was critical as the probability of restricting Ukraine's citizens' constitutional water use rights was considered high.²

As a result of climate change analysis in some regions of Ukraine, it was found that, over the past decade, thermal mode, moisture, wind frequency, etc., have changed significantly, leading to the increased number of wildfire cases. Extreme weather events also inflicted significant damage on energy infrastructure, like a severe windstorm in July 2019 damaged power lines in Ukraine and left around 600 towns and settlements temporarily without electricity. The vulnerability of the population is magnified by infrastructure deficiencies such as an ageing and fragile housing stock and limited potable water supply.

The full Russian-scale invasion of 2022 has drastically exacerbated the situation when economic shocks and the humanitarian crisis are likely to divert resources from climate strategies and planning. Notably, total emissions linked to Russia's war on Ukraine are estimated

¹ Constitution of Ukraine (1996) <<https://zakon.rada.gov.ua/laws/show/254k/96-bp#Text>> accessed 25 March 2021.

² 'The Risk of Water Shortage and Implications for Ukraine's Security' (*Jamestown*, 2021) <<https://jamestown.org/program/the-risk-of-water-shortage-and-implications-for-ukraines-security/>> accessed 1 April 2023.

to have already amounted to 150 million tons of CO₂ equivalent as of September 2023 - representing \$9.6 billion in global climate damage³.

The modelled projections of further increase in average annual temperatures in Ukraine (1.1 °C by 2040 and 4.3 °C by the end of the century, subject to excessive anthropogenic impact) will lead to significant economic losses, negative impact on public health and labour productivity, reduced yields and deterioration of air quality, increased risk of forest fires, significant water shortages due to reduced water resources, increased number of natural disasters, threats to food security (reduced yields, shortages or significant rise in food prices), reduction of territories due to coastal flooding, forests degradation and loss of ecosystems and biodiversity, and loss of territories due to flooding of coastal areas⁴.

According to the 2022 Environmental Performance Index, Ukraine's climate performance was rated at 69.2 out of 100, ranking it 26th out of 180 countries worldwide⁵. Despite the overall positive assessment, the intensity and amount of greenhouse gases per capita in Ukraine are high and significantly higher than in most EU member states. This is, among other things, due to the fact that in 2018-2019, Ukraine provided €750 million in direct subsidies to support electricity production from coal, which is the largest amount of subsidies allocated to electricity production from hard and brown coal among all Energy Community member states. In addition, in 2020, Ukraine was the largest source of sulphur dioxide (SO₂) emissions in Europe, with coal-fired power plants accounting for the majority of emissions. In turn, emissions from Ukrainian coal-fired power plants exceed EU standards by 40 times, as flue gas cleaning from sulphur and nitrogen oxides is virtually non-existent at Ukrainian coal-fired power plants.

³ L de Klerk, L and others, 'Climate damage caused by Russia's war in Ukraine' (Initiative on GHG accounting of war). <https://en.ecoaction.org.ua/wp-content/uploads/2023/12/20231201_ClimateDamageWarUkraine18monthsEN_1.pdf> accessed 8 February 2024.

⁴ Law of Ukraine 'On the Basic Principles (Strategy) of the State Environmental Policy of Ukraine for the period up to 2030' (2019) <<https://zakon.rada.gov.ua/laws/show/2697-19>> accessed 25 March 2021.

⁵ The Environmental Performance Index 2022 (EPI) is based on data that reflects the state of compliance with the Sustainable Development Goals and assesses national progress towards their achievement. Using 40 performance indicators divided into 11 categories, the index analyses the performance of 180 countries in the areas of climate change, environmental protection and ecosystem resilience. <<https://epi.yale.edu/epi-results/2020/country/ukr>> accessed 8 February 2024.

Moreover, according to the assessment of Ukraine's first Nationally Determined Contribution, the climate commitments are defined as "grossly insufficient". This means that the measures envisaged under Ukraine's climate policy in 2030 may lead to an increase rather than a reduction in greenhouse gas emissions, and contradict the Paris Agreement's goal of limiting the global temperature rise to less than 1.5°C.

In turn, the absence of a comprehensive regulatory framework on climate change and a national cross-sectoral policy to achieve carbon neutrality, as well as underdeveloped instruments to stimulate greenhouse gas emission reductions, low level of regulation of activities and liability of business entities, significantly hinder the country's ability to tackle the climate crises.

In light of the abovementioned considerations, the present article aims to examine the current state of legal regulation of climate change issues in Ukraine. Accordingly, the underlying tasks are: to carry out the critical analysis of the national legislation concerning climate change regulation and whether it corresponds with the State policy strategic aims; to analyse the provisions of approved strategic documents on climate change adaptation and mitigation in Ukraine; to evaluate how efficient and effective such regulatory mechanism is; to find and illuminate the current legislative and State policy's gaps; and formulate theoretical and practical suggestions for their further improvement and development.

2. LEGAL FRAMEWORK FOR CLIMATE CHANGE IN UKRAINE

The discussion on the legal protection of climate arose in the middle of the twentieth century, accompanied by research activities of scientists and jurists to study the climate system, its variability, sensitivity, external and internal factors. In the recent decade, there have been theoretical debates on climate law and whether it has already been formed as a new field of law. Dernbach and Kakade stated that 'climate change law is a new and rapidly developing area of law'⁶; Peel defined

⁶ John C Dernbach and Seema Kakade, 'Climate Change Law: An Introduction' (2008) 29 Energy Law Journal, <<http://johndernbach.com/wp-content/uploads/2013/08/DernbachKakade-ClimateChangeLawIntro2008.pdf>> accessed 21 April 2023.

climate change law as a distinctive body of legal principles and rules.⁷ Meanwhile, other scholars expressed doubts about ‘the feasibility of addressing climate law as a new field of law’⁸, or that ‘it is a discrete body of law with its own sources, methods of law-making, and principles, or that it is a self-contained regime’⁹. Turning to the legal doctrine of Ukraine, it substantiates the need to develop legal measures to protect the climate within a completely new area of policy and law, while underlining that it requires further scientific and theoretical justification.¹⁰

Summing up all the aforementioned, it is worth highlighting that the urgency of combating climate change and its impacts was declared by the international community in 2015 with the adoption of the 2030 Agenda for Sustainable Development by all United Nations Member States (the Sustainable Development Goal No. 13).¹¹ Thus, from author’s point of view, it is obvious that the legal protection of climate has already become the objective reality of the law.

However, currently, in Ukraine, there is no framework law which shall determine the legal and organizational bases for mitigating climate change and adapting to its impacts, while the legal framework on climate change is fragmented and mainly comprises secondary legislation. Overall, climate change is mainly considered in the context of the international climate obligations of Ukraine.

Additionally, climate is not defined as an object of legal regulation, either by environmental law or any other area of national law. This is a significant legislative drawback that introduces imbalance and ambiguity in defining such concepts as climate change, climate mitigation, etc., which complements the legislative inability to develop effective measures to address climate-related issues.

⁷ Jacqueline Peel, 'Climate Change Law: The Emergence of a New Legal Discipline' (2008) 32 Melbourne University Law Review 922.

⁸ Daniel Bodansky, Jutta Brunnée and Lavanya Rajamani, *International Climate Change Law* (Oxford University Press, 2017).

⁹ J Ruhl and James E Salzman, 'Climate Change Meets the Law of The Horse' [2012] SSRN Electronic Journal, <<https://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=3376&context=dlj>> accessed 19 April 2021.

¹⁰ Hanna Anisimova, 'Pravove Zabezpechennya Okhorony Atmosfernoho Povitrya, Ozonovoho Sharu ta Klimatu' in AP Getman and others (eds), *Pravova okhorona dovkillia: suchasnyy stan ta perspektyvy rozvytku: monohrafiya* (Pravo 2014).

¹¹ UN General Assembly 'Transforming our world: the 2030 Agenda for Sustainable Development' (21 October 2015) A/RES/70/1 <<https://www.refworld.org/docid/57b6e3e44.html>> accessed 26 March 2023.

It is noteworthy that Ukrainian jurists in the field of environmental law have repeatedly underlined that climate should be determined as an object of legal regulation along with the so-called 'classical objects' of environmental law. According to Malysheva, overcoming anthropocentrism in the regulation of environmental safety should also become an important reserve for the ecological and legal development of Ukraine in the future. New technologies, the latest social phenomena, and climate change affect the subject of regulation of environmental law and are designed to ensure its development more widely.¹² Krasnova also notes that a number of environmental objects of environmental law is expanding, in particular, by including (*inter alia*, with the ratification of acts of international environmental law) to them such objects as climate, ozone layer, biodiversity, ecological network, etc.¹³

In this context, it is important to pay attention to the Climate Programme of Ukraine, which was one of the first legal documents to be developed and approved (back in 1997) in response to recognizing the problem of anthropogenic climate change and as part of the World Climate Programme.¹⁴ The document referred to the climate as one of the main natural resources upon which living conditions, human activities, directions and level of economic development depend. It was also stated that climate is one of the main factors shaping the natural environment, and even minor changes in it, along with overall poor environmental conditions in Ukraine, can cause significant socio-economic damage in case no measures for their prevention are taken. However, no official definition of climate change was introduced neither in the Climate Programme of Ukraine, nor in any other documents that were adopted later.

Moreover, there is no formed and unified approach to understanding the nature and characteristics of climate as an object of environmental protection even in the legal doctrine of Ukraine. In most of the sources, the term "climate" is characterized through the prism of

¹² Nataliya Malysheva, 'Novi horyzonty ekolohichnoho prava', *Modern tendencies and prospects of development of agrarian, land and environmental law* (Publishing Center of NULES of Ukraine, Kiev, 22–23 May 2015).

¹³ Mariia Krasnova, 'Stan ta Perspektyvy Rozvytku Vchennya pro Ob'yekty Ekolohichnoho Prava: Naukovo-Metodolohichni Aspekty' (2013) 2 Bulletin of Taras Shevchenko National University of Kyiv. Legal Studies 8.

¹⁴ Resolution of the Verkhovna Rada of Ukraine No 650 'On Climate Programme of Ukraine' (1997) <<https://zakon.rada.gov.ua/laws/show/757-14#Text>> accessed 26 March 2023.

the institution of general (climatic conditions) or special (climatic resources) nature. The climatic resource is also referred to in the legal category of "intangible natural resources" along with ambient air, airspace, wind energy, solar radiation, radio frequency resources, etc. They are defined as natural resources of a special kind and legal regulations for their protection and/or use are mainly in the process of their formation. Thus, climate is currently considered within the framework of the environmental law of Ukraine as a part of the legal protection of ambient air and the ozone layer.

Meanwhile, the basis of legal regulation of climate change in Ukraine has been mainly formed as a response to international climate obligations. Such obligations are posed by the ratification of the following international documents: United Nations Framework Convention on Climate Change, 1992 (hereinafter UNFCCC)¹⁵, the Kyoto Protocol, 1997¹⁶, Paris Agreement, 2015¹⁷ and Association Agreement between the European Union and Ukraine, 2014¹⁸. To ensure the implementation of these international treaties, a number of legislative and regulatory documents have been developed and approved.

From one point of view, this is quite logical, as the legal protection of climate as an international universal object is the subject of international cooperation. Ukraine has identified the issues of climate change as the priority of the State's environmental policy. In particular, by signing and ratifying the UNFCCC, Ukraine has committed to protecting the climate system for the benefit of the present and future generations, as well as to fulfill individual obligations as a Party to the Convention. Thus, as an Annex I Party¹⁹, Ukraine has committed to adopt and implement policies and measures aimed at mitigation of climate change by limiting its anthropogenic emissions of greenhouse gas emissions (hereinafter GHG) and protecting and enhancing its

¹⁵ Law of Ukraine 'On Ratification of the UN Framework Convention on Climate Change' (1996) <<https://zakon.rada.gov.ua/laws/show/435/96-bp#Text>> accessed 26 March 2021.

¹⁶ Law of Ukraine 'On the Ratification of the Kyoto Protocol to the United Nations Framework Convention on Climate Change' (2004) <<https://zakon.rada.gov.ua/laws/show/1469-19#Text>> accessed 26 March 2021.

¹⁷ Law of Ukraine 'On the Ratification of the Paris Agreement' (1996) <https://zakon.rada.gov.ua/laws/show/995_801> accessed 26 March 2021.

¹⁸ Association Agreement between the European Union and its Member States, of the one part, and Ukraine, of the other part (29 May 2014) OJ L 161.

¹⁹ United Nations Framework Convention on Climate Change (1992) 1771 UNTS 107, 165.

greenhouse gas free sinks and reservoirs, taking into consideration the real socio-economic conditions of the country. As Annex B Party to the Kyoto Protocol²⁰, Ukraine had an obligatory target until 2020 to reduce its GHG emissions levels by 20% below 1990 levels.

Furthermore, Ukraine was one of the first European countries to ratify the Paris Agreement²¹, a legally binding international treaty on climate change, which requires Ukraine (as a signatory to the Agreement) to take measures to reduce the impact on the climate, e.g., by cutting greenhouse gas (hereinafter GHG) emissions and adapting to the already existing impacts of climate change. Therefore, Ukraine has committed to its obligations under the Paris Agreement with first Intended Nationally Determined Contribution (first NDC), which sets a GHG emission target not to exceed 60% of 1990 GHG levels in 2030.²²

However, it is quite questionable that the formation of legal regulation of climate change issues solely through the implementation of international obligations can be effective without adopting a framework legal act of national law. The primary development of strategic documents (mainly aimed at meeting international obligations) within the climate state policy of Ukraine, which is not supported by a framework act of national legislation, is declarative in nature and looks a lot like political promises rather than an effective system of binding legal measures.

This statement is substantiated by the fact that despite all the efforts to reduce overall national GHG emissions through its policies and measures, Ukraine has failed to meet international commitments a number of times. In particular, in 2010 Ukraine failed to establish an initial report demonstrating compliance of its national systems with the procedures under the Kyoto Protocol.²³ In 2016, Ukraine failed to

²⁰ Kyoto Protocol to the United Nations Framework Convention on Climate Change (1998) 37 ILM 22.

²¹ Paris Agreement aims to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Conference of the Parties, Adoption of the Paris Agreement (2015) UN Doc FCCC/CP/2015/L9/Rev/1.

²² NDC Registry, 'Party: Ukraine' (www4.unfccc.int, 2016) <<https://www4.unfccc.int/sites/NDCStaging/pages/Party.aspx?party=UKR>> accessed 11 April 2023.

²³ The Compliance Committee of the Kyoto Protocol, 'Non-Compliance Procedure of Ukraine under the Kyoto Protocol - Climate Change Litigation' (*Climate Change Litigation*, 2010) <<http://climatecasechart.com/climate-change->

establish a true-up period report demonstrating compliance with the Kyoto Protocol, and apart from violating it was found that Ukraine did not retire sufficient units to cover its total GHG emissions as required under the Kyoto Protocol (not in formal compliance with Article of the Kyoto Protocol).²⁴ Additionally, recent poor performance of Ukraine in reaching its commitment under the Paris Agreement, which is rated as 'Critically insufficient' (as from 30 July 2020)²⁵, demonstrates that current policy trends lead to ineffective, inconsistent and not systematic formation of the legal regulation of climate change.

To sum up, it is reasonable to mention the statement of K. Prokhorenko that climate is a new, special object of environmental law, which meets the vital, natural environmental rights, interests and needs of the subjects, and, thereby, is subject to comprehensive protection aimed at preventing deterioration of climate balance systems.²⁶

Thus, defining the climate as a special object of law is theoretically and scientifically substantiated. This should be primarily done within the environmental law of Ukraine, e.g., by introducing the definition into existing legislative acts. In particular, Article 5 of the Law of Ukraine 'On Environmental Protection'²⁷ should be amended to include the climate in the list of objects of environmental protection. Also, a special article should be developed on the protection of the climate, as well as the prevention and mitigation of the negative effects of climate change. Additionally, the provisions of the sectoral Law of Ukraine 'On Air Protection'²⁸ should be complemented with the definition of climate, the content of its protection, and the list of basic

litigation/non-us-case/non-compliance-procedure-of-ukraine-under-the-kyoto-protocol/> accessed 11 May 2023.

²⁴ The Compliance Committee of the Kyoto Protocol, 'Non-Compliance Procedure of Ukraine under the Kyoto Protocol II - Climate Change Litigation' (*Climate Change Litigation*, 2016) <<http://climatecasechart.com/climate-change-litigation/non-us-case/non-compliance-procedure-of-ukraine-under-the-kyoto-protocol-ii/>> accessed 11 April 2023.

²⁵ Climate Action Tracker 'Ukraine | CAT' (*Climateactiontracker.org*, 2020) <<https://climateactiontracker.org/countries/ukraine/>> accessed 12 April 2021.

²⁶ Kateryna Prokhorenko, 'Climate as an Object of Legal Environmental Protection in Ukraine' (PhD thesis, Taras Shevchenko National University of Kyiv 2013).

²⁷ Law of Ukraine 'On Environmental Protection' is a framework domestic law in the field of environmental protection (amended as of 01 January 2021) <<http://zakon0.rada.gov.ua/laws/show/1264-12>> accessed 25 March 2023.

²⁸ Law of Ukraine 'On Air Protection' determines legal and organizational basis and ecological requirements in the field of protection of ambient air (amended as of 20 September 2019) <<https://zakon.rada.gov.ua/laws/show/2707-12#Text>> accessed 25 March 2023.

measures to protect the environment from adverse effects of climate change. These amendments should lay the grounds for the formation of a domestic legal framework on climate change. This will create the legal basis for developing and adopting a framework legal act in the sphere of climate change (Climate law of Ukraine), which shall be aimed at introducing legal measures to achieve net zero emissions, protect the natural environment and Ukrainian citizens from the adverse impacts of climate change.

Overall, the legal protection of climate as a natural object should involve the development and implementation of a set of measures aimed at mitigating climate change and ensuring adaptation to it, which is reflected in the relevant areas of legal regulation: reduction of anthropogenic greenhouse gas emissions, review of existing scientific and legislative approaches to standardization in this area, rational use, protection and reproduction of the quality of natural absorbers of greenhouse gases, like forests, lands, soils, vegetation, etc., and ensuring the adaptation of ecological systems and humans to the adverse impacts of climate change.

Consequently, the development of fully-fledged environmental legislation to ensure the efficient and effective legal protection of climate is of fundamental importance for Ukraine. The priority tasks are: to identify contradictions and fill gaps in the current environmental legislation, e.g., by defining climate as an object of legal protection; to improve existing national legislation on international commitments and obligations of Ukraine under international climate change framework; to develop and adopt a framework legal act (e.g. Climate Law of Ukraine) in the sphere of climate change, which shall be aimed at developing legal measures to achieve net zero greenhouse gas emissions, protect the natural environment and Ukrainian citizens from the adverse impacts of climate change.

3. ADDRESSING CLIMATE CHANGE ISSUES WITHIN STATE POLICY OF UKRAINE

Currently, climate change regulatory provisions in Ukraine are mainly based on the provisions of strategic documents. Noteworthy, following the specifics and scope of issues covered, it is suggested that climate state policy of Ukraine is conditionally divided into two areas: mitigating climate change (e.g., by reducing greenhouse gas emissions)

and adapting to climate change impacts. The fundamental strategic documents are the Strategy of the State Environmental Policy of Ukraine for the period up to 2030²⁹ and the Concept on State Climate Policy Implementation till 2030³⁰.

The Strategy of the State Environmental Policy of Ukraine for the period up to 2030 (hereinafter Environmental Strategy), is the fundamental document that defines the national priorities in the field of environmental protection. The Strategy points out that to improve the quality of the atmospheric air and to strengthen its response to the effects of climate change and to achieve the goals of sustainable low-carbon development in all sectors of the economy, Ukraine must ensure that ratified international instruments on climate change and the quality of the atmosphere are fulfilled.³¹

In general, the Strategy is aimed at the energy saving and energy efficiency, increasing the production of clean energy, introducing the best available low-carbon, resource-saving production technologies, as well as modern building technologies for heat and energy saving, which will significantly reduce the emissions of greenhouse gases and pollutants into the atmospheric air as well as the discharge of pollutants into water bodies.

It should be noted that the Strategy, as a fundamental policy act on environmental issues, is expected to define the national priorities in the sphere of climate change. Thus, it looks reasonable that it is the Strategy that must be the reference point for further development and legislative support for combating climate change on the national level. However, the Strategy does not consider climate change as a separate sphere of environmental policy, addressing it within the framework of legal protection of atmospheric air and mainly in the context of fulfilling international obligations. This is seen as a definite drawback, which results in underestimation of climate change issues on the national level, shifts strategic priorities and inhibits the development and adoption of the framework legislation in the sphere of climate change.

²⁹ Law of Ukraine ‘On the Basic Principles (Strategy) of the State Environmental Policy of Ukraine for the Period up to 2030’ (2019) (Environmental Strategy 2019) <<https://zakon.rada.gov.ua/laws/show/2697-19>> accessed 25 March 2023.

³⁰ Approved on 7 December 2016 by Resolution of the Cabinet of Ministers of Ukraine ‘On approval of the Concept on State Climate Policy Implementation till 2030’ (2016) <<https://zakon.rada.gov.ua/laws/show/932-2016-p#Text>> accessed 27 March 2023.

³¹ Environmental Strategy 2030.

The Concept on State Climate Policy Implementation till 2030 (hereinafter Climate Policy Concept)³² is the first national strategic document aimed at combating climate change by defining the grounds to develop legislation, strategies and action plans for various areas of State policy in this area. Its aim is stated as improving State policy on climate change in order to achieve sustainable development, create legal and institutional preconditions for a gradual transition to low-carbon development in terms of economic, energy and environmental security and improve the welfare of citizens. Its main areas cover the following: strengthening the institutional capacity for the development and implementation of State policy on climate change; prevention of climate change by reducing anthropogenic emissions and increasing greenhouse gas absorption to ensure the gradual transition to low-carbon development of the country; adapting to climate change, increasing the resilience and reducing the risks linked to climate change.

It is noteworthy that the Climate Policy Concept establishes the basis for the development of draft regulations, strategies and other documents required for the implementation of various components of state policy in the sphere of climate change. Thus, a number of planning and strategic instruments have been adopted, e.g., the Action Plan on the Execution of the Concept of Implementation of State Climate Change Policy until 2030 (hereinafter the Action Plan)³³, Low Emission Development Strategy (hereinafter LEDS 2050)³⁴, Energy Strategy of Ukraine until 2050 (hereinafter ESU 2050)³⁵, etc.

The Action Plan contains 49 measures aimed at preventing and adapting to climate change. Such measures include taking into account the factor of increasing the frequency and intensity of dangerous and natural hydrometeorological phenomena due to climate change in

³² Climate Policy Concept 2016.

³³ Approved on 6 December 2017 by Resolution of the Cabinet of Ministers of Ukraine ‘Action Plan on the Execution of the Concept of Implementation of State Climate Change Policy until 2030’ (2017) (Action Plan 2017) <<https://zakon.rada.gov.ua/laws/show/878-2017-p#Text>> accessed 27 March 2023.

³⁴ Approved on 18 July 2018 by Protocol Decision of the Cabinet of Ministers of Ukraine ‘Ukraine 2050 Low Emission Development Strategy’ (2018) (LEDS 2018) <https://mepr.gov.ua/files/docs/Proekt/LEDS_ua_last.pdf> accessed 27 March 2023.

³⁵ Approved on 18 September 2017 by Resolution of the Cabinet of Ministers of Ukraine ‘Energy Strategy of Ukraine until 2035 “Safety, Energy Efficiency, Competitiveness”’ (2017) <<https://zakon.rada.gov.ua/laws/show/605-2017-p#n2>> accessed 27 March 2023.

Ukraine in the process of managing the risks of man-made and natural emergencies, developing and approving a plan of measures to adapt to climate change, implementation of pilot projects for the development and implementation of local plans for adaptation to climate change at the regional level, as well as cities, towns and villages.³⁶

Special attention should be given to the LEDS 2050, which was developed and approved by the decision of the Interdepartmental Commission for Enforcement of the UN Framework Convention on Climate Change, according to which Ukraine will make efforts to achieve by 2050 the level of 31-34% of greenhouse gas emissions compared to 1990³⁷. It should be noted that LEDS determines national stakeholders' agreed vision on decoupling further economic and social growth and its social development from the growth in greenhouse gases emissions. Thus, on the one hand, LEDS is based upon the national priorities for sustainable development and current sectoral strategies, while, on the other, it determines a potential pathway for economic development with due account of the goals for the state policy on emission reduction and greenhouse gases absorption³⁸. Therefore, it is mainly seen as an instrument for public administration and shaping of climate responsible behavior of businesses and citizens. On 18 July 2018, the Government of Ukraine sent the LEDS to the Secretariat of the UNFCCC, which was later posted on the website of the Secretariat. By this, Ukraine demonstrated its commitment to combat global climate change and meet relevant non-mandatory requirements of the Paris Agreement in order to pursue the Climate Action Sustainable Development Goal. However, since then no legislative tool to implement this Strategy has been developed. Thus, LEDS was not enshrined in any of the legislative acts, and, in fact, is of a recommendatory nature only.

The updated Energy Strategy of Ukraine until 2050 is a programme document adopted by the Government of Ukraine on 21

³⁶ Action Plan 2017.

³⁷ Taking into consideration international obligations of Ukraine LEDS 2017 is aimed at supporting a global target on stabilization of greenhouse gases concentration in accordance with the scenario of global average temperature increase confinement to well below 2°C of pre-industrial level.

³⁸ FAOLEX 'FAOLEX Database: Ukraine (National Level)' (*Fao.org*, 2017) <<http://www.fao.org/faolex/results/details/en/c/LEX-FAOC181201/>> accessed 23 April 2023.

April 2023³⁹. It defines the strategic guidelines for the development of the energy sector of Ukraine, taking into account the consequences of a full-scale Russian War, reflects the goals of the European Green Deal, and is based on the principles of an integrated approach to the formation and implementation of energy policy, creating conditions for sustainable development of the Ukrainian economy.

The Strategy's key areas of focus, along with prioritising energy security and sustainability of energy systems, as well as deepening the integration of Ukraine's energy system into the pan-European market, include reducing greenhouse gas emissions, in particular through the development and implementation of the latest technologies (production and use of hydrogen, construction of small modular nuclear reactors and energy storage facilities). In terms of the climate component, the Energy Strategy 2050 is a qualitative declarative document that sets out the main goals and principles of the energy system transformation aimed at reducing greenhouse gas emissions. In particular, the Strategy sets ambitious targets for reducing hydrocarbon consumption and dependence on coal and envisages that Ukraine will achieve carbon neutrality in the energy sector by 2050. The priority role of energy efficiency defined in the Strategy demonstrates the recognition of its importance for reducing greenhouse gas emissions and increasing the sustainability of the energy system.

Thus, the updated Energy Strategy 2050 is an important step towards reducing the impact of the energy sector on climate change. However, its implementation requires specific and detailed measures, which require effective management, adequate resources, political will and cooperation of all stakeholders. It is also worth considering that the Strategy may undergo significant changes depending on the state of the energy sector at the end of the war. In particular, the ambitious targets for climate neutrality of the energy sector by 2050, as well as the fulfilment of international commitments to decarbonise the energy sector in the short and medium term, may be in question.

The development of all the above strategic documents demonstrates a strongly positive trend. However, thorough analysis of their provisions reveals the following drawbacks. Firstly, it is an exclusively declarative nature of all the strategic acts, which tend to be left on paper and never get implemented. The report of Ukrainian

³⁹ ESU 2050.

Government on yearly progress in the sphere of environmental protection (from autumn 2019 till autumn 2020) showed that it mainly consists of strategies and plans (either already developed or still in process of their development) and few legislative acts entering into force not earlier than 2021.⁴⁰ Unfortunately, this looks more like the imitation of work that can be reported to international partners rather than the real progress.

Secondly, it is the lack of integration of climate change issues into other sectoral State strategies, as climate policy is strongly interconnected with a number of areas. In this context, it is worth noting that the vast majority of the world economy relies on energy sources or production technologies that release greenhouse gases at almost every stage of production, transportation, storage, supply and disposal. Consequently, this close interaction between climate change and economic viability affects almost all aspects of the national economy. Thus, climate policy issues cover the energy sector and energy efficiency, in particular, environmental protection, utilities, agriculture and food industry, construction and urban planning in the context of adaptation to climate change, health, water, forestry and transport, land issues, waste management, etc. However, climate issues are not taken into account in the agenda of the Ministry of Economy or the Ministry of Finance. The same applies to the agricultural sector, by which the risks should be assessed, and recommendations developed on how to organize its activities in consideration of climate change impact. It is also reasonable to integrate climate issues into the public health sector. This is due to the fact that the following questions should be foreseen and regulated: how does climate change affect public health? What diseases can be spread and how the burden on the health system would increase as a result of climate change? All of these must be taken into account in order to reduce future social and economic losses. There is also a big gap in social policy of Ukraine as it does not take into account how the climate crisis is deepening social injustice among vulnerable groups.

⁴⁰ Cabinet of Ministers of Ukraine, 'Kabinet Ministriv Ukrayiny - Yevropeys'ki Kolehy Vidznachyly Prohres Ukrayiny U Sferi Zakhystu Dovkillya Ta Klimatychnij Politytsi' (*Kmu.gov.ua*, 2020) <<https://www.kmu.gov.ua/news/yevropejski-kolegi-vidznachili-progres-ukrayini-u-sferi-zahistu-dovkillya-ta-klimatichnij-politici>> accessed 11 April 2023.

This problem was also highlighted by the report of the Ukrainian side of the EU-Ukraine Civil Society Platform, which stated that the crosscutting and integral character of a climate policy is the basis of its successful implementation.⁴¹ Thus, the report substantiates that the climate policy should be implemented by taking climate change into account in all strategic documents and by coordinating climate change action taken by all central executive agencies.

Thirdly, there are no legislative acts to define State governance in the area of adaptation to climate change in Ukraine. It is worth mentioning that a draft National Plan for Adaptation to Climate Change for the period up to 2020 was developed in 2001, in pursuance of the national action plan for the implementation of the Kyoto Protocol to the UN Framework Conference on Climate Change. However, it was not adopted.

An attempt to develop regulatory act on adaptation to climate change has been repeated recently in pursuance of the updated National Security Strategy from 14 September 2020⁴², which points out that the ability to adapt the economy, livelihoods and civil protection to climate change is currently inefficient. Thus, following the goal of reducing the impact of climate change and increasing the level of environmental safety in Ukraine, the draft Strategy for Environmental Security and Climate Change Adaptation was posted on the official website of the Ministry of Environmental Protection and Natural Resources of Ukraine on 1 March 2021 for further public discussion⁴³. According to the draft, the objectives of the Strategy include, *inter alia*, creation of organizational preconditions and scientific and methodological support for the implementation of the State policy of adaptation to climate change. Meanwhile, improving the regulatory and legislative basis for

⁴¹ Taras Bebeszko and others, 'Climate Change in the Context of Paris Agreement Commitments: Challenges and Cooperation Opportunities for the EU and Ukraine' (UA CSP 2018).

⁴² Ministry of Environmental Protection and Natural Resources of Ukraine, 'Povidomlennya Pro Oprylyudnennya Proyecktu Rozporyadzhennya Kabinetu Ministriv Ukrayiny "Pro Skhvalennya Stratehiyi Ekolohichnoyi Bezpeky Ta Adaptatsiyi Do Zminy Klimatu Do 2030 Roku"' (*Mepr.gov.ua*, 2021) <<https://mepr.gov.ua/news/36922.html>> accessed 11 April 2023.

⁴³ Ministry of Environmental Protection and Natural Resources of Ukraine, 'Povidomlennya Pro Oprylyudnennya Proyecktu Rozporyadzhennya Kabinetu Ministriv Ukrayiny "Pro Skhvalennya Stratehiyi Ekolohichnoyi Bezpeky Ta Adaptatsiyi Do Zminy Klimatu Do 2030 Roku"' (*Mepr.gov.ua*, 2021) <<https://mepr.gov.ua/news/36922.html>> accessed 11 April 2023.

adaptation activities and fulfillment of relevant international obligations is identified among the priority tasks of the Strategy. However, the draft does not mention the development of a framework legal act in the sphere of climate change mitigation and adaptation, which is already seen as a weak point of the Strategy.

Considering all the above mentioned, it can be concluded that the current climate State policy of Ukraine shows the lack of coordination between the policy and the legislative and other regulatory acts in the climate change domain. Therefore, Ukraine has no officially adopted legal act that would define the goals, objectives and ways of public policies aimed at reducing emissions and increasing removals of greenhouse gases in Ukraine and adapting the country to climate change. This additionally substantiates the urgency of adopting framework legal act on the prevention of and adaptation to climate change, which was highlighted in the second part of the present article.

4. DEVELOPING CLIMATE LAW AND POLICY IN THE CONTEXT OF EUROPEAN INTEGRATION

According to the Association Agreement between European Union and its members and Ukraine (hereinafter the Association Agreement), it is assumed that Ukraine develops and strengthens cooperation with European countries, *inter alia*, in the sphere of climate change, thereby, contributing to the long-term goals of sustainable development and the green economy.⁴⁴ Therefore, ensuring the implementation of the provisions of the Association Agreement is identified as one of the main directions of State climate policy of Ukraine.⁴⁵ Climate commitments are set out in the section on economic cooperation (Chapter 6 ‘Environment’), which provides for institutional reforms in the field of environmental protection. Approximation of Ukrainian legislation to the European one is determined by the regulations and directives of Annex XXX of the Agreement. Two main spheres are identified: reducing greenhouse gas emissions and preventing the destruction of ecosystems. Thus, the areas

⁴⁴ Article 365 lists ‘development and implementation of a policy on climate change, in particular as listed in Annex XXXI to this Agreement’. Association Agreement between the European Union and its Member States, of the one part, and Ukraine, of the other part [2014] OJ L161/5.

⁴⁵ Environmental Strategy 2019.

of cooperation on climate change include the development of an action plan for mitigation of and adaptation to climate change as well as and implementation of long-term measures to reduce greenhouse gases emissions (Annex XXXI to the Agreement). In addition, the Association Agreement includes energy transition and decarbonisation policies, which should allow Ukraine to follow the path towards a low greenhouse gas emissions economy, which is the vital part of climate policy and a vector of legislation development in the sphere of climate change mitigation.

However, the results of the monitoring of the implementation of the Association Agreement for the period from 2014-2022 showed that no significant progress has been made in the area of climate change and the ozone layer. Despite the practical work on the implementation of the relevant mechanisms (in particular, the introduction of a system of monitoring, reporting and verification of greenhouse gases), the main obligation to introduce an emissions trading system ‘remains without even outlined conceptual approaches to its implementation’⁴⁶.

The above-stated issues were reflected in the Analytical Report of the European Commission on the Harmonization of Ukrainian Legislation with the EU Acquis of 1 February 2023, according to which the climate change area has an initial level of preparation, indicating that the level of harmonization with the climate acquis is low-medium, and implementation is at an early stage. In turn, the European Commission noted that the EU-Ukraine High-Level Dialogue on the implementation of the European Green Deal, launched in 2021, demonstrated a high level of interest and commitment of the Ukrainian government to the goals of the European Green transition and climate neutrality⁴⁷.

Therefore, a number of studies and overviews have paid attention to the problems of implementing international obligations that are not further embodied in the national legislation. For instance, the position paper on prospects of updating and amending the Association Agreement

⁴⁶ Ukrainian Centre for European Policy. Ukraine and the Association Agreement: Monitoring of implementation 2014 - 2022. <https://ucep.org.ua/wp-content/uploads/2023/05/final_report_aa_ucep_2023_ukr-2.pdf> accessed 8 February 2024.

⁴⁷ Commission to the European Parliament, the European Council and the Council Commission ‘Opinion on Ukraine’s Application for Membership of the European Union’ Com/2022/407 final. <<https://neighbourhood-enlargement.ec.europa.eu/system/files/2022-06/Ukraine%20Opinion%20and%20Annex.pdf>> accessed 8 February 2024.

regarding environmental and climate change spheres pointed out that implementation of EU climate change law by Ukraine, which is not a member-State of the EU, has had a set of challenges. Among them, the fact that the national legislation of Ukraine does not have a legal provision enabling a possibility for direct effect of the EU regulations in Ukraine is highlighted. Additionally, it is mentioned that neither the Association Agreement, nor other bilateral or national instruments provide for a mechanism to review transposition into national legislation and implementation of the EU secondary legislation in Ukraine.⁴⁸

On 23 June 2022, the European Council granted Ukraine the status of a candidate for EU membership. Accession to the EU is a lengthy and very complex process that requires candidate countries to transpose the entire *acquis communautaire* into their domestic law, as well as to establish administrative and legal structures responsible for its implementation. And the development of comprehensive and integrated national climate legislation through the adoption of regulations transposing the EU climate *acquis* is one of the components of this process. It is worth noting that the EU *acquis communautaire* in the field of environment and climate change totals about 1637 pieces of legislation, which include, in addition to secondary legislation (directives and regulations), EU policies, strategic and legislative documents within the framework of the European Green Deal. At the same time, such implementation should be complete, with all the requirements of directives and regulations implemented and providing for mechanisms of practical implementation, not just legislative approximation. Thus, to fulfill the conditions for EU membership, Ukraine's primary task is to implement the European Green Deal and develop policies within the Fit for 55 legislative package to achieve carbon neutrality by 2050.

The European Green Deal (hereinafter EGD) was adopted at the end of 2019, having declared that climate change is a top priority for the EU⁴⁹. EGD is a roadmap of actions aimed at transforming Europe into the world's first climate-neutral continent by 2050 with the help of building an efficient, sustainable, and competitive economy. To achieve the

⁴⁸ Resource & Analysis Center “Society and Environment”, *Updating and Amending Annexes XXX and XXXI to the Association Agreement Between the European Union and Ukraine (Environment and Climate Change)* (2019) <<https://www.rac.org.ua/uploads/content/549/files/aaupdate2019eng.pdf>> accessed 9 April 2023.

⁴⁹ Commission, ‘The European Green Deal’ (Communication) COM (2019) 640 final

ambitious goal of reducing emissions by at least 55% by 2030 compared to 1990 levels, the EGD sets the following sectoral targets: 1) clean, affordable and secure energy supply; 2) green and circular economy; 3) energy and resource efficient construction and renovation; 4) zero pollution; 5) preservation and restoration of ecosystems and biodiversity; and 6) accelerating the transition to sustainable and smart mobility.

To achieve these goals, sectoral strategies are being developed with a planning horizon of 2030 and 2050, and relevant legislation is being updated. In particular, in 2021, the European Climate Law came into force, and a package of legislative initiatives "Fit for 55 package" was adopted, aimed at bringing EU policies in the areas of climate, energy, transport, land use and taxation in line with the requirements of this Law to achieve a 55% reduction in greenhouse gas emissions by 2030 (compared to 1990 levels). By the time the EGD came into force, the EU Biodiversity Strategy 2030, the EU Forestry Strategy, the New EU Strategy on Climate Change Adaptation, strategies on soils, plastics, chemicals, Zero Pollution Action Plans, circular economy, organic production, and the EU system for emissions trading in energy, aviation, ships and land transport, the Carbon Adjustment Mechanism and the Climate Social Fund, etc. had also been adopted and/or developed.

In this regard, in order to ensure the implementation of the EGD, which envisages the transformation of all sectors of the economy to reduce greenhouse gas emissions, Ukraine must pursue a consistent not only climate policy, but also energy and economic policies, including such sectors as industry, agriculture, transport, and finance, and must clearly follow strategies and take into account the proposals of legal scholars.

As mentioned above, Ukraine's participation in the European Green Deal has been identified as one of the strategic priorities of the EU and Ukraine, but no significant progress has been made in this area so far. In particular, neither an action plan for the EGD implementation (the Roadmap for Ukraine's Climate Goals until 2030) nor draft regulations for the EGD implementation have been developed. Meanwhile, in order to implement the EGD, which provides for the transformation of all sectors of the economy to reduce greenhouse gas emissions, Ukraine must pursue consistent not only climate but also energy and economic policies, strictly adhere to strategies and take into account the suggestions of legal scholars.

In particular, sustainable finance plays a key role in achieving the EGD policy goals, ensuring that investments support a sustainable economy and will help direct public finance and private investment towards a transition to a climate-neutral and climate-resilient, resource-efficient and equitable economy as a significant step towards the next generation of sustainable development. The EU Sustainable Finance Action Plan includes, among other things, the introduction of the European Green Bonds standard and the EU Sustainable Finance Taxonomy, the alignment of which will help Ukraine mobilize public and private green finance and, among other things, may become a promising tool for raising funds for post-war recovery.

The European Emissions Trading System (EU ETS) is the foundation of the EU's climate change policy and a key instrument for cost-effective greenhouse gas emissions reduction. The EU ETS is the first and currently the largest carbon market in the world, which sets a price for carbon and targets for reducing greenhouse gas emissions. It promotes environmental development and strengthens the competitiveness of the European economy by stimulating investment in energy-saving measures, reducing energy costs and financial risks associated with rising energy prices, as well as investments in renewable energy technologies, reducing energy dependence on fossil fuel imports.

It is worth mentioning that in 2019 the European Union launched a regional initiative called EU4Climate, aiming to support the six Eastern Partnership countries (including Ukraine) to develop and implement climate-related policies based on the countries' commitments under the Paris Agreement, the Association and Partnership Agreements with the EU, the Eastern Partnership policy initiative '20 Deliverables for 2020' and the UN 2030 Agenda for Sustainable Development.⁵⁰ While the EU4Climate initiative aims to help Ukraine adopt climate change mitigation and adaptation measures to achieve greenhouse gas emission reductions and manage the effects of climate change and should include the technical support for implementing EGD⁵¹, it is currently on the stage of forming the basis

⁵⁰ 'Home Page - Eu4climate' (*EU4Climate*, 2019) <<https://eu4climate.eu>> accessed 10 April 2023.

⁵¹ EU4Climate, 'Climate Policy Development and Advancing Cooperation with the EU in Ukraine' (2021) <<https://eu4climate.eu/wp-content/uploads/countries/EU4Climate-UKRAINE.pdf>> accessed 10 May 2023.

for developing a National Adaptation Strategy for Ukraine, with no legislation to be developed and adopted yet.

One of the most important instruments for coordinating and implementing the EU's energy and climate policy is the integrated National Energy and Climate Plans (NECPs), through which Member States declare the measures they intend to take to achieve, among other things, the climate protection goals of reducing greenhouse gas emissions by up to 55% by 2030 compared to 1990 levels and achieving climate neutrality. The development of the National Energy and Climate Plan of Ukraine is an important basis for decarbonising Ukraine's energy sector, achieving climate neutrality and ensuring a green transition, which are the main principles of post-war recovery and, consequently, Ukraine's climate transformation.

The implementation of EU4Climate, CASE, and the EU LIFE Environment and Climate Action Programme, which focus on the implementation and development of environmental, climate change, and infrastructure development legislation, is essential to ensure the harmonization of Ukrainian legislation with EU climate legislation, which is particularly important for strengthening the capacity of regional and local authorities and ensuring their ability to effectively implement EU legislation.

Ukraine's inclusion in the LIFE programme, which took place on 24 June 2022, deserves special attention. LIFE is the European Union's programme dedicated exclusively to nature conservation and climate action, and aims to facilitate the transition to a sustainable economy, environmental protection and biodiversity conservation. It is expected that in the short term, the programme will help restore the environment affected by the military actions of the Russian Federation, and in the medium and long term, it will support the implementation of projects to develop and implement eco-innovative methods and approaches; promote best practices and behaviour change; support the development, monitoring and enforcement of laws similar to those in the EU, as well as plans and strategies that can facilitate the implementation of these laws.

In view of the above, it should be stated that only full implementation of EU climate legislation and policy will ensure that the conditions for Ukraine's full membership in the EU are met, which requires the implementation of the entire existing EU *acquis*

communautaire, the vast majority of which was not provided for in the Association Agreement.

5. CONCLUDING REMARKS

The absence of a legal definition of climate as an object of law slows down the process of developing and ensuring effective measures for combating climate change in Ukraine. The prevalence of declarative strategic acts and the absence of a framework legal act in this sphere demonstrates that the domestic legislative framework on climate change is underdeveloped and ineffective. This, combined with inconsistent and non-integrated climate change policy, makes it complicated, if not impossible, to ensure effective mechanisms for climate change mitigation and adaptation.

Consequently, the development of fully-fledged climate legislation is of fundamental importance for Ukraine. The author suggests that such development shall be carried out with the following steps: filling gaps in the current environmental legislation, e.g., by introducing the legal definition of the climate as an object of legal protection; improving current national legislation on international commitments and obligations of Ukraine under international climate change framework and European Green Deal, in particular; developing and adopting a framework legal act - Climate Law of Ukraine, which shall be aimed at the developing legal measures to achieve net zero emissions, protect the natural environment and Ukrainian citizens from the adverse impacts of climate change. These improvements, accompanied by ensuring integration of climate change issues into all spheres of state policy can create the grounds for Ukraine to become an economically successful and carbon-neutral State.

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Now it is the least developed world who are not responsible for this climate change phenomenon that bore the brunt of climate change consequences so it is morally and politically correct that the developed world who made this climate change be responsible by providing financial support and technological support to these people.

— Ban Ki-moon —

AZ QUOTES

The Extent of Causality and Burden of Proof for Climate Related Intangible Loss Damage in At-Risk Settlements (Fiji Islands)

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ABSTRACT

In this chapter, a plethora of social, cultural, legal and policy related remedies for harm caused by climate related loss and damage (L&D) were examined, particularly in rural and remote Fiji Islands. The meaning of loss and damage, and its relationship to climate mitigation and adaptation, was discussed. The concept of causality and attempt are considered to expose some criteria that the law uses to test causation in the hope to subject these to a much-needed discussion of climate change and causation affecting international law, domestic law, and climate science. A probabilistic event attribution (PEA) is explored having crucial implications in the development of PEA. When vulnerabilities and thresholds are known, changing risks can be calculated *ex ante* and, therefore, changing risks can be forecasted. The improvement of the methods allows geographically very specific events to be anticipated and, thus, appropriate adaptation measures can be designed. It is considered (at a conceptual level) how those harmed by loss and damage in Fiji from human-induced climate change may pursue remedies against those who have contributed to the harm. Finally, this chapter explores what that evidence needs to be (extent of causality and burden of proof) for loss and the damages to be awarded. It is concluded by highlighting the values of probabilistic event attribution (PEA), and how vulnerabilities in Fijian communities continue to be a deep concern. Further work needs to be done with respect to social, cultural, and biological interconnectivity that concretely underlines the importance of climate change and how it diminishes well-being and cultural integrity of Indigenous people by affecting endemic plant species. Disaster Risk Reduction (DRR) planning needs to be cognizant of social and cultural implications of forced migration. Causality and burden of proof within the legal context has its built-in complexities and, hence, it needs further research.

Keywords: Loss and damage; Burden of proof; Probabilistic event attribution; Vulnerabilities; Fijian communities; Climate change

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1. INTRODUCTION

The Fifth Assessment Report of Intergovernmental Panel on Climate Change (IPCC) emphasizes that climate change is one of the greatest threats to human security because it undermines livelihoods, compromises cultures and individual identity, and disrupts the ability of States to provide the conditions necessary for human security¹.

The South-West Pacific region (Figure 1) is increasingly being recognised as one of the most immediately vulnerable regions in the world to potential increases in mass migration, displacement and relocation of people due to climate change impacts^{2,3,4}. Loss and damage (or L&D) in low-lying island States in the Pacific Islands is integrated into a climate risk management framework proposed by Mechler and Schinko (2016) drawing on Nurse et al. (2014)⁵ and UNFCCC (2015)⁶. This framework has been applied to the group of SIDS (Small Island Developing States) globally (see Schinko and others, 2018)⁷. It focuses on current risk exposure and future risk scenarios where the intolerable

¹ Adger, W. N. et al., 'Human Security', in: C. B. Field et al. (eds.), *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects* (2014). Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge and New York: Cambridge University, 2014) pp.755-791

<https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-Chap12_FINAL.pdf> accessed 17 November 2023.

² Campbell, J., 'International Relocation from Pacific Island Countries: Adaptation Failure? Environment, Forced Migration & Social Vulnerability' (2008) International Conference, Bonn, Germany, 9-11 October 2008.

³ McAdam, J., 'Climate change, forced migration, and international law' (2012) Oxford Scholarship Online, May 2012.

⁴ Weir, T. and Virani, Z., 'Three linked risks for development in the Pacific Islands: climate change, disasters and conflict' (2011) 3 *Clim. Dev.*, 193–208.

⁵ Nurse, L. A. et al. (eds.), 'Small Islands', in V. R. Barros et al. (ed.) *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, 2014), pp.1613-1654.

⁶ UNFCCC, 'Report on the Structured Expert Dialogue on the 2013-2015 Review' (2015) Decision FCCC/SB/2015/INF.1 <https://www.oecd-ilibrary.org/environment/information-needs-for-the-2018-facilitative-dialogue_6b8ffada-en> accessed 25 January 2024.

⁷ Schinko, T. et al., 'The Risk and Policy Space for Loss and Damage: Integrating Notions of Distributive and Compensatory Justice with Comprehensive Climate Risk' (2018) 380 *Journal of Risk and Management*, cited in Mechler, R. et al. (eds), 'Loss and Damage from Climate Change: Concepts, Methods and Policy Options' (Springer, 2018) pp.83-110.

risk space is seen as being relevant already today and becoming even more critical in the medium to longer term (2030–2040 and 2080–2100). It is discussed how, for some Pacific-SIDS, there are already cases where communities find themselves impacted by intolerable climate-related risk, and where the risk management options suggested in the figure 1 are already being deployed. Small atoll countries, such as Kiribati and Tuvalu, have provided vivid images of the possible inundation projected for the future^{8,9}. The atoll countries have also been vocal about the plight of island nations¹⁰, in particular in the United Nations Framework Convention on Climate Change (UNFCCC) negotiations through the Alliance of Small Island States (AOSIS) commanding significant media attention¹¹.

The goal of this chapter is to conduct a brief, but thorough, integrated and critical review of several examples of loss and damage in at-risk settlements. This review will also examine some characteristics of the extent of causality and burden of proof for climate related loss and damage in the Fiji Islands.

2. METHODOLOGY

This review was carried out through the use of a qualitative scoping review in addition to an in-depth online literature search. As part of this process, a preliminary assessment of the available literature on a specific subject was carried out with the intention of determining the breadth of the literature, its most important concepts, and the areas where additional research is needed. On the topic of climate change in the South Pacific, particular literature was gathered by searching electronic databases (e.g. IPCC, NOAA, Australian Climate Change

⁸ Connell, J., 'DR16: Small Island States and Islands: Economies, Ecosystems, Change and Migration' (2011) Migration and Global Environmental Change Foresight, Government Office for Science, UK Government.

⁹ Mortreux, C. and Barnett, J., 'Climate Change, Migration and Adaptation in Funafuti, Tuvalu' (2009) 19 (1) Global Environmental Change 105-112.

¹⁰ McAdam, J., 'Climate Change, Forced Migration, and International Law' (2012) Oxford Scholarship Online, May 2012.

¹¹ Handmer, J. and Johanna Nalau, J., 'Understanding Loss and Damage in Pacific Small Island Developing States' (2019), in R. Mechler et al. (eds.), 'Loss and Damage from Climate Change, Climate Risk Management, Policy and Governance' <https://doi.org/10.1007/978-3-319-72026-5_15> .

Centre, and Climate Scale¹². An additional literature review and search of studies on loss and damage and at risks settlements in Fiji was also done. This search included pertinent literature from the USP-UniFiji and FNU Library, TEK literature searches, and the Web of Science database that focused on the extent of causality and the burden of proof. After that, the information gleaned from the literature review and the qualitative scoping review was subjected to thematic coding with the help of the Nvivo qualitative analysis software. The research covered a wide range of topics, including climate change, environmental law, loss and damage; the burden of proof; probabilistic event attribution; climate change impacts and vulnerabilities within the context of Fijian communities.



Figure 1: 20 SIDS (Pacific Islands Small Island Developing States). Adapted from: <<http://www.scidev.net/global/water/feature/ocean-science-development-sids-facts-figures.html>> (Grimms, 2014)¹³

¹² Climate Scale, 'High Resolution Climate Data for Climate Change Risk Assessments' (2023). <https://www.climatescale.com/?gclid=Cj0KCQjw_r6hBhDdARIsAMIDhV9WAoRGFXFSP6SdDfMXartfiaaZHfcTBMclImFdTOd9jq7N9ogyGokaAld3EALw_wcB> accessed 12 January 2023.

¹³ Grimms, S. 'Ocean science for development in SIDS: Facts and figures' (2014). SiDevNet. <<https://www.scidev.net/global/features/ocean-science-development-sids-facts-figures/>> accessed 12 January 2023.

The results of the review provided a comprehensive and systematic search strategy to identify all relevant literature, using an integrative or critical review approach, to evaluate, critique, and synthesize the literature on a research topic in a way that makes it possible for new theoretical frameworks and perspectives to emerge. The purpose of this review is to create initial or preliminary conceptualizations and theoretical models of developing or novel conceptual or theoretical insights. Considering that loss and damage is a developing topic, this review's objective is to make these models.

3. LOSS AND DAMAGE POLICY INSIGHTS IN THE PACIFIC ISLANDS

On the policy end, intangible loss, damages and at-risk settlements that are linked to the concepts of L&D, are complex and interrelated. Tschakert et al. (2019)¹⁴ eloquently describe this relationship as a:

“situated and socially engaged science of loss arising from climate change takes people’s lived experiences with risk and harm as its fundamental starting point. It foregrounds what losses occur, where and how, which of these losses matter most to people and why and whether or not such losses are considered acceptable and potentially reversible. However, obtaining such insight is difficult if the many things people value, across space and time, are intangible, i.e. they cannot and perhaps should not be quantified, and hence are often overlooked and omitted. This is the case, for instance, for the symbolic and affective dimensions of culture and place, such as sense of belonging, personal and collective notions of identity, and ways of knowing and making sense of the world, all of which are already undermined by climate change” (p.1).

It is often necessary for law and policy makers on both the domestic and international levels to pay attention to the key L&D and related policy insights. It is highly unlikely that L&D will be adequately equipped in their current form to respond to claims to remedy harm caused by L&D within the existing legal system that is in place in Fiji. The legal system in Fiji is intricate, and it will be difficult for it to

¹⁴ Tschakert, P. et al., 'One Thousand Ways to Experience Loss: A Systematic Analysis of Climate-Related Intangible Harm from Around the World' (2019) 55 Global Environmental Change 58-72.

develop over time in such a way that it can correctly identify appropriate claimants, appropriate respondents, appropriate remedies, and actionable wrongs. Different legal systems will make different choices on these critical issues.

According to Seck and Doelle (2019), attempts to address loss and damage (L&D) in the UN climate system effectively and provide for pathways to address associated harms have so far been unsuccessful^{15, 16}. While these initiatives are still ongoing, it is becoming increasingly obvious that it will be difficult for a wide range of international regimes and domestic legal systems to react to demands for adequate remedies for persons hurt by L&D.

It has been suggested in the literature, however, that the phrase 'loss and damage' recognizes two categories of harm:

- 1) permanent harm, or irrecoverable 'loss', such as the loss of landmass from sea level rise;
- 2) reparable or recoverable 'damage', such as shoreline damage from storms.^{17,18,19}

Other ways, the concept of L&D has been delineated is between economic and non-economic L&D, and between slow onset and extreme weather events.^{20, 21} The focus has been on harm caused by

¹⁵ Siegele, L., 'Loss and Damage (Article 8)' (2017), in D. Klein et al. (eds.), *The Paris Agreement on Climate Change: Analysis and Commentary* (Oxford University Press, Oxford, UK, 2017) 224-238.

¹⁶ Lees, E., 'Responsibility and liability for climate loss and damage after Paris' (2017) 17 (1) *Climate Policy* 59-70.

¹⁷ Climate Development and Knowledge Network (CDKN), 'Framing the loss and damage debate: A conservation starter'. International Centre for Climate Change and Development (ICCCD), Germanwatch, Munich Climate Insurance Initiative (MCII), & United Nations University – Institute for Human and Environment Security (UNU-HES) (2012). <<https://d-nb.info/1029542732/34>> accessed 23 December 2023.

¹⁸ Morrissey, J., & Oliver-Smith, A., 'Perspectives on non-economic loss & damage: Understanding values at risk from climate change'. Retrieved from Loss and Damage in Vulnerable Countries Initiative (2013). <<http://ailac.org/wp-content/uploads/2014/08/7308.pdf>> accessed 18 February 2023.

¹⁹ Nishat, A., Mukherjee, N., Roberts, E. & Hasemann A., 'A range of approaches to address loss and damage from climate change impacts in Bangladesh' (2013) <https://www.researchgate.net/profile/Erin-Roberts-2/publication/357599901_A_Range_of_Approaches_to_Address_Loss_and_Damage_from_Climate_Change_Impacts_in_Bangladesh/links/61d5b7b8da5d105e551d821f/A-Range-of-Approaches-to-Address-Loss-and-Damage-from-Climate-Change-Impacts-in-Bangladesh.pdf> accessed 18 February 2023.

²⁰ Fankhauser, S., Dietz, S., & Gradwell, P., 'Non-economic losses in the context of the UNFCCC work programme on loss and damage (policy paper)' (2014).

human-induced climate change itself. A more controversial category of harm associated with climate change not clearly falling within the definition of L&D is harm caused by response measures, including by mitigation efforts, adaptation, and geoengineering.

According to Olsen et al. (2022)²², however, a significant step in accepting losses and damages as a legitimate claim, though still contested, was the establishment of the Warsaw International Mechanism (WIM) for Loss and Damage. The (WIM), in 2014, aimed at “promoting the implementation of approaches to address loss and damage associated with the adverse effects of climate change”. More recently, political demands for compensation for loss and damages have again been raised at COP26.²³ Even if the WIM covers L&D from both extreme events and slow onset events, such as sea level rise, the funding opportunities are almost exclusively for extreme events.^{24, 25} Parker, in turn, argued that this is an important reason why attribution science has become increasingly popular in recent years²⁶. Before the WIM work process started in 2011²⁷, few scientific articles were published on attribution of extreme events to climate change but increasing rapidly from 2013 onwards. L&D in COP27 (Sharm-el-Sheikh, Egypt) was set

London, UK: Centre for Climate Change Economics and Policy – Grantham Research Institute on Climate Change and the Environment.

- ²¹ Stabinsky, D. & Hoffmaister, J.P., ‘Loss and damage: Defining slow onset events’ (2012) (Briefing Paper 3).
<https://unfccc.int/files/adaptation/cancun_adaptation_framework/loss_and_damage/application/pdf/loss_and_damage_bp3_asia_and_eastern_europe_regional_expert_meeting_slow_onset_events.pdf> accessed April 22, 2023.
- ²² Olsson, L. and others, ‘Ethics of Probabilistic Extreme Event Attribution in Climate Change Science: A Critique’ (2022) *Earths Future* 10 (3)
<<https://doi.org/10.1029/2021EF002258>>.
- ²³ Kaplan, S., ‘The U.N. climate summit will take on ‘adaptation, loss and damage’ Monday. Here’s what you need to know’ (2021) *The Washington Post*
<<https://www.washingtonpost.com/climate-environment/2021/11/07/cop26-glasgow-climate-loss-damage>> accessed 10 February 2023.
- ²⁴ Gewirtzman, J., et al., ‘Financing loss and damage: Reviewing options under the Warsaw international mechanism’ (2018) 18 (8) *Climate Policy* 1076–1086.
<<https://doi.org/10.1080/14693062.2018.1450724>>
- ²⁵ Singh, C., et al., ‘Losses and damages associated with slow-onset events: Urban drought and water insecurity in Asia’ (2021) 50 *Current Opinion in Environmental Sustainability* 72–86. <<https://doi.org/10.1016/j.cosust.2021.02.006>>.
- ²⁶ Parker, H. R., et al., ‘Implications of event attribution for loss and damage policy’ (2015) 70 (9) *Weather* 268–273. <<https://doi.org/10.1002/wea.2542>>.
- ²⁷ Schäfer, L., & Kreft, S., ‘Loss and damage: Roadmap to relevance for the Warsaw international mechanism-first version’ (2014) <www.germanwatch.org/en/8366> accessed 20 December 2023.

against a difficult geopolitical backdrop. COP27 resulted in countries delivering a package of decisions that reaffirmed their commitment to limit global temperature rise to 1.5°C above pre-industrial levels. The package also strengthened action by countries to cut greenhouse gas emissions and adapt to the inevitable impacts of climate change, as well as boosting the support of finance, technology and capacity building needed by developing countries (UNFCCC, 2022).^{28,29}

4. VULNERABILITY OF SMALL ISLAND DEVELOPING STATES AND FIJI

Fiji has extremely high exposure to tropical cyclones according to a recent World Bank report entitled, “Climate Risk Country Profile”³⁰. Fijian islands experience the direct or indirect effects of cyclones on an annual basis, including frequent occurrences of multiple strikes in one year. Cyclones usually occur during the November-April wet season, and are less common during El Niño periods. Cyclones frequently result in loss of life and cause significant economic damage, which has hindered economic growth. Particularly, Fiji is exposed to rising sea levels, floods, and landslides. Fiji is one of the world’s most vulnerable nations to climate change and climate-related disasters. Fiji has ratified the Paris Climate Agreement and submitted its Updated Nationally Determined Contribution (2020), which emphasizes the nation’s need for external support to meet the high economic costs of mitigation and adaptation. Fiji submitted its Third National Communication to the UNFCCC (TNC) in 2020³¹, extensively documenting the risks climate change presents to its communities and economy. Key vulnerabilities

²⁸ UNFCCC, ‘Creating a specific fund for loss and damage marked an important point of progress, with the issue added to the official agenda and adopted for the first time at COP27’ (2022).

²⁹ UNFCCC, ‘COP27 Reaches Breakthrough Agreement on New “Loss and Damage” Fund for Vulnerable Countries’ (2022). <<https://unfccc.int/news/cop27-reaches-breakthrough-agreement-on-new-loss-and-damage-fund-for-vulnerable-countries>> accessed 30 December 2023.

³⁰ World Bank, ‘Climate Risk Country Profile, Fiji.’ <https://climateknowledgeportal.worldbank.org/sites/default/files/country-profiles/15854-WB_Fiji%20Country%20Profile-WEB.pdf> accessed 19 December 2023.

³¹ Government of Fiji, ‘Third National Communication Report to the United Nations Framework Convention on Climate Change (2020) <https://unfccc.int/sites/default/files/resource/Fiji_TNC%20Report.pdf> accessed 30 December 2022.

include its subsistence agriculture sector, its coastal and marine resources, including coral reefs, its freshwater resources, and its land management and uses. In 2017, the Government of Fiji, World Bank Group, and the Global Facility for Disaster Reduction and Recovery (GFDRR) completed an extensive assessment of Fiji's vulnerability to climate change³².

Takamura (2020)³³ indicated that when small island states – the most affected by climate change but contributing the least thereto – eventually wish to bring a *claim for compensation* for damage caused by climate change vis-à-vis a large emitting State, several legal barriers would stand in the way of their success. The United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol lack clear rules on compensation for damage caused by climate change. These States may gain compensation by invoking State responsibility for breach of international obligations by other States, whether in treaties or customary law. However, it is not easy to claim successfully for such responsibility because of the very nature of climate change: difficulties exist in proving which part of damage caused is due exactly to climate change and is precisely attributable to the allegedly responsible state.

5. ADDRESSING LOSS AND DAMAGE AND DISASTER DISPLACEMENT IN VULNERABLE FIJI

We are on the precipice of monumental change in our climate. This resonates with Ord's (2020)³⁴ prediction/estimates that the anthropogenic risks (including risks from nuclear war, climate change, and environmental damage. Being significantly higher, these risks pose about 1 in 1,000 chance of existential catastrophe within the next 100 years³⁵. However, the odds are much higher that climate change will result in non-existential catastrophes, which could in turn make us more

³² Government of Fiji, 'Climate Vulnerability Assessment Making Fiji Climate Resilient' (2020). The World Bank Group, GFDRR.
<https://www.gfdrr.org/sites/default/files/publication/Making%20Fiji%20Climate%20Resilient%20-%20Full%20Report_0.pdf> accessed 11 December 2022.

³³ Takamura, Y., 'Climate Change and Small Island Claims in the Pacific.' *Climate Change: International Law and Global Governance* (2013).
<https://www.academia.edu/84556698/Climate_Change_and_Small_Island_Claims_in_the_Pacific> accessed 14 January 2023.

³⁴ Ord, T., 'The Precipice: Existential Risk and the Future of Humanity' (Hachette, 2020).

³⁵ Ibid 3

vulnerable to other existential risks (Ord, 2020)³⁶. At the recent COP27, L&D are of prime concern and important component of the negotiations under the UNFCCC. According to UNOPS (2022)³⁷, member States are at a pivotal moment for the definition of their commitments around the Santiago Network to coordinate and strengthen efforts to avert, minimize and address L&D in vulnerable developing countries. Discussions for the Glasgow Dialogue³⁸, established at COP26, to define relevant funding arrangements are also ongoing.

While the policy landscape continues to evolve, however, vulnerable countries and communities are already being affected by the adverse impacts of climate change. Everywhere around the world, L&D due to climate change translate into human mobility impacts, and with the displacement of millions of people from their homes. Urgent action is already needed to allow people to cope with current climate impacts and to prevent future ones – and human mobility considerations need to be a core part of these concerns and related operational efforts. The common challenges of displacement in the context of the impacts of climate change manifest in very diverse manners for different countries and communities. Hazards and risks, potential impacts, and related mobility outcomes are different across contexts, requiring diverse approaches to translate into practice the policy objectives of “averting, minimizing and addressing” L&D – especially as they relate to displacement and other population movements³⁹.

The community-based research revealed four ‘pathways to loss and damage’, or in other words, four situations in which actors in the case study sites incurred residual impacts of climate stressors, leading to deepening poverty, erosion of household living standards and health⁴⁰. The research showed that actors incur loss and damage when:

³⁶ Ibid 4

³⁷ UNOPS, ‘Platform on Disaster Displacement. Addressing Loss and Damage and Disaster Displacement in Vulnerable Countries. COP27 Side Event’ (12 November 2022, 11:30am-12:30 pm Sharm El-Sheikh, Climate Mobility Pavilion, Blue Zone) <<https://disasterdisplacement.org/news-events/>> accessed 4 January 2024.

³⁸ UNFCCC, ‘Glasgow Dialogue on Article 6 of the Paris Agreement and Supporting Mechanisms’ (2022) <<https://unfccc.int/event/glasgow-dialogue>> accessed 17 March 2023.

³⁹ Ibid 2

⁴⁰ van der Geest and others, ‘Climate change, ecosystem services and migration in the Marshall Islands: Are they related?’ (2020) 161 *Climatic Change* 109–127 <<https://link.springer.com/article/10.1007/s10584-019-02648-7>> accessed 22 April 2023.

- existing coping/adaptation measures were not enough to avoid loss and damage
- measures had costs (economic, social, cultural, health, etc.) that were not regained
- despite short-term merits, measures had negative effects in the longer term
- no measures were adopted – or possible – at all. In the past two years, the case studies in the first special issue received over a hundred citations, underscoring the demand for more empirical data and insights on the emerging topic of loss and damage.

6. NON-ECONOMIC LOSS AND DAMAGE (NELD)

Westoby et al. (2021)⁴¹ indicated that Pacific Islander worldviews, knowledge systems and cosmologies often make it difficult to separate and evaluate NELD independently, challenging the nomenclature of NELD categories developed through international mechanisms. Instead, NELD understandings are often centred on the interdependencies between losses, including the cascading flow-on effects that can occur and the nature of some losses as risk multipliers (i.e., one loss creating the risk for further losses).

Most notably, losses to biodiversity, ecosystem services and land are critically linked to, and have cascading effects on, livelihoods, knowledge, ways of life, wellbeing, and culture and heritage. It is argued that loss and damage are not always absolute, and that there are NELD that are arguably repairable. Concerning, however, is that the biodiversity loss, as a *risk multiplier*, was considered the least repairable by participants. Further, interconnectedness, biodiversity, and ecosystem protection and restoration are essential for gaining a thorough knowledge of NELD. Additionally, it needs to concentrate on measures to stop irreversible and cascading effects of climate change in the Pacific Islands, particularly in the very vulnerable Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Palau, Solomon Islands, Tonga, Tuvalu, and Vanuatu.

⁴¹ Westoby, R., and others, 'Cascading loss and loss risk multipliers amid a changing climate in the Pacific Islands' (2021) 51 (5) *AMBIO A Journal of the Human Environment* 1-8. <<https://doi.org/10.1007/s13280-021-01640-9>>.

McNamara et al. (2021a)⁴² conducted a systematic review to understand what was already known about non-economic loss and damage (NELD) (i.e., those irreducible to economic terms) in the Pacific Islands region and concluded that: “[n]on-economic loss and damage induced by climate change in the Pacific Islands region has been reported as fears of cultural loss, deterioration of vital ecosystem services, and dislocation from ancestral lands, among others”. NELD is a critical area of focus, as loss and damage research and practice have tended to prioritise identifying and addressing economic losses and damages that are easier to quantify and monetise⁴³. The same authors acknowledge that there are still limited in-depth understandings of NELD and how they can be addressed, rebuilt and worked through. This can discount certain experiences and distort or skew constructions of climate change and associated decision-making.^{44, 45, 46} The interconnected and cascading nature of loss and damage in the Pacific has emerged in other studies. Ecosystem and biodiversity losses have, for example, been observed to have inherent cascading effects on people and livelihoods.^{47, 48, 49, 50, 51}

⁴² McNamara, K.E., R. Westoby, and A. Chandra, ‘Exploring climate-driven non-economic loss and damage in the Pacific Islands’ (2021) 50 *Current Opinion in Environmental Sustainability* 1–11. <<https://doi.org/10.1016/j.cosust.2020.07.004>>.

⁴³ McNamara, K.E., and Jackson, G., ‘Loss and damage: A review of the literature and directions for future research’ (2019) 10 *Wires Climate Change* e564. <<https://doi.org/10.1002/wcc.564>>.

⁴⁴ Magee, L., Handmer, J., Neale, T., and Ladds, M., ‘Locating the intangible: Integrating a sense of place into cost estimations of natural disasters’ (2016) 77 *Geoforum* 61–72. <<https://doi.org/10.1016/j.geoforum.2016.09.018>>.

⁴⁵ McShane, K., ‘Values and harms in loss and damage’ (2017) 20 *Ethics, Policy & Environment* 129–142. <<https://doi.org/10.1080/21550085.2017.1342960>>.

⁴⁶ Thomas, A.S., et al., ‘Impact of Tropical Cyclone Winston on women mud crab fishers in Fiji’ (2019) 11 *Climate and Development* 699–709. <<https://doi.org/10.1080/17565529.2018.1547677>>.

⁴⁷ Goulding, W., Moss, P.T., and McAlpine, C.A., ‘Cascading effects of cyclones on the biodiversity of Southwest Pacific Islands’ (2016) 193 *Biological Conservation* 143–152. <<https://doi.org/10.1016/j.biocon.2015.11.022>>.

⁴⁸ Sattler, D.N., ‘Climate change and extreme weather events: the mental health impact’ (2017), in W. Leal Filho (ed.), *Climate Change Adaptation in Pacific Countries* (Springer) 73–85.

⁴⁹ Pearce, T., et al., ‘Adaptation to climate change and freshwater resources in Vusama village, Viti Levu, Fiji’ (2018) 18 *Regional Environmental Change* 501–510. <<https://doi.org/10.1007/s10113-017-1222-5>>.

⁵⁰ Thomas, A.S., et al., ‘Impact of Tropical Cyclone Winston on women mud crab fishers in Fiji’ (2019) 11 *Climate and Development* 699–709. <<https://doi.org/10.1080/17565529.2018.1547677>>.

Ca'mara-Leret et al. (2019)⁵² also talk about the impact of climate change on 'biocultural heritage', illustrating how climate change diminishes the wellbeing and cultural integrity of Indigenous peoples by affecting endemic plant species. Damage to the relationship between people and their customary lands from climate change also has severe implications for the material, cultural and social security as well as emotional and spiritual wellbeing of Pacific Islander people⁵³. In this way, NELD affects the interlinked socio-ecological system with embedded cultural, social and ecological structures, rather than affecting people and ecosystems separately. McNamara et al. (2021b)⁵⁴ argue that, in the Pacific, NELD can undermine entire socio-ecological systems, and are understood, perceived and experienced through the lens of intangible values, identity and cultural landscapes. Works by Epeli Hau'ofa⁵⁵ traversing the breadth of Oceania remind that this interconnectivity transfers to regional scales, as there is a deep connection between everything. The 'sea of islands' is a conglomeration of islands not restricted by geopolitical boundaries but connected by the sea and seafarers (Hau'ofa, 1998)⁵⁶.

7. THE PROBLEM WITHIN THE CONTEXT OF THE FIJI ISLANDS

Within the context of Fiji, what needed on the ground are more conceptual clarity and practical tools on L&D. This helps design adequate policies and practices to address loss and damage. Currently,

⁵¹ van der Geest and others, 'Climate change, ecosystem services and migration in the Marshall Islands: Are they related?' (2020) 161 *Climatic Change* 109–127 <<https://link.springer.com/article/10.1007/s10584-019-02648-7>> accessed April 22, 2023.

⁵² Ca'mara-Leret, R., et al., 'Climate change threatens New Guinea's biocultural heritage' (2019) 5 (11) *Science Advances* eaaz1455. <<https://doi.org/10.1126/sciadv.aaz1455>>.

⁵³ Campbell, J., 'Climate Change, Migration and Land in Oceania' (2019) Toda Peace Institute, Policy Brief No. 37, Tokyo, Japan.

⁵⁴ McNamara, K.E., et al., 'Understanding and responding to climate-driven non-economic loss and damage in the Pacific Islands' (2021) 33 *Climate Risk Management* 100336. <<https://www.sciencedirect.com/science/article/pii/S2212096321000656>> accessed April 22, 2023.

⁵⁵ Hau'ofa, E., 'We are the ocean: Selected works' (2008) (Honolulu: University of Hawaii Press). <<https://www.degruyter.com/document/doi/10.1515/9780824865542/html>> accessed 17 March 2023.

⁵⁶ Ibid 9

there is no agreed-upon definition of loss and damage. In the past few years, since the rise of loss and damage in the climate change negotiations, there have been two main strands of framing loss and damage. The first strand suggests that loss and damage refer to current and/or potential manifestation of climate impacts affecting negatively human and natural systems. This type of definition does not clearly distinguish between impacts and loss and damage. By contrast, the second strand emphasises that loss and damage refer to adverse effects having not been mitigated, and that are beyond adaptation. The second strand's definition is gaining prominence among scholars and practitioners. A fit-for-purpose definition could be that "loss and damage refer to adverse effects of climate-related stressors that have not been or cannot be avoided through mitigation and adaptation efforts"⁵⁷. Loss and damage are expected to occur in all countries, but vulnerable populations in vulnerable countries will be hit particularly hard⁵⁸.

8. PLATFORM FOR DISASTER DISPLACEMENT (PDD)

As reiterated by Brandom (2022)⁵⁹, the Platform on Disaster Displacement (PDD) organized an official side event in COP27 at the 2022 Global Platform for Disaster Risk Reduction entitled "Addressing Loss and Damage, Supporting the Most Vulnerable: Lessons from DRR and Climate Change Action." It was designed with a view to bridging important discussions held at the 2019 Global Platform for Disaster Displacement⁶⁰, the 26th UN Climate Change Conference of the Parties⁶¹ (COP26) and with a view to preparing for the Sendai Midterm Review at COP27⁶². Disaster Displacement is increasingly recognized as a form of loss and damage and while realities around the world show that limits to adaptation have been reached and many vulnerable communities experience loss and damage, including displacement and

⁵⁷ Zommers and others, 'Loss and Damage: The Role of Ecosystem Services' (United Nations Environment Programme, 2016).

⁵⁸ Ibid 2

⁵⁹ Brandom, H, 'GP22 Side Event | Addressing Loss and Damage, Supporting the Most Vulnerable' (2022) <<https://environmentalmigration.iom.int/iom-engagement-global-platform-disaster-risk-risk-reduction-2022>> accessed 14 December 2023.

⁶⁰ <https://disasterdisplacement.org/>

⁶¹ <https://unfccc.int/process/bodies/supreme-bodies/conference-of-the-parties-cop>

⁶² UNDRR, 'Midterm Review of the Sendai Framework' (2022) <<https://sendaiframework-mtr.undrr.org/>> accessed April 22, 2023.

planned relocation. The disaster risk reduction (DRR), climate change and humanitarian/development communities still grapple with a coherent response to the complex challenges associated with it.

9. EXTENT OF CAUSALITY AND BURDEN OF PROOF

Otto and Minnerop (2020)⁶³ valued the importance of setting the “high bar” for making causal assertions. This is normally set by the rigid application of legal standards to determine the cause of an occurrence, as well as the traditional emphasis on determining the required cause in a counterfactual investigation and a judicial need for certainty. This ‘but for’ test level has frequently been found to be overly exclusive.⁶⁴ The developing discipline of probabilistic event attribution in the context of climate change offers important information to explain previous events and predict forthcoming events connected to anthropogenic climate change⁶⁵. The same authors explain that climate science focuses on making robust statements about the role of climate change, quantifying changes in the likelihood of extreme weather events and attributing

⁶³ Otto, F and Minnerop, P, ‘Climate Change and Causation Joining Law and Climate Science on the basis of Formal Logic’ (2020) <<https://heinonline.org/HOL/LandingPage?handle=hein.journals/bufev27&div=5&id=&page=>> accessed 19 December 2023.

⁶⁴ *Fairchild v Glenhaven Funeral Services* [2002] HL 22 [40], Lord Nicholls of Birkenhead stated ‘On occasions the threshold ‘but for’ test of causal connection may be over-exclusionary. Where justice so requires, the threshold itself may be lowered. In this way the scope of a defendant’s liability may be extended.’; see also *March v Stramare (E & MH) Pty Ltd* [1991] HCA 12 (*Lluya v RWE AG*, 2 O 285/15, 15 December 2016) where Judge Dean argued that there are ‘convincing reasons precluding its adoption as a comprehensive definitive test of causation in the law of negligence’ [Grundsatz der freien Beweiswürdigung (principle of independent judicial evaluation of evidence), see Heinz Thomas and Hans Putzo, *Zivilprozeßordnung* (25th edn CH Beck 2003) before § 286 para 2; German Federal Court (BGH) 52 245, 256, *Neue Juristische Wochenschrift* 2000, 953].

⁶⁵ The author understands that climate change as defined in Article 1(2) of the Framework Convention on Climate Change (UNFCCC): ‘a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.’ The Intergovernmental Panel on Climate Change (IPCC) (the United Nations body for assessing the science related to climate change) refers in a broader sense to climate change as ‘a change in the state of the climate that can be identified by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer.’, IPCC 2018: Annex I: Glossary, in Valerie Masson-Delmotte and others (eds), *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C*.

these to greenhouse gas (GHG) emissions or even certain other emissions. For example, one study looking at the Argentina 2013-2014 heat wave found that the event was made five times more likely due to total anthropogenic emissions and attributed 37 per cent of that probabilistic increase to GHG emissions of the European Union⁶⁶. The prevailing legal system for causal analysis within the context of Fiji Islands is rather unique; however, the fundamental principle of any causal explanation in law is that mere correlation between components can be differentiated from processes that cause one thing to generate another, even though laws vary from jurisdiction to jurisdiction⁶⁷.

Causal explanations thus differ from statistical explanations, and a cause can be defined as a factor having the potential to affect an event without assuming a deterministic or probabilistic relationship between the component and the outcome⁶⁸. In contrast, the phrase is used more broadly to indicate that an event has been generated, and a component will be considered the "cause" of an event if it has at least statistically significantly increased the chance of the event's occurrence⁶⁹. Based on this definition, a "concurrent cause" is "an act, occurrence, or a state of nature that initiates or permits,... in conjunction with other causes a chain of events leading to an effect."⁷⁰

No real concrete attempt has been made in the Pacific Islands with respect to analysis of causality or burden of proof. Zommers et al. (2016)⁷¹ reiterated the connection between L&D and ecosystem services, which states:

"Loss and damage refers to the adverse effects of climate-related stressors on natural and human systems that cannot be, or have not

⁶⁶ Otto, F and others, 'Assigning historic responsibility for extreme weather events' (2017) 7 Nature Climate Change 757.

⁶⁷ Strevens, M, 'Depth: an Account of Scientific Explanation' (2008) 6. Wesley C Salmon, 'Statistical explanation' in Robert G Colodny (ed.), *The Nature and Function of Scientific Theories* (University of Pittsburgh Press 1970) 173.

⁶⁸ Sosa, E, 'Varieties of Causation', in Ernest Sosa and Michael Tooley (eds.), *Causation* (OUP 1993) 234.

⁶⁹ Strevens, M, 'Depth: an Account of Scientific Explanation' (2008) 6.

⁷⁰ Rothman, K.J, 'Causes' (2018) 201 American Journal of Epidemiology 587, 588. The term concurrent cause is thus used here in line with judgment in the case *Certain Activities carried out by Nicaragua in the Border Area* (Costa Rica v. Nicaragua) General List No. 150 [34], [41], Judgment of 2nd February 2018, where the ICJ for the first time in its history adjudicated compensation for environmental damage.

⁷¹ Zommers, Z, Harrison, PA, Berry, P, Soussan, J, and Smith, J, 'Loss and Damage: The Role of Ecosystem Services' (United Nations Environment Programme 2016).

been, avoided through mitigation or managed through adaptation efforts. To date, studies of loss and damage have focused primarily on human systems and tended to overlook the mediating role of ecosystems and the services ecosystems provide to society. This results in a serious knowledge gap. Climate-induced loss and damage to human systems may result from permanent or temporary effects of climatic stressors on ecosystems and the services they provide. More information is needed. Indeed, the Paris Agreement urges Parties to enhance understanding, action and support in areas such as, "Resilience of communities, livelihoods and ecosystems" (p.3).

There still seems to be some disconnect between L&D, ecosystem services and causal links (causality) with respect to climate litigation.

10. FINDING THE CAUSAL LINK IN CLIMATE LITIGATION

Minnerop and Otto (2020)⁷² emphasized that climate change litigation faces many obstacles, often revolving around procedural questions of standing⁷³ and jurisdiction⁷⁴ but also as a consequence of applying criteria of established legal concepts - such as causation - to a new challenge.⁷⁵ This is neatly illustrated in the decision of the District

⁷² Otto F and Minnerop, 'Climate Change and Causation Joining Law and Climate Science on the basis of Formal Logic' (2020)

<<https://digitalcommons.law.buffalo.edu/belj/vol27/iss1/2/>> accessed April 22, 2023.

⁷³ Case T-330/18, *Carvalho v. Parliament*, 2019 E.C.R. 324, 54 (reasoning that the applicants were not individually concerned).

⁷⁴ *Am. Elec. Power Co. v. Conn.*, 564 U.S. 410 (2011); *Native Vill. of Kivalina v. ExxonMobil Corp.*, 696 F.3d 849, 858 (9th Cir. 2012), cert. denied, 569 U.S. 1000 (2013); *Comer v. Murphy Oil USA*, 607 F.3d 1049 (5th Cir. 2010); Bundesverwaltungsgericht Nov. 27, 2018, A-2992/2017; Jacqueline Peel, *Issues in Climate Change Litigation*, 1 *Climate Change L. Rev.* 15, 16 (2011).

⁷⁵ See Geetanjali Ganguly et al., 'If at First You Don't Succeed: Suing Corporations for Climate Change' (2018) 38 *Oxford J. Legal Stud.* 841; Jacqueline Peel & Jolene Lin, 'Transnational Climate Litigation: The Contribution of the Global South' (2019) 113 *Am. Soc'y Int'l L.* 679; Sophie Marjanac & Lindene Patton, 'Extreme Weather Event Attribution Science and Climate Change Litigation: An Essential Step in the Causal Chain?' (2018) 36 *J. Energy & Nat. Resources L.* 265; Jacqueline Peel et al., 'Shaping the 'Next Generation' of Climate Change Litigation in Australia' (2017) 41 *Melb. U.L. Rev.* 793; Jacqueline Peel & Hari M. Osofsky, 'Climate Change Litigation's Regulatory Pathways: A Comparative Analysis of the United States and Australia' (2013) 35 *L. & Pol'y* 150; Jolene Lin, 'Climate Change and the Courts' (2012) 32 *Legal Stud.* 35; Brian J. Preston, 'Climate Change in the Courts' (2010) 36 *Monash U. L. Rev.* 15.

Court of Essen in the case *Lluyia v. RWE*⁷⁶. The claimant, a Peruvian farmer living in the Andes, asserts that his home and livelihood are threatened by the risk of flooding from a glacial lake outburst. The glacial lake, Palcacocha, is damming glacial melt-water. The water is held by a natural moraine (deposit of irregular mass of debris from a glacier) and controlled by a set of basic pipes to reduce pressure. He claims from the German Energy provider, RWE AG, a pro rata financial contribution to flood protection measures in proportion to the company's GHG emissions on the basis of Art. 1004 of the German Civil Code (BGB).⁷⁷

The calculation of the compensation is derived from the report on the quantified contribution of “carbon majors” to cumulative global GHG emissions⁷⁸. The report states that the company contributed 0.47 per cent to the global total.⁷⁹ The Essen court held that RWE would not qualify as a disturber of the claimant's property in the absence of equivalent and adequate causation.⁸⁰ Applying the strict “*condition sine qua non*” test of causation, the court was not satisfied that the contribution of RWE could be considered to be significant given the existence of multiple other pollutants, despite acknowledging that the company was a major emitter. However, “in the light of the millions and billions of emitters worldwide” the court was unable to conclude that anthropogenic climate change, and

⁷⁶ *Urgenda Foundation v The State of the Netherlands* C/09/456689/HA ZA 13-1396 (24 June 2015) ECLI:NL:RBDHA:2015:7196. (unofficial English translation, only the Dutch text of the ruling is authoritative, ECLI:NL:RBDHA:2015: 7145) [4.90]; *The State of the Netherlands v Urgenda Foundation* 200.178. 245/01 (9 Oct. 2018) ECLI:NL: GHDHA:2018:2610 (unofficial English translation).

⁷⁷ The provision does not require that the property is located in Germany. Further, even a party that acts lawfully may be held liable for damage caused, a legal principle that underlies Bürgerliches Gesetzbuch [BGB] [Civil Code], § 1004 but also (as noted by the Hamm court) Gesetz zum Schutz vor schädlichen Umwelteinwirkungen durch Luftverunreinigungen, Geräusche, Erschütterungen und ähnliche Vorgänge [BImSchG] [Federal Emission Control Act] § 14(a).

⁷⁸ See Richard Heede, ‘Tracing Anthropogenic Carbon Dioxide and Methane Emissions to Fossil Fuel and Cement Producers, 1854-2010’ (2013) 122 *Climatic Change* 229 (presenting a ground-breaking quantitative analysis of the historic fossil fuel and cement production records of fifty leading investor-owned, thirty-one state-owned and nine nation-state producers of oil, natural gas coal, and cement, and finding He that ninety of these ‘carbon major’ entities are responsible for nearly two-thirds of historic carbon dioxide and methane emissions).

⁷⁹ See Heede, *supra* note 8.

⁸⁰ In German civil law, equivalent causation is the first step of the test, and the theory of adequate causation functions as a normative corrective. The theory of adequate causation is used to eliminate unlikely factors from the causal chain; See also Palandt, *supra* note 42, at § 249.

consequently the purported flood risks of the glacial lake, would not occur without RWE's emissions.

11. PROBABILISTIC EVENT ATTRIBUTION (PEA)

Within the realms of what we know about the science of climate change, a safe conjecture is that this is a relatively new area of detection and attribution: probabilistic event attribution or “PEA”. This discipline has been made possible by the growing accessibility of huge ensembles of climate models. One of the major goals of this brief desktop study is to determine whether and to what extent anthropogenic climate change has changed the likelihood and severity of a specific extreme weather event to occur, despite variances in technique⁸¹. “In essence, a climate model is used to simulate global mean temperature with and without anthropogenic GHG emissions finding that without these emissions the observed increase (1°C today⁸²) cannot be simulated. While traditional detection and attribution methods yield significant results only when trends are very strong, changes in the probabilities of extreme events are subtler and could thus not be attributed to global GHG emissions at the time of Hasselmann when climate models were extremely costly to run”⁸³.

Using climate modelling and statistical modelling, scientists estimate the probability of an event to occur with climate change (P1) and in a counterfactual climate of a world without anthropogenic GHG emissions (P0), thus causally linking the occurrence probability of severe weather events to external drivers of the climate system⁸⁴. On that basis, it is then possible to quantitatively determine even the contribution of individual countries to the changing likelihood of certain extreme weather events as a result of these countries’ emissions (Otto

⁸¹ Mann, M.M., Lloyd, E.A and Naomi Oreskes, ‘Assessing climate change impacts on extreme weather events: the case for an alternative (Bayesian) approach’ (2017) 144 *Philosophy of Science* 131.

⁸² Hausteine, K., Allen, M.R., Forster, P.M. and others, ‘A real-time Global Warming Index’ (2017) 7 *Sci. Rep.* 15417 <<https://doi.org/10.1038/s41598-017-14828-5>> accessed April 22, 2023.

⁸³ Ibid

⁸⁴ Hannart, A and others, ‘Causal counterfactual theory for the attribution of weather and climate related event’ (2016) 99 *Bulletin of the American Meteorological Society* on the use of the Bayes’ theorem in science, see Pearl (n49) 14f; Perry (n 4) 320f.

et al., 2017).⁸⁵ Results of event attribution studies are expressed in risk ratios (RR), describing the change in occurrence frequency of the event caused by anthropogenic climate change. $RR = P1/P0$. Risk ratios are given with confidence intervals representing sampling and methodological uncertainties⁸⁶. The causal statement, thus, entails the identification of a cause, such as increasing emissions, and represents a causal quantity in the shape of the attributable risks⁸⁷. The design and framing of the attribution study is essential for the interpretation and any further use of results that it delivers.⁸⁸

12. CONCLUSIONS

The present analysis is a synthesis of L&D's meaning, causality concepts, discussion of climate change and causation and probabilistic event attribution (PEA). This has implications within anthropogenic climate change and has changed the likelihood and severity of specific extreme weather events, despite variances in technique, as illustrated by Mann et al., 2017⁸⁹. However, the remains as yet quantification of this estimate of probability of an event to occur with climate change and the counterfactual climate of the world without anthropogenic GH emissions, thus causally linking the occurrence probability of severe weather events to external drivers of the climate system. This is yet to be fully quantified and to some extent qualified, adding cultural and social indicators that provide a more rounded approach to PEA.

Within the Fijian context, vulnerabilities are well known to local communities. Therefore, when vulnerabilities and thresholds are known, changing risks can be calculated beforehand, and, therefore, be forecasted. The only caveat is that there needs to be clear

⁸⁵ Otto F and others, 'Assigning historic responsibility for extreme weather events' (2017) 7 *Nature Climate Change* 757.

⁸⁶ Otto, F.E.L., Philip, S., Kew, S., et al., 'Attributing high-impact extreme events across timescales — a case study of four different types of events' (2018) 149 *Climatic Change* 399–412. <<https://doi.org/10.1007/s10584-018-2258-3> > accessed April 22, 2023.

⁸⁷ Pearl, J., 'Causes of Effects and Effects of Causes' (2009) 44 (1) *Sociological Methods & Research* 149.

⁸⁸ Friederike EL Otto and others, 'Attribution of extreme weather events in Africa: A preliminary exploration of the science and policy implications' (2015) 132 *Climatic Change* 531.

⁸⁹ Mann, M.M., Lloyd, E.A and Naomi Oreskes, 'Assessing climate change impacts on extreme weather events: the case for an alternative (Bayesian) approach' (2017) 144 *Sociological Methods & Research* 131.

methodological approaches on how local climate related specific events are anticipated and, thus, appropriate climate change adaptation measures designed and implemented.

NELD seems to be an approach that is been tried and tested in the Pacific, however, as McNamara and Jackson point out, there was still limited in-depth understanding of NELD. More work needs to be done with respect to social, cultural and biological interconnectivity, which concretely underlines the importance of climate change and how it diminishes well-being and cultural integrity of Indigenous people by affecting endemic plant species, for example. Further work needs to be done to define how NELD affects the interlinked social cultural system within embedded cultural, social, and ecological landscapes of tradition.

PDD (Platform for Disaster Displacement), as illustrated, is a form of loss and damage, however, it's limited to adaptation and as many vulnerable communities in Fiji, for example, experience loss and damage often times. This includes displacement and planned relocation or migration (fourth migration) in two other islands because there is no potable water, food or basic resources for families to survive (e.g., Kiribati's and Fiji's attempt to move or relocate families to one of the Fijian Islands). Disaster Risk Reduction (DRR) needs to be cognizant of social and cultural implications of fourth migration; yet to be inclusive to provide more coherent responses to a complex challenge.

Finally, causality and burden of proof within the legal context is much more complicated. There remains a significant knowledge gap between climate-induced loss and damage to human systems, because of climate stressors on ecosystems and services they provide. More significant research needs to be completed on causal links in climate litigation and how specific criteria can be established to strengthen legal concepts such as causation, to just compensation for cumulative global GH emissions. Therefore, much-needed local research needs to be done to address these important issues within the Fijian cultural context. These examples can be extrapolated and used as models for other SIDS (Small-Island Developing States).

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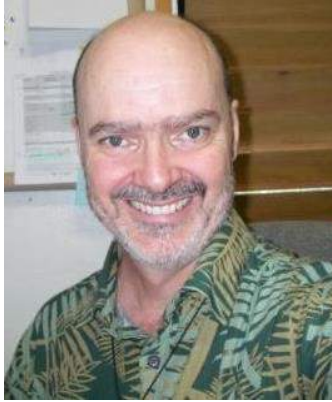
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Using Clean Energy for Sustainable Development in Vietnam: Facts and Solutions

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ABSTRACT

Using clean energy is a recent trend around the world. It is a good way to protect the environment and implement the Sustainable Development Goals of the United Nations. Following that trend, in recent years, the Vietnam government has enacted many legal policies and regulations to encourage everybody to use clean energy to live and develop economics. This chapter analyzed the facts and problems of using clean energy as well as law and regulation in Vietnam, in comparison with other countries around the world. Then, some solutions to improve the problems related to using clean energy in Vietnam for the next period are recommended. Methodologies such as analysis of Vietnam's legal policy and documents (law and regulations) related to energy activities were used. The hypotheses developed during the study shows how to use law and regulation to govern energy activities in Vietnam.

Keywords: Clean energy; Law and regulation; Sustainable development; Vietnam

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1. INTRODUCTION

The 2030 Agenda for Sustainable Development, adopted by United Nations in 2015, provides a shared blueprint for peace and prosperity for people and the planet. At its heart are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries - developed and developing - in a global partnership. They called for improving health and education, reducing inequality, and spurring economic growth together with tackling climate change and working to preserve our oceans and forests. The 7th Sustainable Development Goal is to ensure access to affordable, reliable, sustainable, and modern energy for all.

Vietnam is in the process of industrialization and modernization. Therefore, ensuring the demand for energy for rapid and sustainable economic development, maintaining national defense, political security, social order, and safety, and constantly improving people's living are particularly important. Over the years, Vietnam has had many policies to invest in and support the energy industry in many aspects. The Politburo of Vietnam has issued Conclusion No. 26-KL/TW in 2003¹ on the Strategy and Planning for the Development of Vietnam's Electricity Industry, and Resolution No. 18-NQ/TW in 2007² on the orientation of Vietnam's National Energy Development Strategy to 2020 with Vision to 2045. In response to the participation of the political system, the business community, and society, in recent years, the country's energy industry, in general, and the electricity industry, in particular, have made rapid and relatively faster developments. Ministries in all sub-sectors and fields have closely followed the orientation and achieved many specific goals set out in response to the socio-economic development requirements of the 2021-2030 periods. Based on this Resolution, the National Assembly will study, amend, and supplement the law to create favourable conditions for national energy development. Resolution 55NQ/TH³ is highly appreciated by

¹ <<https://en.vietnamplus.vn/politburo-issues-conclusion-on-overseas-vietnamese-affairs/206760.vnp>> accessed 21 January 2022.

² <<https://policy.asiapacificenergy.org/sites/default/files/No-%201855%3AQD-TTg.pdf>> accessed 15 January 2024.

³ Resolution No 55NQ/TW on the orientation of the National Energy Development Strategy of Vietnam to 2030 <<https://climate-laws.org/geographies/vietnam/policies/resolution-no-55nq-tw-on-the-orientation-of-the-national-energy-development-strategy-of-vietnam-to->

ministries, institutions, local bodies, the business community, investors, and domestic and international experts. The good implementation of this Resolution is expected to create breakthrough developments for Vietnam's energy industry in the next decades.

1.1 Sustainable Development Goals of the United Nation

The Sustainable Development Goals (SDGs), also known as the Global Goals, were adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity⁴. The 17 SDGs are integrated recognizing that the action in one area will affect outcomes in other areas and that development must balance social, economic, and environmental sustainability. The creativity, know-how, technology, and financial resources from all of society are necessary to achieve the SDGs in every context.

Climate change is a real and undeniable threat to our entire civilization. The effects are already visible and will be catastrophic unless we act now.⁵ Through education, innovation, and adherence to our climate commitments, we can make the necessary changes to protect the planet. These changes also provide huge opportunities to modernize our infrastructure, which will create new jobs and promote greater prosperity across the globe. Renewable energy solutions are becoming cheaper, more reliable, and more efficient every day. Our current reliance on fossil fuels is unsustainable and harmful to the planet, which is why we have to change the way we produce and consume energy. Implementing these new energy solutions as fast as possible is essential to counter climate change, one of the biggest threats to our survival. To ensure access to sustainable energy, we all have to take action. The relevant Goals envision the following⁶:

- i. Universal access to modern energy. By 2030, ensure universal access to affordable, reliable, and modern energy

2030#:~:text=This%20resolution%20reviews%20the%20National,structure%20of%20the%20energy%20sector> accessed on 13 January 2024.

⁴ <<https://www.un.org/development/desa/disabilities/envision2030.html>> accessed 3 April 2022.

⁵ Henry K.H. Wang, *Climate Change and Clean Energy Management* (Routledge, 1st edition, 2019), p.192.

⁶ <<https://www.un.org/development/desa/disabilities/envision2030-goal7.html>> accessed 3 April 2023.

- services. Increase the global percentage of renewable energy. By 2030, increase substantially the share of renewable energy in the global energy mix.
- ii. Double the improvement in energy efficiency. By 2030, double the global rate of improvement in energy efficiency.
 - iii. Promote access to research, technology, and investments in clean energy. By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency, and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology.
 - iv. Expand and upgrade energy services for developing countries. By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular, least developed countries, small island developing States, and landlocked developing countries, following their respective programs of support.

1.2 Paris Convention 2015 on Climate change

At COP 21 in Paris, on 12 December 2015, Parties to the UNFCCC reached a landmark agreement to combat climate change and to accelerate and intensify the actions and investments needed for a sustainable low carbon future⁷. The Paris Agreement builds upon the Convention and – for the first time – brings all nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effects, with enhanced support to assist developing countries to do so. As such, it charts a new course in the global climate effort.

The Paris Agreement's central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Additionally, the agreement aims to increase the ability of countries to deal with the impacts of climate change, and at making finance flows consistent with low greenhouse

⁷ <<https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>> accessed 3 April 2023.

gases (GHG) emissions and climate-resilient pathways. To reach these ambitious goals, appropriate mobilization and provision of financial resources, a new technology framework, and enhanced capacity-building is to be put in place, thus supporting action by developing countries and the most vulnerable countries, in line with their national objectives. The Agreement also provides for an enhanced transparency framework for action and support.

The Paris Agreement requires all Parties to put forward their best efforts through “nationally determined contributions” (NDCs) and to strengthen these efforts in the years ahead. This includes requirements that all Parties report regularly on their emissions and their implementation efforts. There will also be a global stock-take every 5 years to assess the collective progress towards achieving the purpose of the agreement and to inform further individual actions by Parties.

The Paris Agreement opened for signature on 22 April 2016 – the Earth Day – at UN Headquarters in New York. It entered into force on 4 November 2016, 30 days after the so-called “double threshold”⁸ had been met. Since then, more countries have ratified and continue to ratify the Agreement, reaching a total of 125 Parties in early 2017.

To make the Paris Agreement fully operational, a work program was launched in Paris to develop modalities, procedures, and guidelines on a broad array of issues. Since 2016, Parties work together in the subsidiary bodies (e.g., SBSTTA⁹, and SBI¹⁰) and various constituted bodies¹¹. The Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA) met for the first time in conjunction with COP22 in Marrakesh¹² and adopted its first two decisions. The work program is expected to be completed by 2018.

The Paris Agreement, adopted through Decision 1/CP.21, addresses crucial areas necessary to combat climate change. Some of the key aspects of the Agreement are set out below:

⁸ Ratification by 55 countries that account for at least 55% of global emissions
⁹ <<https://unfccc.int/process/bodies/subsidiary-bodies/sbsta>> accessed 3 April 2023.

¹⁰ <<https://unfccc.int/process/bodies/subsidiary-bodies/sbi>> accessed 3 April 2023.

¹¹ <<https://unfccc.int/process-and-meetings/bodies/the-big-picture/what-are-governing-process-management-subsidiary-constituted-and-concluded-bodies#:~:text=Subsidiary%20bodies,-Subsidiary%20Body%20for&text=The%20SBSTA%20assists%20the%20governi ng,Protocol%20and%20the%20Paris%20Agreement>> accessed 3 April 2023.

¹² <<https://www.un.org/sustainabledevelopment/cop22/>> accessed 12 April 2023.

- i. Long-term temperature goal¹³, in seeking to strengthen the global response to climate change, reaffirms the goal of limiting global temperature increase to well below 2 degrees Celsius while pursuing efforts to limit the increase to 1.5 degrees.
- ii. Global peaking and 'climate neutrality'. To achieve this temperature goal, Parties aim to reach global peaking of greenhouse gas emissions (GHGs) as soon as possible, recognizing¹⁴ peaking will take longer for developing countries Parties, to achieve a balance between anthropogenic emissions by sources and removals by sinks of GHGs in the second half of the century.
- iii. Voluntary cooperation/market- and non-market-based approaches¹⁵ recognizes the possibility of voluntary cooperation among Parties to allow for higher ambition and sets out principles – including environmental integrity, transparency, and robust accounting – for any cooperation that involves internationally transferal of mitigation outcomes. It establishes a mechanism to contribute to the mitigation of GHG emissions and support sustainable development and defines a framework for non-market approaches to sustainable development.
- iv. Establish a global goal of adaptation of enhancing adaptive capacity, strengthening resilience, and reducing vulnerability to climate change in the context of the temperature goal of the Agreement.¹⁶ It aims to significantly strengthen national adaptation efforts, including through support and international cooperation. It recognizes that adaptation is a global challenge faced by all. All Parties should engage in adaptation, including by formulating and implementing National Adaptation Plans, and should submit and periodically update an adaptation communication describing their priorities, needs, plans, and actions. The adaptation efforts of developing countries should be recognized.

¹⁴ Art. 4 The Paris Agreement 2015.

¹⁵ Art. 6 – The Paris Agreement 2015.

¹⁶ Adaptation (Art. 7) – The Paris Agreement 2015.

- v. The importance of averting, minimizing, and addressing loss and damage associated with the adverse effects of climate change, including extreme weather events and slow onset events, and the role of sustainable development in reducing the risk of loss and damage. Parties are to enhance understanding, action, and support, including through the Warsaw International Mechanism, on a cooperative and facilitative basis concerning loss and damage associated with the adverse effects of climate change.¹⁷
- vi. Finance, technology, and capacity-building support¹⁸ reaffirms the obligations of developed countries to support the efforts of developing country Parties to build clean, climate-resilient futures, while for the first time encouraging voluntary contributions by other Parties. The provision of resources should also aim to achieve a balance between adaptation and mitigation. In addition to reporting on finance already provided, developed country Parties commit to submit indicative information on future support every 2 years, including projected levels of public finance. Climate change education, training as well as public awareness, participation, and access to information are also to be enhanced under the Agreement¹⁹.
- vii. A “global stock-take”, to take place in 2023 and every 5 years thereafter, will assess collective progress toward achieving the purpose of the Agreement in a comprehensive and facilitative manner.²⁰ It will be based on the best available science and its long-term global goal. Its outcome will inform Parties in updating and enhancing their actions and support and enhancing international cooperation on climate action.
- viii. Decision 1/CP.21 also sets out several measures to enhance action before 2020, including strengthening the technical examination process, enhancing of provision of urgent finance, technology, and support, and measures to strengthen high-level engagement. For 2018 a facilitative

¹⁷ Loss and damage (Art. 8) – The Paris Agreement 2015.

¹⁸ Art. 9, 10, and 11 – The Paris Agreement 2015.

¹⁹ Art 12 The Paris Agreement.

²⁰ Global Stock-take (Art. 14).

dialogue is envisaged to take stock of collective progress towards the long-term emission reduction goal of Art 4. The decision also welcomes the efforts of all non-Party stakeholders to address and respond to climate change, including those of civil society, the private sector, financial institutions, cities, and other subnational authorities. These stakeholders are invited to scale up their efforts and showcase them via the Non-State Actor Zone for Climate Action platform (<http://climateaction.unfccc.int>). Parties also recognized the need to strengthen the knowledge, technologies, practices, and efforts of local communities and indigenous peoples, as well as the important role of providing incentives through tools such as domestic policies and carbon pricing.

1.3 Some Research Related to Clean Energy

Renewable energy is encouraged to exploit and maximize its capacity and reach its limit in the next few decades. Countries around the world have been using renewable energy as significant solutions for meeting energy needs economically, ensuring energy security and sustainable development²¹. The capacity and use of renewable energy on a global scale have increased at a faster rate than expected, especially in the electricity generation sector.²² The trend of renewable energy development in recent years has created turning points in the development of the global energy system. The rapid growth of renewable energy demonstrates the commitment of Governments around the world. More than 170 countries have set renewable energy targets, and nearly 150 countries have issued preferential policies for renewable energy development. The private sector also plays an important role in the development of renewable energy on a global scale. This signals a growing consensus that renewable energy technologies will be the engine for sustained growth and economic development.

²¹ Liu Zhenmin, 'View from the pandemic: stark realities, critical choices' (2021) The Sustainable Development Goals Report 2021 United Nations, New York.

²² Upendra J. Chivukula, 'Clean Energy Slows Climate Change: Chapter 34' (2021) World Scientific Encyclopedia of *Climate Change*, pp. 305-311 <https://www.worldscientific.com/doi/10.1142/9789811213960_0034> accessed 13 March 2023.

The cost of electricity generation from renewable energy has decreased significantly since 2010 with the decreasing trend of renewable energy equipment. Led by a trend of 81% decrease in the value of solar power equipment along with other cost reductions, the cost of residential electricity (LCOE) of solar power has decreased by 73% between 2010 and 2017, to 10 USC/ kWh. In some countries, solar power has been able to compete directly with traditional power sources without financial support. Offshore wind power and concentrated solar power also saw a significant decrease during this period with LCOEs of 14 Usc/kWh and 22 USC/kWh, respectively. Bidding results for the two years, i.e., 2016-2017, show a further reduction for these two types of renewable energy by 2020.²³

The main factors leading to the reduction in electricity costs of renewable energy include improved technology, competitive bidding, and accumulated experience at a large scale with international project developers. The results collected by International Renewable Energy Agency (IRENA)²⁴ for competitive bidding for renewable power project development through 2022 suggest that the reduction in LCOE will continue to be sustained. IRENA also predicts that, by 2020, the cost of renewable electricity will be in the range of fossil fuel power sources. With an increasing amount of accumulated capacity in regions and countries, renewable electricity development costs will continue to maintain their current downward momentum. Building on this momentum, renewable energy is well-positioned to play a central role in the implementation of international agreements on climate change and sustainable development goals. The results collected by International Renewable Energy Agency (IRENA)²⁵ for competitive bidding for renewable power project development through 2022 suggest that the reduction in LCOE will continue to be sustained. IRENA also predicts that, by 2020, the cost of renewable electricity will be in the range of fossil fuel power sources. With an increasing amount of accumulated capacity in regions and countries, renewable electricity

²³ Central Economics Committee of Vietnam, 'Resolution of the Politburo on Orientation of the Viet Nam's National Energy Development Strategy to 2030 and Outlook to 2045' (11 February 2020) Communist Party of Vietnam, Ref. 55 NQ/TW <<http://vepg.vn/wp-content/uploads/2020/03/CPCs-Resolution-55.NQ-TW-on-Energy-Development-Strategy-to-2030-and-outlook-to-2045.pdf>> accessed 11 March 2023.

²⁴ <<https://www.irena.org/>> accessed 20 February 2024.

²⁵ Ibid.

development costs will continue to maintain their current downward momentum. Building on this momentum, renewable energy is well-positioned to play a central role in the implementation of international agreements on climate change and sustainable development goals. Doubling the share of renewable energy to 36% by 2030 is technically and economically feasible.²⁶

Accelerating the implementation of energy turning points and developing renewable energy beyond electricity generation can have economic, social, and environmental benefits. Achieving the share of renewable energy by 2030 contributes to an increase in global economic output of 1.3 trillion USD compared to conventional projects.²⁷ It also contributes to the creation of millions of jobs and significantly reduces the health hazards caused by air pollution. One of the biggest benefits is also creating opportunities for the 1 billion people who do not have access to electric power and the nearly 3 billion people who depend on traditional biomass for cooking. According to the 2018 report of IRENA, to achieve the goal of reducing greenhouse gases under the plan to promote renewable energy, the world needs an investment of 16,000 billion USD by 2050²⁸ in which, renewable energy is mainly onshore wind power 33%, solar power 43%. This is followed by an increased share of renewable electricity, increased investments in energy storage, power transmission, and distribution capacity, flexible power sources, and load regulation. The additional investments help the system to integrate 62% of the power load from wind and solar while ensuring an adequate, stable, and reliable power supply. In the period to 2050, solar power will increase from 233 GW to 7122 GW, wind power from 411 GW to 5445 GW, concentrated solar power from 5 GW to 633 GW, biomass power from 119 GW to 384 GW, geothermal power from 10GW to 227 GW, other forms of renewable energy (tidal, wave, etc.) from 0.3 GW to 881 GW. Thus, wind power and solar power will be the main forms of renewable energy to meet electricity demand in the future. At this rate of growth, electricity from renewable energy will contribute to 85% of total electricity production by 2050 compared to 24% in 2015.²⁹

²⁶ Ibid

²⁷ Ibid, *supra* note 23.

²⁸ Ibid

²⁹ Ibid

2. CLEAN ENERGY IN VIETNAM

Regarding solar energy, in the context of the world's progress in solar energy absorption technology, Vietnam's solar energy sector is considered to have many positive impacts. Solar energy is considered to have strong development potential in the future due to the favourable geographical position of Vietnam. However, the exploitation and use of this energy source have been improved with many applications of advanced equipment technology, especially for power generation, hot water heating, drying, etc. The use of this energy source compared to other energy sources is gradually developing and there is competition in the market. On the other hand, mechanisms and policies to encourage the use of solar energy and citizens' awareness have also been gradually improved. In the future, when the exploitation of other energy sources has reached the limit, Vietnam's solar energy source is great potential.

Biomass energy along with solar energy is a potential clean energy source for Vietnam. The source of biomass energy is waste from agricultural products or livestock waste, urban organic waste, and other organic wastes. Vietnam's solid biomass energy source is about 170 million tons and has an electrical output of 2000 MW. This is a great and potential energy source for Vietnam.³⁰

Wind energy is also a potential source for Vietnam due to its location in the tropical monsoon region, with a coastline of more than 3000 km. Vietnam's wind power potential ranges from 1785MW to 8700MW. Wind power of Vietnam is not only in coastal areas but also in mountainous areas, especially in valleys along rivers and streams. Vietnam has started implementing some projects to exploit wind power sources in the province of Ca Mau and the province of Ninh Thuan.³¹

³⁰ Decision No. 1293/QĐ-TTĐ dated 25/9/05/9/2012 of the Government on the National Strategy on Green Growth 2011-2020 and Vision to 2050; Decision No. 1216/QĐ-TTĐ dated September 5, 2012, of the Government on the National Strategy for Environmental Protection to 2020 with a Vision to 2030; Resolution 11/NQ-CP dated February 18, 2013, of the Government on the Government's action plan to implement Resolution No. 62/2013/QH13 dated November 27, 2013 of the National Assembly on strengthening the management planning, investment, construction, operation and exploitation of hydroelectric projects; Decree 18/2015/ND-CP stipulating environmental protection planning, strategic environmental assessment, environmental impact assessment, and environmental protection plan.

³¹ Ibid, *supra* note 23.

In addition, Vietnam also has potential for marine energy such as tides, ocean currents, and burning ice on the seabed. This is an energy source that can meet the needs of economic development in the long-term energy extraction strategy.

3. FACTS ABOUT USING CLEAN ENERGY IN VIETNAM

Vietnam has a strategy of clean energy use and development. It is expressed in the Vietnam's Constitution 2013. The State has policies on environmental protection; manage and use effectively and sustainably natural resources; nature conservation, biodiversity; proactively prevent and combat natural disasters and respond to climate change. The State encourages all activities of environmental protection, development and use of new and renewable energy. Organizations and individuals that pollute the environment, deplete natural resources and degrade biodiversity must be strictly handled and have the responsibility to remedy and compensate for damage.³²

In Vietnam, the energy industry has become a large-scale economic sector with dynamic development and deeper international integration. The strong development of the oil and gas industry, with the core being PetroVietnam (PVN), has led to the development of other industries such as power generation, chemical production, liquefied petroleum gas, etc. Oil industry services are also rich and diversified. In these fields, there are domestic and foreign-invested companies. Oil and gas exploitation has brought great benefits both directly and indirectly for socio-economic development. In about 10 years (2007-2017), the production value of the energy industry (coal and petroleum mining, electrical equipment production, electricity and gas production, and distribution) increased six times, contributing 20% value to the total output of the mining industry, the processing industry, the production and distribution of electricity and gas. The industry of manufacturing electrical equipment and manufacturing all kinds of equipment and services in the oil, gas, and coal industries has had some achievements and is increasingly developing. The dynamic development of the energy sector has made an important contribution to maintaining the high growth rate of the whole economy and is an important macro-regulating tool of the Government. The energy sector

³² Article 63 of the 2013 Vietnam's Constitution.

has actively promoted and effectively performed its role as the economic locomotive of the country. Energy enterprises are the core in the formation of many concentrated industrial parks; play a huge role in socio-economic development, increasing budget income in many localities. In addition to the purpose of electricity development, hydropower plants also have the task of preventing floods downstream in the rainy season, and at the same time providing water for production and people's needs in the dry season.

Many policies on ensuring energy security have been implemented such as reducing coal exports, promoting the exploitation of domestic energy sources, encouraging the development of renewable energy, promoting electricity trading and exchanging with neighboring countries. According to the system of international standards, Vietnam's national energy security has had some indicators that are moving in an unfavorable direction: the ratio of reserves and production of coal, crude oil and gas have been decreasing year by year, per capita, energy consumption is still low. National petroleum reserves have not yet ensured stability in the event of an oil price crisis in the international market.

The priority solution is to establish an energy development fund to support investment in new and renewable energy projects and public utility projects that have not yet been implemented. It has not prioritized allocating preferential credit capital from the overseas development assistance fund (ODA) capital, and other bilateral loans for energy resource prospecting and exploration projects.

The quality of human resource training is still uneven; there is a shortage of high-quality human resources meeting international standards. Additional training to take the lead in many weak fields is not linked to task requirements, especially in new and renewable energy, bioenergy, refining and petrochemicals, nuclear power, etc.

The structure and operation of scientific and technological research institutions are still inadequate and lacking in depth with limited ability to absorb and improve foreign technology. The research and development (R&D) and innovation are low having not created new technology creation.

According to the report of the Productivity Institute, in the period 2011-2017, the energy industry in the recent period increased capital rapidly, reaching 8.5%/year. The added value is largely based on inputs without a clear improvement in productivity, reaching only 1.05%. In the field of electricity and gas, the labour productivity of

some countries in the region is many times higher than that of Vietnam (Taiwan is 3.19 times; Japan is 7.2 times; South Korea is 14.5 times; Thailand is 2.1 times).³³ For Electric Vietnam Group (EVN), labour productivity in 2015 reached about 1.54 million kWh of commercial electricity/person, while Malaysia reached 2.9 million kWh/person, and Tepco Group (Japan) reached 7.5 million kWh/person³⁴.

National environmental protection policies and objectives, and the slow issuance of strategic environmental assessments have caused difficulties in the implementation of energy sector projects. After 5-7 years since 2007 as Resolution No. 24-NQ/TW of the 11th Communist Party Central Committee on proactively responding to climate change, strengthening natural resource management and environmental protection, the Vietnam's Government has enacted many legal documents to guide implementing this resolution.³⁵ National standards and regulations on safety and protection of the environmental and social impact assessment is still lacking, slow to be supplemented according to international regulations and standards. The control and management of energy exploitation technology equipment are not regular. Many old power plants have outdated equipment and lack equipment for treating smoke and wastewater according to advanced standards. Mechanisms and policies for the treatment of ash and slag discharged from coal-fired power plants are slow to be promulgated. Ensuring a good combination of energy exploitation and use with good environmental management has not been paid enough attention in some places. There have been some unfortunate incidents about the environment that cause concern when building new projects. New plants, especially coal-fired power plants, such as air pollution, deterioration of seawater and river water quality, changes in ecosystems, etc. The strong development of hydropower projects from 2006 to 2012 changed the flow mechanism of many natural rivers, reduced biodiversity, and took away a large area of forest and agricultural land. Coal and oil products account for the largest proportion of the structure of the primary energy supply (37.9% and 27.6%, respectively, in 2017).³⁶ In the coming years, the demand for supply and use of these energy sources will continue to remain high in several industries and transportation leading to increased emissions,

³³ Ibid, *supra* note 30.

³⁴ Ibid, *supra* note 23.

³⁵ Ibid, *supra* note 30.

³⁶ Ibid, *supra* note 23.

and environmental pollution, especially in big cities. Energy is the industry with the highest level of greenhouse gas emissions, which directly affects Vietnam's implementation of international commitments to environmental protection.

In 2015, the Prime Minister issued Decision No. 2068/QĐ-TTĐ approving Vietnam's renewable energy development strategy to 2030 with a vision for 2050. The renewable energy development strategy has encouraged the mobilization of all social resources and people for the development of renewable energy to enhance access to modern, sustainable, reliable energy sources at reasonable prices for all people. It is to step up the development and use of renewable energy sources, increase domestic energy supply, increase gradually the proportion of renewable energy sources in national energy production and consumption to reduce dependence on renewable energy sources, fossil energy, contributing to ensuring energy security, mitigating climate change, environmental protection, and sustainable socio-economic development.

To attract businesses to invest in the renewable energy sector, Decision No. 2068/QĐ-TTĐ stipulates EVN's responsibilities in purchasing electricity and prioritizing capacity mobilization from renewable energy sources. Power producers from renewable energy sources are given priority to exploit the full capacity and develop electricity by the operating mode of the plant. This decision is aimed at protecting the interests of investors, ensuring that they will be able to mobilize maximum capacity and sell all electricity produced from renewable energy sources.

In addition, the electricity price support mechanism is also implemented in the direction that electricity produced from small hydropower sources, wind energy, and solid waste biomass energy is purchased at a higher price than the purchase price of electricity from power sources conventional energy (large hydroelectricity, fossil fuels, etc.). Small hydropower projects and grid-connected biomass power projects enjoy preferential electricity prices. Wind power, solar power, and electricity from grid-connected solid waste are entitled to electricity price incentives according to the feed-in tariff price mechanism (The FIT price for onshore and offshore wind power is equivalent to 8.5 cents/kWh and 9.8 Ascent/kWh; FIT price for solid waste electricity is equivalent to 10.05 Uscents/kWh). This FIT price is applied to the project for 20 years. The selling price is fixed in USD;

payment is done in VND (Vietnam Dong) at the time of payment. The purchase price of electricity from renewable energy projects is higher than the average retail price of electricity in Vietnam. The Ministry of Industry and Trade of Vietnam has also coordinated with the ASEAN Council to issue the "Technical Handbook on Connecting Wind Power to the Vietnamese Grid". The development of renewable energy has many shortcomings, the power transmission system is still not synchronized and meets the requirements. In the year 2017-2018, with incentives for the development of solar energy³⁷ and wind power³⁸, the wind power and solar power have made great progress. By 2019, more than 100 solar power projects and 11 wind power projects have been put into operation with a total capacity of 44,479.5 MW from solar power and 377 MW from wind power, respectively. In addition, about 378 MW of rooftop solar power has been installed, of which the Hochiminh City area accounts for 18%, the southern region (excluding HCMC) accounts for 50% and the central region accounted for 26%.³⁹ In 2019, the electricity output from rooftop solar power is expected to reach about 99 million kWh 2019. However, because the grid infrastructure has not been developed in sync with the development of renewable energy sources, mainly solar power, the private mechanism has not been opened to invest in the power transmission system. Thus, there have been several projects with reduced capacity. According to the report of EVN,⁴⁰ this group has ensured the transmission capacity to mobilize the full power generation capacity of 81/100 renewable energy projects with a total capacity of about 4,400 MW (i.e., ensuring the mobilization of 86% of the capacity of power sources of wind and sun have come into operation). Only 19 factories in the two provinces of Ninh Thuan and Binh Thuan with a total capacity of 670 MW had to partially limit the generating capacity at some point in time due to partial overload of the 110 kV power grid because these 19 projects are all over the world connected on a single circuit 110 kV transmission line⁴¹. Research by the German Development Cooperation Organization (GIZ) shows that in the province of Ninh Thuan, about 10 solar and wind power projects have had their capacity cut by 38%-65%

³⁷ Decision No. 11/2017/QĐ-TTĐ of the Vietnam's Prime Minister.

³⁸ Decision No. 37/2011/QĐ-TTĐ and Decision No. 39/2018/QĐ-TTĐ of the Vietnam's Prime Minister.

³⁹ Ibid, *supra* note 23.

⁴⁰ Ibid, *supra* note 23.

⁴¹ Ibid, *supra* note 23.

while in province of Binh Thuan, from mid-2019 to date, renewable energy projects have experienced an average reduction of 30% in generating capacity.⁴² It is worth noting that projects that have been in operation for two years ago are also affected by the sharing of generating capacity with new projects put into operation.

There is a paradox currently occurring, the number and capacity of wind and solar power projects proposed to supplement the planning are very large, many times higher than the planned structure, but the amount of actual output power is still very low. The main reason is that the investor's capacity is not guaranteed, the state of offering for sale and project transfer leads to the slow implementation of the project while many capable investors cannot deploy the project because it has not been added to the project. This causes a great waste of national resources. The hot development of renewable energy, especially solar energy, is creating great challenges in power system operation while there is a lack of mechanisms and policies to encourage the private sector to invest in national electricity transmission systems.

In general, mechanisms and policies to develop renewable energy, especially wind and solar power, have not kept pace with the market, creating many policy risks for investors. Typically, Decision No. 13/2020/QĐ-TTg was issued in 2020, nearly a year after Decision No. 11/2017/QĐ-TTg expired on June 30, 2019. While the validity of Decision 11 is valid for more than two years, Decision 13 is only valid until the end of 2020. Besides, the Decision's guidance on these documents is not yet available. Regarding wind power, the effectiveness of the FIT mechanism for wind power is relatively short compared to the construction characteristics of wind power⁴³. In addition, the bidding mechanism is expected to be put into effect from November 2021 but has not been developed, it is necessary to consider extending the time to suit the actual situation.

The challenges of protecting the ecological environment and international commitments to respond to climate change also create great pressure when implementing the strategy to ensure energy security associated with sustainable development.

⁴² Ibid, *supra* note 23.

⁴³ Decision No. 39/2018/QĐ-TTg issued in 2018 is valid until 2021.

4. IMPACT OF INTERNATIONAL TRENDS OF ENERGY ON VIETNAM FIELD FOR THE NEXT PERIOD

The criteria for clean electricity production, the difficulty in exploiting fossil fuels, efficient use of energy and explosive development of digital technologies and energy markets have been affected by climate change. Rapidly growing renewables have all contributed to changing the world's energy landscape. The international context has a strong impact on Vietnam's energy development, especially in the context of increasing fuel and energy demand to 2030 and long-term to 2045. With positive impacts, such as developing digital technology applications to improve user efficiency and save energy, converting from using fossil energy to other forms of energy, mainly using renewable energy, the world energy market appeared with non-traditional objects such as low-carbon fuels, fuel cells, smart energy grids, etc. However, the main negative effects, such as shortage crisis, lead to frequent price fluctuations. The emission standards to the environment are getting higher and higher causing pressure to increase the rate of renewable energy. The equipment and the personal use of energy have increased by a factor of two, thereby increasing the demand for domestic energy consumption. With the rapid increase in foreign investment, it is difficult to control the rising energy demand.

In the context of fierce international competition and the implementation of a green growth strategy in reducing greenhouse gas emissions, Vietnam needs to strongly promote its available market tools and potential to be able to meet the requirements of domestic energy demand so that, in the future, Vietnam will not depend on imported energy sources that Vietnam has the potential to produce and develop.

5. CONCLUSION AND RECOMMENDATIONS

From the analysis above, we can see that clean energy plays an important role in the process of sustainable development. Therefore, many countries around the World including Vietnam are changing the way to use energy by replacing traditional energy by clean energy. To protect the environment and use clean energy better for the next period, some measures can be recommended, which are as follows.

First, develop and complete the legal framework and implement policies to form a competitive electricity market. The policy focuses on

encouraging domestic and foreign economic sectors to invest in the energy sector, especially the private sector based on attracting investment capital.

Secondly, create a mechanism to encourage the development of renewable energy. Accordingly, to effectively transition to market-based pricing, Vietnam needs to develop a comprehensive price reform plan, and build a strong communication strategy appropriately addressing price increases, efficiency of state-owned enterprises, and energy efficiency.

Thirdly, Vietnam needs to develop mechanisms and policies to encourage the use of renewable energy sources, using, first of all, wind energy, solar energy, and bioenergy. The State needs to have a tax reduction policy to reduce the burden on investors exploiting renewable energy forms.

Fourthly, for wind power and solar power, priority should be given to development by the ability to ensure system safety with reasonable electricity prices. Encourage the development of rooftop and on-water solar power. Develop supportive policies and breakthrough mechanisms for offshore wind power development in association with the implementation of the Vietnam Marine Strategy.

Fifthly, restructure energy-consuming sectors and areas in parallel with implementing policies on clean, economical, and efficient use of energy. Develop sustainable energy infrastructure, connect the region, and improve internal resources of manufacturing and service industries for clean energy development. Restructure, innovate and improve the operational efficiency of state-owned enterprises in the energy sector; encourage the private economy to participate in the socialization of clean energy development.

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Energy is essential for development,
and sustainable energy is essential
for sustainable development.

— *Tim Wirth* —

Integrating Water, Energy, and Food Strategies: Impact on Malawi's Sustainable Development Goals Achievement

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ABSTRACT

Malawi faces mounting challenges in meeting the growing demand for food, water, and energy to satisfy the needs of a rapidly growing population. Relying on secondary data, the chapter argues that while the existing policy initiatives have increased food production to a certain extent, the demand for water and energy has also increased, leading to degradation of the resource base, and contributing to an increase in water-related diseases. Poor sectoral coordination and institutional fragmentation have triggered the unsustainable use of resources and threatened the long-term sustainability of food, water, and energy security in the country, posing challenges to achieving the Sustainable Development Goals (SDGs) in the country. Consequently, this chapter substantiates that a nexus approach can enhance understanding of the interconnectedness of the sectors and strengthen coordination among them. However, it requires a major shift in the decision-making process towards taking a holistic view, and development of institutional mechanisms to coordinate the actions of diverse actors and strengthen complementarities and synergies among the three sectors. The framework for cross-sectoral coordination and managing the nexus challenges is also suggested.

Keywords: Climate Change; Malawi; Water; Energy; Food and Sustainable Development

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1. INTRODUCTION

The Water, Energy and Food (WEF) nexus approach has the potential to help African countries meet Sustainable Development Goals (SDGs).¹ This can only happen if the approach is turned into actions, like policy development and implementation. For the policy to be effective one must take into account what infrastructure is available in a country and a region. This must also be backed up by proper data collection and institutions must be strengthened to overcome bottlenecks. Equally important is the fact that interventions must be designed with the involvement of all stakeholders, including consumers. One common factor is that investment in innovation and technical support is vital so that a range of solutions can be developed.²

This chapter demonstrates that Malawi, like many other African countries, has failed to develop the integrated policy and institutional mechanisms required to address the Water, Energy and Food (WEF) nexus challenge as one interlinked ecosystem.

Although Malawi has made remarkable progress in socio-economic development in recent years, challenges persist in ending hunger and poverty, and ensuring food and nutritional security, an adequate standard of living, access to modern energy, and healthy lives for the vast population. In most developing countries having similar socioeconomic characteristics as Malawi, water, energy and food are inextricably linked in a nexus, as actions in one sector influence the others. Food production requires water and energy; water extraction, treatment, and redistribution require energy; and energy production requires water. Food production and freshwater services depend on water, land, and other natural resources, in other words a range of ecosystem services.

Malawi is a typical agrarian socio-ecological system. The World Bank classifies Malawi as a low-income country with a per capita GDP (in

¹ Eloise M. Biggs and others, 'Sustainable Development and The Water-Energy-Food Nexus: A Perspective on Livelihoods' (2015) 54 *Environmental Science and Policy* <<http://dx.doi.org/10.1016/j.envsci.2015.08.002>> accessed 18 February 2024.

² Agathe Maupin and Mercy M. Ojoyi, 'Africa needs to manage food, water and energy in a way that connects all three' (University of the Witwatersrand University of Johannesburg, January 2017) <<https://www.wits.ac.za/news/latest-news/in-their-own-words/2017/2017-01/>> accessed 18 March 2021.

purchasing power parity terms) of US\$780 in 2013.³ Over 53% of the population lives in poverty based on the US\$1 per day poverty line.⁴ Malawi's population is predominantly rural, with only 15% living in urban areas.⁵ In 2013 more than 77% of households depended on agriculture for their livelihood.⁶ Farming takes place on fragmented small parcels of customary land.⁷ The agricultural sector is the main source of economic growth and exports, representing about 37% of gross domestic product and 82.5% of foreign exchange earnings.⁸ Furthermore, due to low agricultural productivity levels, Malawi remained classified as a low-income food-deficit country by the FAO in 2014.⁹

Malawi is heavily reliant on biomass energy, with 90% of the population using wood or charcoal as a primary source of energy.¹⁰ Only 8% of the population is connected to the electricity grid, with huge disparities between urban (25%) and rural areas (1%).¹¹ Water infrastructure is generally poorly developed, especially in the rural areas, and modern irrigation systems are underdeveloped. Most agriculture is rain-fed. The overreliance on singular sources of food

³ World Bank. Country and Lending Groups. (2015)
<<http://data.worldbank.org/about/country-andlending-groups>> accessed 20 March 2023.

⁴ C. I. A. 'The World Fact Book: Malawi' (2015)
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⁶ AQUASTAT, Water report for Malawi (2015).
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⁸ African Development Bank, 'Malawi Country Strategy paper (2014-2018)' (2013)
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⁹ Thea Nielsen and others, 'The Food-Energy-Water Security Nexus: Definitions, Policies, and Methods in an Application to Malawi and Mozambique' (IFPRI Discussion Paper 01480 November 2015)
<<http://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/129808/filename/130019.pdf>> accessed August 2023.

¹⁰ Gamula, Hui, Peng (n 7)

¹¹ Renewable Energy and Energy Efficiency Partnership [REEEP]. *Policy DB Details: Malawi*. 2012.
<<http://www.reEEP.org/index.php?id=9353&special=viewitem&cid=94>> accessed 15 December 2023.

(maize) and energy (biomass) both make the country more vulnerable to climate change (droughts and flooding), while aggravating its effects, as the pressure on woodlands has led to deforestation in several parts of the country.¹²

With growing populations, declining agricultural land, increasing stress on water and energy resources, and climate variability and change, Malawi faces the challenge of how to produce more food with the same or less land, less water, and increased energy prices, while conserving resources and maintaining environmental sustainability. The sustainability of maize production is under threat because of its heavy reliance on water and energy, growing water stress and energy shortages, poor functioning of irrigation systems, and increased competition for water and energy. The Sustainable Development Goals (SDGs) by the global community are critically important for Malawi with respect to ensuring water, energy and food security in a way that does not undermine sustainability for future generations.¹³

To feed its growing population, Malawi has pursued policies aimed at achieving national food self-sufficiency through production of staple crops. However, their objective relies on more intensive use of water, energy, and chemical inputs. These policies have contributed to increased food production,¹⁴ although not necessarily a more nutritious diet, but at the cost of accelerated degradation of critical natural resources such as land, soil, and water, and serious environmental impacts including groundwater depletion, waterlogging, salinity of soil, water pollution, and biodiversity loss. Another example is the policy of subsidies which leads to overuse of water and energy and can even be counterproductive.¹⁵ Though it is true that energy subsidies can promote social objectives (when judiciously used), especially in case of the absence of social welfare mechanism for supporting the poor. However, subsidies end up lowering end-user prices. This will result in

¹² Patsani G Kumambala and Alan Ervine, 'Site selection for combine hydro, irrigation and water supply in Malawi: Assessment of water resource availability' (2009) 248 *Desalination* 537.

¹³ Blake Robinson and Jeremy Wakeford, 'Oil Shock Vulnerabilities & Impacts: Case Study of Malawi' (Paper prepared for United Kingdom Department for International Development June 2013).

¹⁴ Thea Nielsen and others (n 9)

¹⁵ Golam Rasul, 'Managing the food, water, and energy nexus for achieving the Sustainable Development Goals in South Asia' (2016) Vol. 18 *Environmental Development* 14–25 <<http://dx.doi.org/10.1016/j.envdev.2015.12.001>> accessed 4 August 2023.

increased energy use and reduce incentives for sustainable energy use leading to inefficient consumption path which is unsustainable.¹⁶

Negative environmental impacts can arise from intensive agriculture, e.g., waterlogging and salinization of soils and increased incidence of waterborne and water-related diseases. Because of the intensive energy use, food production has become increasingly vulnerable to changes in the energy availability and costs. The challenges of ensuring food, water, and energy security are further compounded by the potential impacts of climate change on water resources and on energy use, and by increasing competition for land and water for bioenergy and hydropower. Food choices and agricultural practices influence water and energy demand. Similarly, water, energy, and land demand are influenced by different policies, for example those relating to agriculture, energy, land-use, food, fiscal, credit, prices, and subsidies.¹⁷ These relationships are dynamic.

However, policies in Malawi, as in many developing countries, are generally narrowly sectoral, with a disconnect between those for food, water, and energy. By ignoring the underlying interdependence of the three sectors, policies sometimes have the unintended consequence of shifting a crisis from one sector to another. Additionally, policies and actions which are taken in isolation, without considering their impact on other sectors, can aggravate resource constraints.

With competing demand for resources and increasing environmental pressure, an important challenge facing Malawi is how to minimize conflicts among the three main sectors of food, water, and energy, and promote synergies in policies and instruments. At present, policies and instruments are developed without adequate consideration for the cross-sectoral consequences. The lack of connection between

¹⁶ Analysis of the Scope of Energy Subsidies and Suggestions for the G-20 Initiative: IEA, OPEC, OECD, World Bank Joint Report (prepared for submission to the G-20 Summit Meeting Toronto (Canada), 26-27 June 2010).

¹⁷ <<https://www.oecd.org/env/45575666.pdf>> accessed 4 August 2023.
 Golam Rasul and Bikash Sharma 'The nexus approach to water–energy–food security: an option for adaptation to climate change' (2015) *Climate Policy*, <<http://dx.doi.org/10.1080/14693062.2015.1029865>> accessed 4 August 2021;
 Golam Rasul, 'Food, water, and energy security in South Asia: A nexus perspective from the Hindu Kush Himalayan region' (2014) Vol. 39 *Environmental Science & Policy* 35-48
 <<http://dx.doi.org/10.1016/j.envsci.2014.01.010>> accessed 4 August, 2021; Golam Rasul, 'Managing the food, water, and energy nexus for achieving the Sustainable Development Goals in South Asia' (2016) Vol. 18 *Environmental Development* 14–25 <<http://dx.doi.org/10.1016/j.envdev.2015.12.001>>.

sectoral agencies has created an imbalance between the sectors in terms of demand and supply. Conducted cross-sectoral efforts have remained linear, such as taking into account water for food or energy for food. While the agricultural policy framework has contributed to an increase in food grain production, it imposes a huge pressure on water and energy resources, which in turn has weakened the sustainability of the agriculture.

The connections between macro-economic and sectoral policies and cross-sectoral impacts are not internalized into national policies. The cross-sectoral externalities have placed additional pressure on land, water, energy, and other scarce resources and undermined the long-term sustainability of water, energy and food security. The major challenge therefore facing Malawi (as other developing countries) is how to decouple food production from water and energy use intensity and environmental degradation to make it sustainable. The planned Sustainable Development Goals (SDGs) of zero poverty (SDG 1), ending hunger and food insecurity (SDG 2), ensuring water security (SDG 6), access to modern energy (SDG 7), sustainable economic growth (SDG 8), sustainable consumption and production (SDG 12), and conservation, protection, and sustainable use of marine and terrestrial resources and ecosystems (SDGs 14 and 15) are closely interlinked and success in achieving them will depend heavily on ensuring the sustainable use and management of water, energy, land (food), and other natural resources.¹⁸ These factors are not only interdependent, they also both reinforce and impose constraints on one another.

The goals are interlinked in different ways. Achieving the goal of food security and ending hunger, for example, depends strongly on achieving the goal of water and energy security which is needed to ensure water and energy is available for food production. Similarly, the ability to achieve the goal of water and energy security will largely depend on the ways in which food is produced, processed, transported, and consumed. Enhancing the efficiency of water, energy, and land use can ease the trade-offs and resource conflicts. Ensuring resource use efficiency, however, will not be sufficient to sustain water, energy and food security in the long run unless natural resources and ecosystems are conserved and used sustainably. The natural resource base and

¹⁸ Nina Weitz, Manns Nilsson and Marion Davis, 'A Nexus Approach to the Post-2015 Agenda: Formulating Integrated Water, Energy and Food SDGs' (2014) Vol. 34 (2) SAIS Review of International Affairs 37-50.

health of the ecosystem set the conditions for sustainable production. Finally, ensuring healthy lives cannot be achieved by achieving a particular goal; it depends on multiple goals ranging from ensuring food, water, and energy to inclusive growth, healthy ecosystems, and protection of the environment. Like the food, water, and energy nexus, the SDGs are closely interlinked. Thus water, energy and food security, and the SDGs need to be addressed in an integrated way in Malawi.

Despite the inherent interconnectedness of water, energy and food, little effort has been made in Malawi to recognize the interdependencies of resource use, policies, and institutional or regulatory arrangements. Thus the present research will specifically: (1) demonstrate how the SDGs 2, 6, and 7 with their respective targets are interconnected; (2) present a preliminary pilot platform to assess the impact of the water targets on the food and energy targets in Malawi; (3) explore possible trade-offs for implementing different levels of the proposed water, energy, and food national plans; (4) propose interventions within the three national plans (social, policy, technical), at different scales, which have the potential of reducing the existing competition and ensure a more sustainable resource allocation; (5) demonstrate how such interventions must be hinged on effective stakeholder mapping and capacity development in order to be effective.

2. CASE STUDY

Malawi has a primarily rural population, with only 16 percent of the population residing in urban areas. It also has a relatively youthful population; 44 percent of the population is under 15 years.¹⁹ Malawi has benefited from decades of peace and political stability but is susceptible to climate shocks. The 2015–2016 growing season was negatively affected by El Niño, which caused late rains and prolonged dry spells.²⁰

Malawi's economy is highly dependent on agriculture with 80 percent of the population being smallholder farmers. Agriculture contributes about 30% to the GDP and accounts for 90% of total foreign exchange earnings. Malawi's GDP growth rate is expected to

¹⁹ Population Reference Bureau, '2017 World Population Data Sheet' (2017) <http://www.prb.org/pdf17/2017_World_Population.pdf> accessed 4 August 2023.

²⁰ Malawi Vulnerability Assessment Committee (MVAC), 'National Food and Nutrition Security Forecast, April 2016 to March 2017' (2016) <http://vam.wfp.org/CountryPage_assessments.aspx?iso3=mw> accessed 15 December 2023.

improve if weather patterns continue to improve and remain favourable for agricultural production.²¹ However, despite projected economic improvement, 66 percent of the population continues to live on less than US\$1.90 a day.²² Currently, Malawi ranks 143 out of 157 countries in progress toward meeting the Sustainable Development Goals (SDGs).²³ According to the most recent DHS (2015–2016), 16 percent of female deaths are related to pregnancy or childbearing, and 1 in 16 children will die before the age of 5, with two-thirds of these deaths occurring during infancy.²⁴

About 85% of Malawi's human population lives in rural areas where agriculture is the main source of livelihood.²⁵ Agriculture's contribution to foreign exchange and GDP has been driven primarily by tobacco, the country's main cash crop and foreign exchange earner. Tea and sugar are the other important export crops. Domestically, maize is the predominant food crop, grown by nearly all smallholders throughout the country, and contributes to more than half of the national calorie uptake. Given the importance of the crop in the Malawian diet, maize production is vital to the general welfare of the population and is therefore an important social and political variable.²⁶

Malawi is generally rich in both surface and ground water resources. Surface water resources comprise a network of rivers comprising North and South Rukuru and Songwe in the Northern Region, Linthipe, Bua, Dwangwa in the Central Region, and Shire and Ruvo in the Southern Region. Groundwater resources are mainly found in two key aquifer systems: the extensive but low yielding Pre-

²¹ USAID, 'Food Assistance Fact Sheet – Malawi' (2017) <<https://www.usaid.gov/malawi/food-assistance>> accessed 15 December 2020; World Bank, 'Malawi Country Overview' (2017) <<http://www.worldbank.org/en/country/malawi/overview>> accessed 15 December 2020; Government of Malawi, *Malawi 2015 Floods Post Disaster Needs Assessment Report* (World Bank Group 2015) <<https://reliefweb.int/report/malawi/malawi-2015-floods-post-disaster-needs-assessment-report>> accessed 15 December 2023.

²² Jeffrey Sachs and others, *SDG Index and Dashboards Report 2017* (Bertelsmann Stiftung and Sustainable Development Solutions Network 2017).

²³ *ibid* 63.

²⁴ National Statistical Office (NSO) [Malawi] and ICF, *Malawi Demographic and Health Survey 2015–16*. (2017) Zomba, Malawi, and Rockville, Maryland, USA: NSO and ICF.

²⁵ *ibid*.

²⁶ FEWS NET, 'Malawi Food Security Outlook Update' (2017) <https://reliefweb.int/sites/reliefweb.int/files/resources/MW_FSOU_2017_12_final.pdf> accessed 15 December 2023.

Cambrian Basement Complex aquifer, and the high yielding alluvial aquifer along the shores of Lake Malawi and Lake Chilwa, and in the Upper and Lower Shire Valley. But despite the availability of abundant water resources in the country, only 2.3% of total arable land is irrigated, and the largest proportion (52%) is estate or plantation farms, mostly growing sugarcane and tea.²⁷ Smallholder irrigation, which comprises 48% of irrigated land, remains virtually under-developed. Shire River is the outlet of Lake Malawi and accounts for about 98% of the country's hydropower generating capacity, which makes the country's industrial development almost entirely dependent on the Shire River for its energy.²⁸ In this regard, reduced flows into Lake Malawi by the tributary rivers have a direct effect on flows in the Shire River, and a consequent bearing on reduced energy generation capacity. In recent years, intermittent hydropower generation has been attributed mainly to droughts and floods episodes. Water flow disruptions in the Shire and its tributaries have been exacerbated by siltation caused by poor and unsustainable land husbandry practices and deforestation taking place in the catchment area, and the infestation of waterweeds, such as water hyacinth.²⁹

Fish is the main source of animal protein in Malawi. About 70% of total human population derive their animal protein uptake from fish, most of which are harvested from Lake Malawi. A large percentage of the population of people living along the shores of Lake Malawi, Lake Chilwa and Lake Malombe depend on fish resources for the sustenance of their livelihoods.³⁰ For the past decade or so, droughts and floods have been the major climatic hazards affecting fisheries production and have contributed immensely towards the declining or even drying up of water bodies, resulting in low fish catches and loss of biodiversity. Floods have been responsible for the destruction of fish ponds, whilst droughts have led to low water levels in the main water bodies and

²⁷ Global Water Partnership, 'National Consultations on Water, Food Security and Nutrition' (A Final report of National Consultation on Water, Food Security and Nutrition in Malawi, May 2016)
<<https://www.gwp.org/globalassets/global/activities/news/july-2016/gwp---malawi-country-report.pdf>> accessed 15 December 2023.

²⁸ *ibid.*

²⁹ *ibid.*

³⁰ *ibid.*

reservoirs, or even the drying up of rivers and lakes. For example, the drying up of Lake Chilwa in 1995 resulted in total loss of fish stocks.³¹

The totality of the calamities highlighted above has led to extreme food shortages in Malawi, and it is against this background that the Government is committed to redress the resultant effects for the country to meet both its food security and nutrition as well as water needs for its rapidly growing population.

3. KEY CHALLENGES FOR MALAWI

3.1 Poor Catchment Conservation

At the moment, sedimentation is a serious problem that rivers and lakes in Malawi are experiencing. With increased catchment degradation, large volumes of sediments washed down from catchments get deposited in rivers and lakes, thereby clogging water treatment works for domestic water supply, irrigation canals, and hydropower generation infrastructure.³² Malawi has more than 56 gravity fed water supply schemes and more than 750 small earth dams, four large dams; namely, Lunyangwa Dam in Mzuzu, Kamuzu Dams I and II in Lilongwe, and Mulunguzi Dam in Zomba. But due to excessive siltation, some of these gravities fed schemes and small earth dams have stopped functioning. Of late, water supply to Lilongwe City has tremendously declined due to the siltation of Kamuzu Dams I and II caused by destruction of Dzalanyama Forest Reserve, the main source of the rivers that feed into the two dams. The challenge of poor catchment conservation has widely been acknowledged as causing food insecurity and water resource degradation and depletion.³³

3.2 Food Insecurity

Food insecurity in Malawi (which is mainly an agrarian society), has been significant and some of the drivers of hunger are weather associated factors like flooding, drought and erosion.³⁴ For instance, in

³¹ *ibid.*

³² *ibid.*

³³ *ibid.*

³⁴ Tilele Stevens and Kaveh Madani, 'Future climate impacts on maize farming and food security in Malawi' (2016) 6:36241 Scientific Reports, <<<https://doi.org/10.1038/srep36241>>; Madhumita Paul, 'Some 2.64 Million Malawians Face Acute Food Insecurity Between January And March: Report' (12 January 2021) <<https://www.downtoearth.org.in/news/africa/some-2-64-million->

2012/13 about 1,630,000 people relied on food relief while in 2013/14 about 1,154,000 people relied on food hand-outs.³⁵ In 2015/16 the figure rose to about 2.86 million people. In 2018, 3.3 million Malawians were food insecure, 1.8 million in 2019, and 2.6 million were anticipated in 2020.³⁶ According to the Second Round Agricultural Production Estimates Survey (APES) released by the Ministry of Agriculture, Irrigation and Water Development in March, the country's main staple food, maize registered a decline of 12.4 percent as compared to the 2014/15 final round estimate.³⁷

3.3 Poor Irrigation Development

There is a growing national demand for water resources particularly during the dry season. This has resulted in calls for better Water Resources Management (WRM) and its development to ensure that water resources do not limit social and economic development and poverty reduction in the country. Over the years Malawi has been facing problems of water scarcity due to climate change, environmental degradation, and lack of storage and reservoirs.

The country is divided into 17 Water Resources Areas (WRAs), which are subdivided into 78 Water Resources Units (WRUs). There are two major drainage systems: The Lake Malawi system, which is part of the Zambezi River basin. The Shire River is the only outlet of the lake with an average flow of 400 m/s of water.³⁸ The government placed a high priority on irrigation and WRM development in order to ensure food and water security at household level, for example, through water harvesting, improved water catchment and management. The department of WRM in MoAIWD has constructed over 25 small to medium multipurpose dams in the 24 districts across the country to make water resources readily available for multiple uses.³⁹

By 2010 the demand for water in Malawi was already greater than the supply in many WRAs with the situation predicted to worsen

malawians-face-acute-food-insecurity-between-january-and-march-report-75030> accessed 4 August, 2021; Global Water Partnership (n 27).

³⁵ Global Water Partnership (n 27).

³⁶ Blessings Botha, 'Amid maize bumper harvests in Malawi, food insecurity reigns' (October 2020) <<https://blogs.worldbank.org/africacan/amid-maize-bumper-harvests-malawi-food-insecurity-reigns>> accessed 4 August 2023.

³⁷ FEWS (n 20).

³⁸ FAO (n 25).

³⁹ MoAIWD (n 22).

in the future.⁴⁰ In addition, data for 17 WRAs shows a deficit of 110 Ml/d in 2010 increasing to 170 Ml/d by the year 2020 and worsening to 956 by the year 2035.⁴¹

Notwithstanding the drought related decline in crop production, irrigation in Malawi is under-developed. According to the Irrigation Master Plan and Investment Framework (2015), Malawi has an irrigation potential of about 408,000 hectares. At present, however, only 104,463 hectares have been developed, representing 26% of potential irrigable land. Out of this, about 52,144 ha (49.8%) are under smallholder farmers while 52, 499 (50.2%) ha are under commercial estates.⁴² The area under irrigation is low partly due to low levels of financing, high cost of irrigation investment, low levels of economic rate of return and unfavourable financing mechanisms prevailing in the country. On average, it costs about US\$10,000 to develop one ha for irrigation. It also takes about 3 to 5 years for an investor to start realizing profits (economic rate of return) from irrigation investment.

3.4 Energy Insecurity

Given its relatively small landmass, large (and growing) population and heavy dependence on fuel wood, Malawi is an increasingly energy-stressed country. The National Energy Policy estimates that 93% of total energy demand is met by biomass energy. Households consume 84% of the total primary energy. A staggering 99% of household energy is supplied by biomass. This, with increasing population growth, is exerting significant pressure on the country's forest resources, leading to forest degradation and deforestation at a rate of 2.6% per year. 87% of the population uses firewood and 8% charcoal to satisfy their thermal energy needs. Less than 7% of the 14 million people are connected to the national grid.⁴³ The connected demand far exceeds the supply of 320 MW installed generation capacity. Thus, load shedding is frequent. Less than 2.3% of the total

⁴⁰ *ibid.*

⁴¹ *ibid.*

⁴² (AGWA, 2015).

⁴³ Joseph Kalowekamo, 'Biomass energy strategy' (March 2013) <http://mbaula.org/index_html_files/2%20-%20BEST%20Presentation.pdf> accessed 4 August 2021; Malawi Energy Situation, Energypedia <https://energypedia.info/wiki/Malawi_Energy_Situation> accessed 4 August 2023.

national energy demand is met by electricity, 3.5% by liquid fuels and gas, and 1% by coal.⁴⁴

Electricity and gas are only intermittently available and considered to be too expensive for cooking; for example, electricity tariffs were raised by 84% in 2013. Therefore, firewood and charcoal are the major cooking fuels, even in the urban areas.⁴⁵ Most of the charcoal is consumed in urban areas – representing 46% of total demand. Unlike in many neighbouring countries, firewood is still available in all four major cities of Malawi (Lilongwe, Blantyre, Zomba and Mzuzu) as well as in the district capitals. Firewood provides over 50% of the urban cooking fuel and nearly 100% in the rural areas.⁴⁶

Even in urban areas, firewood is mainly used in open three-stone fires. Therefore, there is a potential to introduce convenient affordable portable firewood stoves in urban areas and shift eventually some parts of the cooking activities currently done with charcoal to a less primary-energy intensive fuel source, meaning un-carbonised firewood. Charcoal in Malawi is mostly unsustainably produced from live trees: over 60% of the charcoal is made from wood originating from protected Forest Reserves and National Parks; even firewood is unsustainably collected.⁴⁷

The Maplecroft's Climate Change and Environment Risk Atlas shows that Malawi is increasingly vulnerable to the impacts of climate change. According to the new Climate Change Vulnerability Index (CCVI), there are 30 countries at 'extreme risk' worldwide. Malawi moved fast from position 15 in 2011 up to number 9 on this list.⁴⁸ This explains why the Ministry of Environment and Climate Change Management is supporting the initiative to promote energy efficient biomass appliances like cook stoves to reduce the quantity of solid biomass required for preparing a meal.⁴⁹

⁴⁴ Government of Malawi, *Malawi 2015 Floods Post Disaster Needs Assessment Report* (World Bank Group 2015) <<https://reliefweb.int/report/malawi/malawi-2015-floods-post-disaster-needs-assessment-report>> accessed 15 December 2023.

⁴⁵ ESCOM, 2013.

⁴⁶ A Bogdanski and C Roth, 'Integrated food-energy systems: Growing fuel wood on farm in Malawi' (2012) 26(2) *Nature & Faune* 57

⁴⁷ J Taulo et al., 'Energy Supply in Malawi: Options and Issues' (2015) 26(2) *Journal of Energy in Southern Africa*, 19.

⁴⁸ Bodanski and Roth (n 47).

⁴⁹ Charles Jumbe and Arild Angelsen, 'Modelling Choice of Fuelwood Source Among Rural Households In Malawi: A Multinomial Probit Analysis' (2011) 33(5) *Energy Economics* 732.

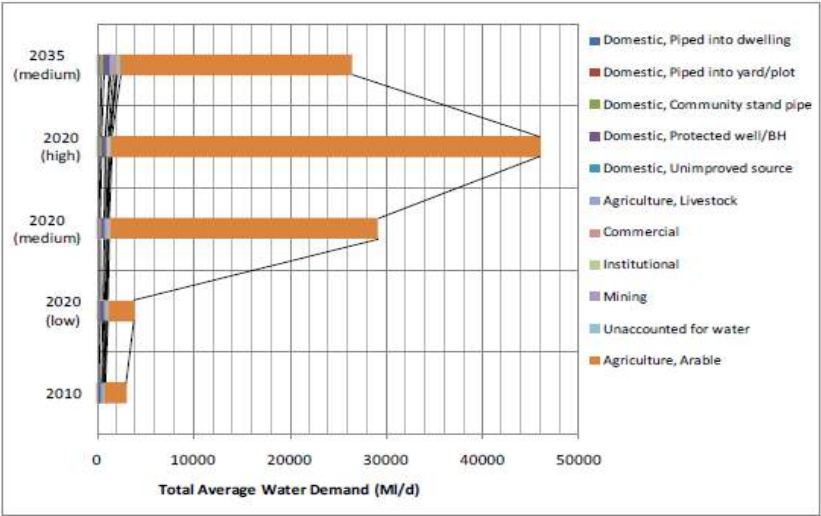


Figure 1: Projected increases in total average water demand (ML/day) from 2010 baseline.⁵⁰

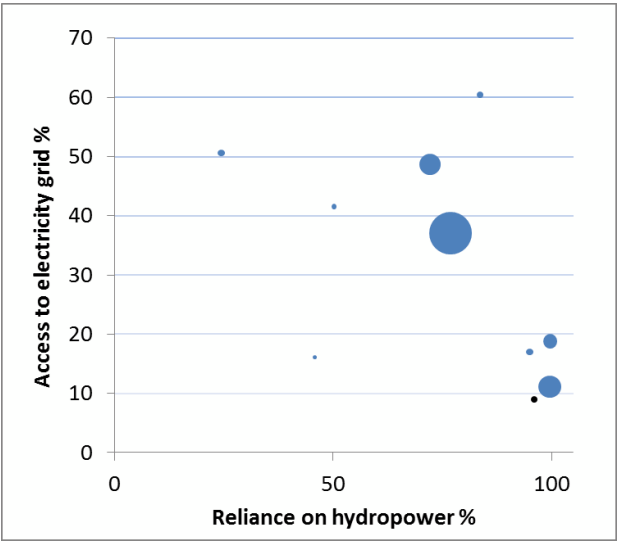


Figure 2: Reliance on hydropower and access to electricity with water availability per head represented by the size of the circles. The black circle represents Malawi.⁵¹

⁵⁰ Anthony Hurford, Steven Wade and J Winpenny, 'Malawi Case Study: Harnessing Hydropower' (A report submitted to Department for International Development (DFID), United Kingdom 2014).

⁵¹ World Bank, World Development Indicators (Washington, DC: 2013).

4. CURRENT CROSS SECTORAL POLICIES ON WATER, ENERGY AND FOOD IN MALAWI

This section assesses the trends and issues in food, water, and energy security in Malawi and their interconnected challenges. It begins by examining food security policies, followed by the sections showing how policy interventions in one sector have engendered knock-on negative externalities in others, and increased pressures on their sustainability.

4.1 Food Security Policies

In the attempt to harmonize policies, the government reviewed the various national development strategies and agricultural related legislation and policies and produced the Agricultural Policy Framework (APF). The APF summarizes the objectives of agricultural development, strategies and policies that will be pursued to achieve both stated and commonly perceived agricultural objectives.⁵² The purpose of the APF was to increase agricultural productivity so as to ensure food security and sustainable agricultural growth and development.

The Malawi Agricultural Policy framework and the MGDs are consistent with the Comprehensive Africa Agriculture Development Programme (CAAPD) in terms of objectives of agricultural development and the key areas of focus in order to achieve sustainable development.⁵³ The Agricultural Sector Wide Approach process (ASWAp) is a path that Malawi has chosen to align its agricultural development agenda with the CAADP process. The ASWAp has five broad focus areas called priority pillars; namely, (i) Food security and risk reduction, (ii) Agribusiness and Market Development, (iii) Sustainable Land and Water Management, (iv) Research, Technology and Dissemination and (v) Institutional strengthening and capacity building.⁵⁴

The ASWAp is an investment framework that will guide government and development partners in the implementation of result-oriented priority programmes in the agricultural sector. The ASWAp is also a programme approach to development that will broaden ownership by government over decision making on policy, strategy and

⁵² (MoAIWD) 2006.

⁵³ (MoAIWD, 2009).

⁵⁴ *ibid.*

spending, increase coherence between sectoral policies, reduce transaction costs through the use of government procedures and strengthen national institutions.⁵⁵

Malawi needs substantial increases in its agricultural growth rate if it is to significantly reduce poverty and lay the foundation for any kind of structural transformation that will benefit a large portion of the population. The CAADP, which is a concept of the New Partnership for African Development (NEPAD), has set out the agricultural GDP growth rate target of 6% per annum for African countries tasked to find ways to achieve this target. The ASWAp is therefore using a minimum target of 6% growth in the agricultural sector as recommended by the CAADP.

The GoM adopted a National Irrigation Policy and Development Strategy (NIPDS) in June 2000. The NIPDS, supported by an Irrigation Act passed in 2001, states that GoM will assume the role of facilitator of sustainable irrigation development in areas having potential, using a participatory approach, and will embark on developments only if the smallholder farmers in the area request such development and meet the criteria for sustainable development. The NIPDS aims to: (i) identify areas with irrigation potential; (ii) encourage private sector development of irrigated agriculture (estates and commercial farms); (iii) assist smallholders to develop and manage their own self-help irrigation schemes; (iv) transfer management of existing government schemes to their beneficiaries; (v) assist informal sector irrigation; (vi) enhance national capacities for irrigation development; (vii) conduct research in irrigation technology; and (viii) promote the use of both simple and advanced irrigation.⁵⁶

Malawi's Farm Input Subsidy Program (FISP) has shaped the country's development and agricultural policy the most. This national program began in 2005 after the end of several maize input subsidy programs from the 1990s and severe droughts early in the following decade.⁵⁷ Since its inception, its expenditures have accounted for more than 60 percent of Malawi's agricultural budget. FISP aims to enhance food security through improving agricultural productivity by increasing maize production, promoting household food security, and increasing

⁵⁵ *ibid.*

⁵⁶ *ibid.*

⁵⁷ (Dorward et al. 2008).

income⁵⁸ by decreasing the costs of fertilizer and improved maize seed for poor smallholder farmers.⁵⁹ The program targets almost half of all Malawian farmers. Targeting effectiveness in FISP and other programmes has been widely studied and discussed. Over the life of the programme, changes in area targeting have resulted in more equitable distribution of input vouchers per household, but there have been limited changes in targeting criteria and processes at beneficiary level. Broad beneficiary targeting criteria have allowed wide variations in their application at community level, resulting in biases against receipt of subsidized inputs by poorer people. Widespread and increasing redistribution and ‘sharing’ of coupons has reduced this bias but increased the likelihood of poorer recipients receiving fewer coupons than less-poor recipients. There have also in some years been gender biases against receipt of coupons and access to subsidized fertilizers by female headed households.⁶⁰

On the one hand, an increase in food production is likely to entail a higher demand for water. This decreases water availability indirectly as well as increase health risks and waterborne diseases.⁶¹ On the other hand, given the definition of water security by UN-Water, which emphasizes “acceptable quality water” as a dimension of water security, fertilizer subsidies may directly influence water security.⁶² Mineral and chemical fertilizer can be washed away by rain into rivers and lakes and cause eutrophication, which drastically increases algae. Moreover, extensive use of fertilizer can pollute ground and drinking water.⁶³ Therefore, FISP may have direct and indirect impacts on water security. A direct relationship between energy security and fertilizer exists as the production of ammonia and nitrogen fertilizer requires energy in the

⁵⁸ Rodney Lunduka at al., ‘What Are the Farm-Level Impacts of Malawi’s Farm Input Support Program? A Critical Review’ (2013) 44(6) *Agricultural Economics* 563.

⁵⁹ Channing Arndt at al., ‘The Economywide Impacts and Risks of Malawi’s Farm Input Subsidy Program’ (Invited paper presented at the 4th International Conference of the African Association of Agricultural Economists, Hammamet, Tunisia. September 2013).

⁶⁰ Nazaire Houssou and Manfred Zeller, ‘To Target or Not to Target? The Costs, Benefits, and Impacts of Indicator Based Targeting’ (2011) 36 (5) *Food Policy* 627 (Dorward et al. 2008).

⁶¹ (UN Water 2013).

⁶² *Ibid.*

⁶³ Edwin D. Ongley, ‘Control of Water Pollution from Agriculture’ (Irrigation and Drainage Paper 55. Rome: Food and Agriculture Organization of the United Nations. 1996).

form of natural gas. Since Malawi is a net importer of fertilizer, the production of nitrogen does not directly affect energy security in Malawi; however, analysing the potential effects of FISP on energy security at the national level, one can find indirect linkages through higher agricultural output, potentially leading to economic growth and higher energy demand.

4.2 Water Security Policies

Despite its significant water resources, Malawi often experiences droughts with periods of unreliable and poorly distributed rainfall. This has severely affected crop production which often results in families running out of food by November each year. The vulnerable areas tend to be those with average rainfall amounts of less than 1000 mm.⁶⁴ In these areas, many of which are located in the South of the country, the variability of the rainfall is higher with actual useful amounts available to the crops being masked by the average figures.⁶⁵

The Ministry of Agriculture and Water Development formulated the National Water Policy (2004) to strengthen and harmonize issues of water resources management and utilization to guide the country in the sustainable use of water. Among its strategies, the policy ensures that the relevant institutions are provided with the relevant information on floods and droughts; and formulation of mitigation measures to reduce the impact of climate change and variability as a means for disaster preparedness and management; but also promoting coordination with other institutions on disaster management. The Water Works Act (1995) and the Water Resources Act (1999) introduced the commercialization and decentralization of urban and peri-urban water supply to parastatal bodies established under its provisions. The act made provisions for the control, conservation, apportionment and use of water resources of Malawi.⁶⁶

With the acceleration of population growth and repeated droughts over the past decades, Malawi is expanding its support for irrigation.⁶⁷ In Malawi a total area of 104,000 hectares is irrigated.⁶⁸

⁶⁴ (World Bank, 2010).

⁶⁵ *ibid.*

⁶⁶ (World Bank, 2011).

⁶⁷ Bryson G. Nkhoma and Wapulumuka O. Mulwafu, 'The Experience of Irrigation Management Transfer in Two Irrigation Schemes in Malawi, 1960s-2002' (2004) 29 *Journal of Physics and Chemistry of the Earth* 1327.

Since 1994 the irrigated area has increased more than four times.⁶⁹ In several areas of Malawi, the irrigation boom is accompanied by the transfer of irrigation management from the government to farmers. Stakeholder participation in irrigation management is expected to encourage sustainable operations by inducing a sense of ownership and responsibility among farmers. Ideally, farmers would plan, build, maintain, and manage their community's irrigation scheme. This transfer of ownership and management from the government to farming communities, called Irrigation Management Transfer (IMT), is rife with challenges and has not yet been entirely successful.⁷⁰

In 2010, Malawi began promoting the Green Belt Initiative (GBI), which is a large-scale irrigation policy for smallholders and commercial farmers to use Malawi's water resources, predominantly Lake Malawi. The Malawian government has offered investors agricultural land near the country's three biggest lakes and perennial rivers to install irrigated agriculture on 1 million hectares by relocating villages.⁷¹ The initiative has been aimed at higher agricultural output of food and cash crops with the goals of increasing macro- and microlevel food security and decreasing poverty. Through subsequent increases in agricultural and non-agricultural growth, it has been found that greater diversification in the agricultural sector and the rest of the economy results in reductions in poverty as well as caloric and nutritional deficiencies. This implies that the GBI has a large potential to increase food security at the macro- and micro levels.

The initiative directly improves water security by increasing water access. Most irrigation schemes are located near Lake Malawi, which could decrease the lake's water levels and water flowing out of rivers, making it difficult to maintain sufficient water levels to produce hydro energy.

⁶⁸ Malawi, MoAIWD (Ministry of Agriculture, Irrigation and Water Development). *National Irrigation Master Plan and Investment Framework*, 2015 Lilongwe, Malawi, <<https://mediamanager/documents/Publications/Climate/sei-pb-2013-malawi-energy-access.pdf>>.

⁶⁹ P. W. R. Kaluwa at al., 'The Country Situation Report on Water Resources in Malawi. Lilongwe UNDP/SADC Water Initiative.' In W. O. Mulwafu, and B. G. Nkhoma, 'The Use and Management of Water in the Likangala Irrigation Scheme Complex in Southern Malawi,' (2002) 27 *Physics and Chemistry of the Earth* 839.

⁷⁰ Nkhoma and Mulwafu (n 67).

⁷¹ B Chinsinga and M Chasukwa, 'The Green Belt Initiative and Land Grabs in Malawi' (Future Agricultures Consortium, Policy Brief 55. Brighton, UK November 2012) <<http://www.future-agricultures.org/>> accessed 5 March 2020.

4.3 Energy Security Policies

The Government of Malawi has developed a number of strategies in the energy sector, including power sector reform, rural electrification, biomass energy and renewable energy.⁷² The National Energy Policy (NEP) was approved in 2003 under the remit of Department of Energy Affairs (DoEA); as part of the NEP, a Renewable Energy Framework was launched, to bring more coherence to renewable energy developments.⁷³ The Power Sector Reform Strategy (PSRS) approved by the Government of Malawi in 2003, provided for the unbundling of Electricity Supply Corporation of Malawi (ESCOM) and private sector participation via long-term concessions in transmission and distribution and entry of Independent Power Producers (IPPs) for new generation capacity. Consistent with these strategies, a set of legislation was approved by the Parliament in 2004, including the Energy Regulation Act, an Electricity Act, a Liquid Fuels and Gas Act, and a Rural Electrification Act.

As part of the reform process, the Government announced that it intends to revise the electricity market structure and the role of ESCOM in the market (particularly the question of multiple licenses held by ESCOM) by revising the Electricity Laws. To this end, the Government will put in place two enabling policy instruments: (i) a Feed-in-Tariff policy, to cover small hydro, biomass and wind resources and (ii) a Standard Power Purchase Agreement framework, to provide clear guidelines on the scope, duration and operational conditions of an IPP contract. A review of the Malawi FIT policy revealed that there were fundamental challenges with the policy which made it rather difficult to attract independent power producers (IPP) thereby frustrating the policy initiative. The most notable challenge with the policy included its lack of stakeholders' participation during policy development. MERA was alleged to have hired a policy consultant who prepared the policy by copying and pasting the Kenyan FIT policy of 2010 without, making relevant modifications to suit the Malawi socio-economic condition. Other challenges with the policy include: Lack of technical expertise, Policy funding, Low end-user tariff being charged

⁷² (UNDP 2013).

⁷³ International Energy Agency, 'Tracking Clean Energy Progress 2013: IEA Input to the Clean Energy Ministerial' (International Energy Agency Paris. 2013).

by ESCOM utility, Public willingness to pay, Political interference, Grid capacity and Low tariff.⁷⁴

As part of the operationalization of the 2004 energy sector legislation, the Malawi Energy Regulatory Authority (MERA) was formed and the predecessor energy sector regulatory bodies, the National Electricity Council and the Petroleum Control Commission, were dissolved. MERA's role includes inter alia (i) reviewing tariff applications from ESCOM and recommending tariff changes to GoM; (ii) granting licenses for generation and distribution operators; and (iii) arbitrating commercial disputes that arise under the 2004 energy legislation.⁷⁵

The government recognizes that the power sector is a key constraint to Malawi's economic growth. The objective of the MGDS was to reduce the number and duration of blackouts, increase access to reliable and affordable electricity in rural areas and other targeted areas, and improve coordination between the needs for energy for households and those of other high growth sectors such as tourism and mining.⁷⁶

Malawi is heavily reliant on biomass for its cooking energy requirements, especially firewood and charcoal, which account for 95% of national energy requirements for cooking.⁷⁷ The growing demand for charcoal and wood fuel has been a primary factor in the widespread exhaustion of woodlots across Malawi and is thus an increasingly critical development issue in Malawi.⁷⁸ The impacts are multi-sectoral: deforestation is resulting in soil fertility degradation, erosion and river siltation, which in turn undermine subsistence livelihoods, increase flood risks and damage hydro-power infrastructure (World Bank, 2011).⁷⁹

The second MGDS II for the period 2011- 2016 were announced in 2011. In an attempt to minimize the use of biomass fuels the government undertook a number of initiatives: the Program for Biomass Energy Conservation (ProBEC) which promoted the use of clay stoves to save fuel; the Promotion of Alternative Energy Sources

⁷⁴ Isaac Chitedze, 'Analysing Feed-in Tariff Policy to Accelerate Renewable Energy Deployment and Electricity Access in Malawi' (Master Dissertation Submitted in partial fulfilment of the requirements for the Master degree in Energy Policy at Pan-African University Institute for Water and Energy Sciences, 2018).

⁷⁵ (ESCOM 2013).

⁷⁶ (SEI 2011).

⁷⁷ (World Bank, 2011).

⁷⁸ *ibid.*

⁷⁹ *ibid.*

Project (PAESP) in 2007 to promote non-traditional fuels for cooking and heating to reduce environmental degradation; and a National Sustainable and Renewable Energy Programme (NSREP) which promoted renewable energy technologies in Malawi.⁸⁰ The Malawi Rural Electrification Project (MAREP) has also been established with the primary aims of reducing the large unsustainable wood consumption and improving the dependability of imported oil and coal. The Rural Electrification Act of 2004 is the Malawian Act that provides for the promotion, funding, management and regulation of rural electrification in Malawi. It came into force in March 2004.⁸¹

5. ANALYSIS OF THE CURRENT W.E.F. NEXUS STRATEGIES IN MALAWI

In line with the UN-SDGs, the following long term (beyond 2020) measures have been proposed (among others) by the Government of Malawi to address issues of water, energy and food insecurities holistically and in an integrated manner:⁸²

- 1) Increasing agricultural productivity, thereby reducing pressure on forest resources and increasing energy access and associated economic development goals;
- 2) Ensure availability and sustainable management of water and sanitation for all;
- 3) Promoting climate smart agriculture;
- 4) Promoting soil and water conservation technologies;
- 5) Use of improved cook stoves and fuel-switching in the household energy sector. Also, high dependence on traditional biomass, hydropower and rain-fed agriculture increases vulnerability to climate change in Malawi
- 5) Improving access to water and the production of hydro energy
- 6) Establishing synergies between expanded biofuels production and reduction in traditional biomass use to promoting low-carbon pathways while also improving energy access and stimulating agricultural and rural development.

In addition, the Government of Malawi has welcomed the iSDG – a simulation model for the effective implementation of the UN-SDGs. The

⁸⁰ *ibid.*

⁸¹ (Pemba 2013).

⁸² Government of Malawi (n 68).

model demonstrates clear sectoral interlinkages and provides a platform for trade-offs and synergies in implementation of activities in Government Ministries, Departments and Agencies (MDAs). It is also an instrument for policy reviews and a framework or tool which could also facilitate effective alignment and coordination of donor support and interventions. To translate good simulation results to reality, it is important to ensure that an effective framework for operationalization exists.

Although existing policies have been able to increase food production, this has come with huge environmental, social, and economic costs and threatens the long-term sustainability of agriculture and food security as well as achieving the UN-SDGs in Malawi. For example, the Farm Input Subsidy Programme (FISP) in Malawi which was popular for its distribution of inputs (including fertilisers) to resource poor farmers,⁸³ was criticized for its adverse impact on water which could cause eutrophication.⁸⁴ The WEF nexus may have been inferred in the long-term goals of Malawi, but up till now, the strategies to achieve water, energy and food security are still from the platforms of 'silos' as the interdependencies are not given due attention. For instance, it is clear that water and energy have traditionally been interlinked in Malawi through hydropower plants and large multipurpose dams. However, new interactions have emerged between water, energy and agriculture sectors that are yet to be properly understood and explored.⁸⁵ Crop production now increasingly relies on energy consuming groundwater pumps to meet irrigation needs; energy use in pumping and farm operations accounts for a significant source of energy consumption.⁸⁶ This link between energy, irrigation water and agriculture needs to be investigated with improved data collection and policy action. For systems that are expected to function for decades to come, the implications of water and of energy must be evaluated if future water supplies get affected due to

⁸³ A typical FISP beneficiary package comprised four vouchers. Two were used to purchase fertilizer (basal and top dressing) and the other two were used to purchase seed (maize and legume).

⁸⁴ Thea Nielsen et al., *The Food-Energy-Water Security Nexus: Definitions, Policies, and Methods in an Application to Malawi and Mozambique* (IFPRI Discussion Paper 01480 November 2015) <<http://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/129808/filename/130019.pdf>> accessed 4 August 2023.

⁸⁵ (AGWA, 2015).

⁸⁶ FEWS NET, 'Malawi Food Security Outlook Update' (2017) <https://reliefweb.int/sites/reliefweb.int/files/resources/MW_FSOU_2017_12_final.pdf> accessed 4 August 2023.

climate change or face disruptions in flow across national boundaries. Managing each resource separately can lead to decisions that seemingly improve supply in one sector, but in reality, create problems in others. If the linkages are incorporated in policy evaluation, then unintended consequences may be avoided while multiple problems may simultaneously get addressed.⁸⁷

The existing policies and regulatory frameworks were developed without considering the cross-sectoral consequences and advancement as agencies worked in isolation. The current resource utilization and management style is unsustainable because of the siloed approach used in the different sectors.⁸⁸ The lack of coordination and poor inter-sectoral collaborations in Malawi contributes to the unbalanced resource management history of the country. For example, the introduction of the cook-stove in Malawi which uses biomass energy source more efficiently and emits less greenhouse gas are not considered in the water and energy policies as each sector is ignorant of the advancement and challenges of other sectors.⁸⁹ The seeming disconnects between the water, energy and food sectors has resulted in the cross-sectoral externalities being ignored and a failure to take into account social, economic and environmental costs. However, strong engagement among the water-energy-food sectors can improve policy and consequently livelihood.

In light of the foregoing, a policy framework will be proposed for the effective operationalizing of the above long term (WEF) goals in Malawi, projecting that the nexus model will be the most optimized model not only for achieving the goals, but also, can set forth the journey for UN-SDGs.

The framework shown in figure 4 represents the relationship between SDG Malawi Vision 2020 and the WEF Framework.

Enabling conditions for horizontal and vertical policy coherence of the WEF Nexus initiatives post 2020 in Malawi includes institutional

⁸⁷ A Grobicki, 'Water, Food, Energy, Climate: Strengthening the Weak Links in the Nexus' in Felix Dodds & Jamie Bartram (eds.), *The Water, Food, Energy and Climate Nexus: Challenges and an Agenda for Action*. (Routledge 2016) 126.

⁸⁸ Tafadzwanashe Mabhaudhi, 'The Water-Energy-Food Nexus as a Tool to Transform Rural Livelihoods and Well-Being in Southern Africa' (2019) Vol.16 (16) International Journal of Environmental Research and Public Health, 1-20 <<https://doi.org/10.3390/ijerph16162970>>.

⁸⁹ IFPRI, 'The food-energy-water security nexus in Malawi' (26 October 2016) <<https://www.youtube.com/watch?v=CGVMWHXB0TY>> accessed 6 August 2023.

capacity building, political will, change agents and awareness-raising. This can be realized if the nexus is addressed coherently across all scales through multi-level governance.

The framework above has been analysed in the context of “Risk Analysis”, reckoned with. Thus, unless risk is not fully comprehended, the WEF linkages would poorly be understood hence policy making will miss on the “wholeness”. The risk analysis model has been conceptualized and popularized by IRENA.⁹⁰

6. IMPLEMENTING THE NEXUS APPROACH: RECOMMENDATIONS

A review of selected published articles on the WEF nexus clearly indicates that opportunities exist to implement the nexus approach at different scales, that is, at national, regional, and local levels, provided there is recognition of the need, understanding of the extent of interconnections and their consequences, and willingness to reform sectoral policies and strategies toward more integrated and cost-effective planning, decision-making, implementation, monitoring, and evaluation. A nexus approach facilitates better understanding of the complex and dynamic interrelationships. Effective cross-sectoral consultation mechanisms are therefore needed to ensure the development of concerted efforts to address this WEF security issue, and to make sure that decisions are taken as part of an integrated, long-term, and multi-sectoral strategy. The following (adopted) areas of interventions are therefore recommended in order to promote the adoption of a nexus approach in planning and decision making in Malawi:

Involvement of stakeholders to build awareness of and capacity for the interconnected nature of the elements of the WEF nexus, share ways to minimize trade-offs, explore synergies, and suggest actions for changing behaviours with regard to the nexus and other actors whose well-being relies on services and products associated with elements of the nexus. This includes community-level empowerment using core resources to focus on more sustainable consumption.⁹¹

⁹⁰ (International Renewable Energy Agency, 2015).

⁹¹ Mitu Gulati et al., ‘The Water-Energy-Food Security Nexus: Challenges and Opportunities for Food Security in South Africa’ (2013) 1 Aquatic Procedia 150 <<https://doi.org/10.1016/j.aqpro.2013.07.013>>

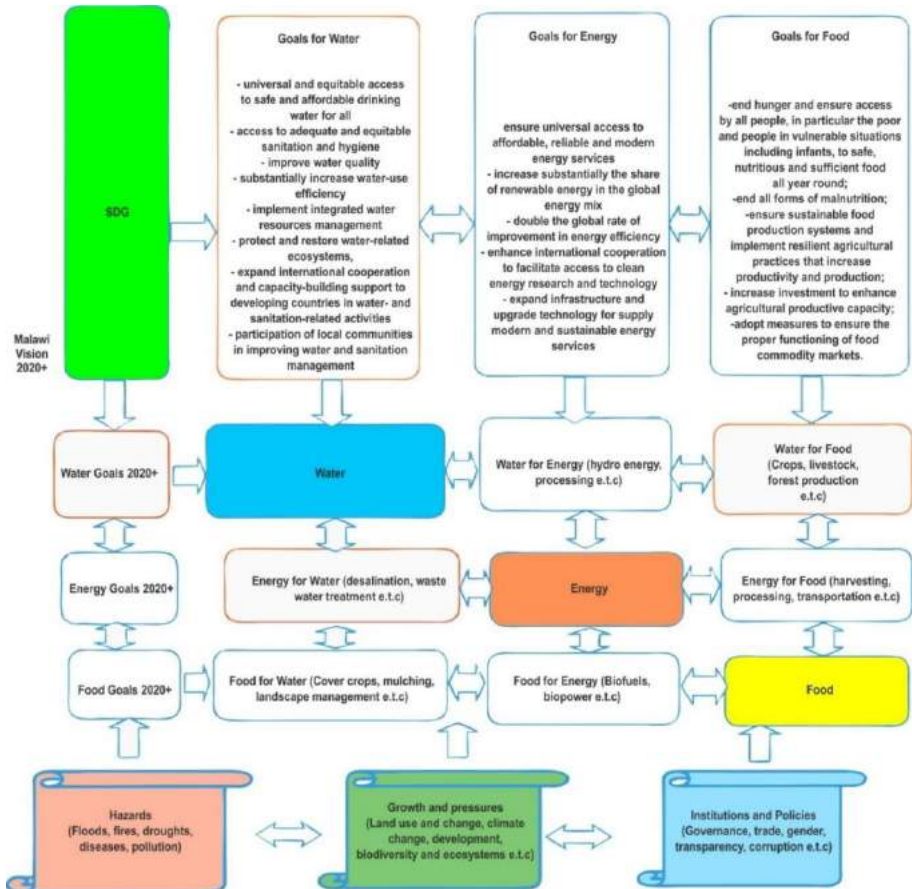


Figure 4: SDG-Malawi Vision 2020+ / WEF Framework

Improvement of policy development, coordination, and harmonization to account for trade-offs and build on the increased interconnectedness of WEF. Part of this process is promoting, identifying, and eliminating contradictory policies.⁹² Despite the strong linkages among Water, Energy and Food, a continuity of approach in the developmental sector (Academia & Practitioners) over the decades, has always been in the “silos”. To maximize WEF in its output from resource perspective, a mechanism of awareness on part of policy makers is very important.

⁹² MituGulati et al., ‘The Water-Energy-Food Security Nexus: Challenges and Opportunities for Food Security in South Africa’ (2013) 1 Aquatic Procedia 150 <<https://doi.org/10.1016/j.aqpro.2013.07.013>> accessed 14 May, 2019; L Nhamo et al., ‘The water-energy-food nexus: Climate risks and opportunities in southern Africa’ (2018) 10 Water 18.

The re-evaluation of agricultural investments after a food crisis is reactionary, for the most part, but it is an impetus for thinking in the interconnectivity of resources and the complexity of linkages of food with energy, land and water. The SDGs will be the first litmus test for the nexus model and the resources linkages in Malawi.⁹³

Governance, integrated and multi-stakeholder resource planning to promote cross-sectoral and cross-departmental approaches to planning and working with stakeholders at different levels to improve public-sector-led governance, planning, and information flows.⁹⁴

Promoting innovation: to identify technological choices and investments exploring WEF synergies and could be implemented to achieve desired changes on the ground. As in many developing countries, policies in Malawi tilt towards ‘Supply’, hardly considering conservation. Conservation can be the key to green economy in future and the resource sustainability can be assured, which is a national and global goal. With the advent of renewable technologies in the energy sector in Malawi as well as the technological adaptation mechanisms in the agriculture sector, such conservation policies can be useful tools in achieving the resources sustainability.⁹⁵

Monitoring, evaluation, and feedback mechanism to appraise functioning of individual systems as per agreed policies and strategies, identify operational changes needed, and provide feedback to steps 2, 3, and 4.

Influencing policies on trade, investment in environment/climate by focusing on improving ecosystem management to increase resource productivity, thus contributing to poverty alleviation and green growth.

Trade, regional integration and foreign policy should be utilized to manage nexus trade-offs more effectively and contribute further to resilience at both state and global levels. This trade in energy will have long term effects on food and water.⁹⁶

⁹³ M Mapak and L Mbewe, *Renewables and Energy for Rural Development in Sub-Saharan Africa*. (Zed Books 2013).

⁹⁴ T Mabhaudhi, ‘Southern Africa’s water–energy nexus: Towards regional integration and development’ (2016) 8 *Water* 235.

⁹⁵ (Chauvin, Mulangu & Proto, 2012); A. Grobicki (n 78).

⁹⁶ J Faurès et al., ‘Reinventing irrigation’, in David Molden (ed.), *Water for food, water for life: A comprehensive assessment of water management in agriculture* (London, Earthscan 2007) 315; S. Naik, ‘Water Crisis in Africa: Myth or Reality’ (2017) 33 (2) *International Journal of Water Resources Development* 326; P. Rios, et al., ‘Explaining Water Pricing Through a Water Security Lens’ (2018) 10 *Water* 1173; (Dodds & Bartram, 2016).

Curbing subsidies in all the resource sectors (Water, Energy and Food) will pave the way for their accessibility. Apart from the fact the subsidies are directly proportionate to the resource it often leads to unintended consequences for other sectors. Thus, a nexus approach is to review, identify and scrutinize the trade-offs in the context of “*At the cost of what?*”⁹⁷

The above policies are imperative. But arguably, the first recommendation contains two key components that would determine the effective implementation of the Malawi WEF nexus: (a) the inclusivity of stakeholders and (b) capacity development.

An effective harmonization of WEF policies and institutions will be a function of deliberate stakeholder mapping and capacity development. Thus, the operationalizing of the Malawi WEF/SDG framework, represented in Figure 4, would depend largely on the strength of the stakeholder mapping and capacity development.

6.1 Inclusivity of Stakeholders

The discussion of the nexus can be reframed for more effective identification and deployment of solutions that address the associated challenges. Business as usual is no longer acceptable: it is necessary to engage new and current stakeholders in novel ways. The nexus challenge needs to be represented as an opportunity for innovation that will drive economic development, business expansion, ecosystem health and social well-being.

This is an opportunity to move stakeholders toward a ‘can-do’ mindset that provides win-win benefits for societies, economies and the environment. A shift in thinking is proposed to accomplish several goals, including:

- Broad stakeholder engagement in developing innovative solutions to address energy–water–food nexus challenges.
- Defining ‘nexus innovation’ in terms of technology, partnerships, funding/financing, and of business, consumption/production models.
- Framing a vision and strategy to effectively address the nexus challenges.

⁹⁷ S Naik, ‘Water Crisis in Africa: Myth or Reality’ (2017) 33 (2) International Journal of Water Resources Development 326; P. Rios, et al., ‘Explaining Water Pricing Through a Water Security Lens’ (2018) 10 Water 1173; (Friere, Lau and Leipziger, 2015).

- Leveraging new governance modalities and exponential technologies to accelerate innovations towards achieving energy–water–food security for all.

Quantitative tools and models can provide a clear understanding of the interconnectedness of the nexus by identifying the trade-offs and the potential synergies involved. These tools and models also serve to identify the challenges and interconnectedness across multiple actors and sectors, for example, in assessing policy coherence, testing the potential of various policy mechanisms, identifying current and future challenges, and offering solutions pertaining to resources planning and implementing impacts of specific technologies and infrastructure at large scale.⁹⁸ The modelling framework provides the opportunity to engage key stakeholders, thereby offering a cross-sectoral understanding of associated challenges and opportunities. Stakeholder participation in the modelling processes contributes to local ownership of these tools. Similarly, decision makers can also be involved, because their interest is more focused on the outcomes, rather than applications, of the tools. Therefore, decision makers can play a prominent role in co-creating model scenarios and interpreting model results.

The joint development and learning which derives from this process, contributes to strengthening dialogue and improving understanding of the issues faced by the various actors. Beyond sector-specific goals, it moves the focus towards the interdependence of resources and production of goods and services in the other sectors. This facilitates the dialogue and helps create a shared agenda, enabling the identification of options for its realization.

The challenges in modelling WEF nexus hotspots are not limited to technical ones. As discussed in the previous section, other challenges may include institutional fragmentation; disincentives within the regulatory, legal and policy frameworks that fail to incentivize cross-sectoral collaboration in planning and investment design; short-term planning horizons, driven, in many cases, by political cycles; lack of the data and short time frames for providing results; and lack of incentives that promote collaboration and identify synergies for improved planning and decision making. Other related challenges may include varying power relations between the different actor groups; the location of

⁹⁸ R Mohtar and B Dahar, 'Water-Energy-Food Nexus Framework for Facilitating Multi-Stakeholder Dialogue' (2016) 41 (5) *Water International* 655 <<https://doi.org/10.1080/02508060.2016.1149759>>.

different actor groups at various levels (local to national); identifying a host institution for the stakeholder interaction process; and the time needed to follow implementation and policy processes in relation to a research project (which may only last a year or two).

Failing to involve stakeholders in the modelling process increases the likelihood that outputs will be neither relevant to nor demanded by the actors they are meant to benefit. Current experience with nexus modelling frameworks results in valuable exercises that begin to identify and illustrate not only the trade-offs that must be made but also the synergies that can be achieved, particularly in budget-constrained environments. These exercises have demonstrated the value of modelling to identify and quantify the trade-offs and synergies of collaboration. These are reflected in better planning frameworks and, more importantly, in understanding the financial gains from joint investment planning and design. Models can provide clear policy guidance to enable maximization of financial, economic, social and environmental benefits across sectors.

6.2 Capacity Development

This section seeks to emphasize the fact that capacity development and building awareness about the interconnected nature of all elements in the nexus, trade-offs in resource use, improved policy development, coordination, and overall governance of the nexus are some of the important elements needed to operationalize the nexus and gain benefit on a sustainable basis at all levels.

Capacity development entails the sustainable creation, utilization and retention of that capacity, in order to reduce poverty, enhance self-reliance, and improve people's lives. Capacity development builds on and harnesses rather than replaces indigenous capacity. It is about promoting learning, boosting empowerment, building social capital, creating enabling environments, integrating cultures, and orienting personal and societal behaviour".⁹⁹

Capacity development is committed to sustainable development for a long- rather than short-term perspective of continual learning and acquiring of skills and resources through individuals' participation and

⁹⁹ Organization for Economic Cooperation and Development, 'Perspectives Note: The Enabling Environment for Capacity Development' January 2011; United Nations Development Programme (UNDP). *Capacity Development: A UNDP Primer* (UNDP, New York 2009).

dedication toward enhancement of organizational and institutional strength in addressing development issues. This clearly indicates that capacity development involves something more than the strengthening of individual skills and abilities. Trained individuals need an appropriate environment, and a proper mix of opportunities and incentives to use their acquired knowledge. The implication is that the capacity development initiatives should be addressed in an integrated manner at three levels: the individual, the institution, and the enabling environment.

Formal education and training provide the basic foundation for knowledge building and capacity development. At the individual level, capacity development refers to the acquisition of knowledge, understanding, skills, and attitudes through formal education or other forms of learning. Although some of the necessary skills can typically be acquired on the job or through learning by doing, one needs to rely more on formal education and training for acquisition of knowledge, understanding, and attitudes. Training can be accomplished through apprenticeships and mentoring, seminars, workshops, classes, or through self-study. Ability to work in a team, capability to approach a complex challenge, and ambition and the drive to keep learning are some of the required skills and attributes the individuals must develop.

The institutional capacity at different levels of the organizations and the enabling environment should be adequate to adapt modern approaches in science, technology, and management, which are essential to deal with the complex challenges in the development sector. As individuals enter into professions, they nurture their knowledge and acquired skills in a collective manner in addressing the management issues within the institutional and organizational framework. Capacity building at the organizational level is therefore needed, focusing on infrastructure and institution building, the availability of resources, and the development of organizational processes that would lead to an efficient and sustainable use of resources. At the systems scale, capacity development seeks to enhance the consistency of sector policies and promote better coordination between organizations of different sectors with the objective of a common goal of sustainable development.

Organizations with the right capacity and procedures still need an enabling environment to implement legal and regulatory frameworks for development and management. Finally, knowledge and understanding at the society level is imperative through different means of awareness rising on the broader perspective of sustainable development.

Developing educational programs across disciplines is a challenging task. Providing a broader understanding across disciplines is desirable, and will produce graduates who understand issues, but not experts to carry out research and implement programs. To strike a balance between a broad overview of education and the specialization required, a nexus academic programme should comprise three components that provide the following: (i) a broad holistic viewpoint, through overview courses; (ii) a deep understanding of a particular field through specialized courses; and (iii) a set of courses to provide the skills needed to implement research, through competency courses. This should be followed by a field-scale research on specific problems. A new mode of transdisciplinary, problem-and-solution-oriented education and research is to be adopted on top of the traditional academic research that seeks the involvement of a wider set of institutions and types of researchers to work together on specific problems within specific contexts. Research should not be exclusively based in universities but should be conducted on site together with the implementing agencies, user communities, and professional bodies. The objective of this arrangement is to bring in the local knowledge and perception into the process and the whole exercise pursued in an interactive manner with active participation of all stakeholders. The field-scale research, in this sense, can be envisioned to seek solutions based on different models that link environment, society, and economy. A set of feasible solutions for a given problem is obtained through environmental analyses. A subset of those solutions is then identified which also satisfies economic constraints, and finally solutions that meet social acceptance are selected for implementation. The analysis of each structured case will enable policymakers, scientists, and community representatives to negotiate constraints and benefits while making a science-based selection.

7. CONCLUSION

Malawi is facing growing challenges in meeting the growing demand for food, water, and energy in the face of competing demand for resources and increasing environmental pressure. To increase cereal production, it has introduced many policy initiatives including providing incentives through subsidizing water and energy and guaranteeing prices. While such incentives have helped increase cereal

production, they have also increased the demand for water and energy, led to degradation of the resource base, and contributed to an increase in water-related disease. Although the food, water, and energy sectors are inherently interconnected, the connection in terms of policy and implementation is weak.

The paper has proposed an integrated framework that would facilitate synergies and trade - offs while exploring the nexus approach in Malawi. The key elements of the framework are strengthening cross-sectoral coordination, harmonizing public policies, aligning cross-sectoral strategies and incentive structures, strengthening regulation, and facilitation of nexus smart investment and technologies. Critically, the research demonstrates that in addition to proper stakeholder mapping and consultation, capacity development and building awareness about the interconnected nature of all elements in the nexus, trade-offs needed in resource use, improved policy development, coordination, and overall governance of the nexus are some of the important elements needed to operationalize the nexus and gain benefit on a sustainable basis at all levels. Capacity development is committed to sustainable development of a long- rather than short-term perspective of continual learning and acquiring of skills and resources through individuals' participation and dedication toward enhancement of organizational and institutional strength in addressing development issues. Thus, a new mode of transdisciplinary, problem-and-solution-oriented education and research is to be adopted on top of the traditional academic research that seeks the involvement of a wider set of institutions and types of researchers to work together on specific problems within specific contexts.

It is strongly recommended that the National Institutions of Higher Learning in Malawi collectively take initiative in developing a structured curriculum for postgraduate degree in sustainability science across traditional disciplines of science and engineering. This endeavour is highly important as the country is in need of extending specialization in different disciplines. Field-scale research, indicated as an important component of transdisciplinary education and research, is to be conducted in a "shared vision planning and analysis" mode. Such mode shall incorporate tried-and-true planning principles, technical analysis, and public participation into a practical forum for making resource management decisions that will be capable of addressing the identified issues and concerns.

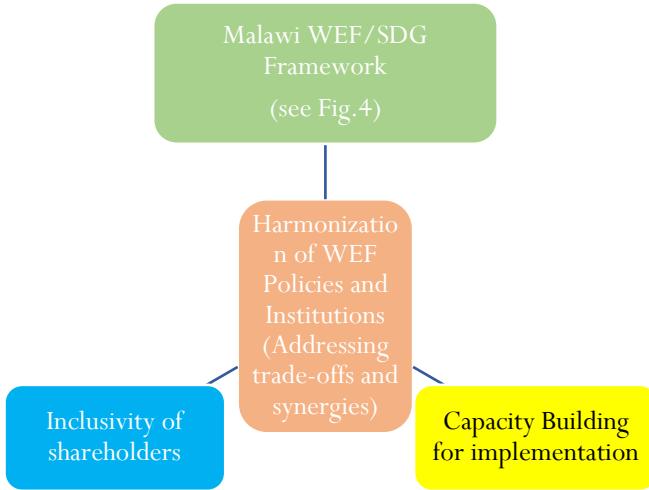


Figure 5: The Influence of Inclusivity and Capacity Development on the Malawi WEF/SDG Framework.

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More energy is encapsulated in
every drop of good spring water
than an average-sized PowerStation
is presently able to produce.

— *Viktor Schauburger* —

The Role of Energy Directives in Ensuring EU Energy Security and the Problems of Implementation in Ukrainian Legislation

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ABSTRACT

This chapter aims to analyze the role of energy directives in ensuring energy security of the European Union, and to assess the current state of their implementation in the legislation of Ukraine in accordance with the Treaty establishing the Energy Community and the Association Agreement with the EU. The development of legal security of energy sphere in the EU from the Treaty of Paris on the European Coal and Steel Community to the fourth energy package, which allowed to provide the development of competition among producers and suppliers of energy resources, to provide equal access to the energy distribution and gas-distribution networks, to liberalize the energy sector and energy resources, to increase the use of green energy, to reduce emissions into the atmosphere, and to raise the level of energy security in Ukraine. In this chapter, the authors systematically analyze the implementation process of EU Energy Directives in the Ukrainian legislation using legal methods. They focus specifically on the Law "On Natural Gas Market", the Law "On Electricity Market", the Law "On Energy Efficiency",

the Law "On Energy Land and Legal Regime of Special Zones of Energy Facilities", and the Energy Strategy of Ukraine till 2035 "Security, Energy Efficiency, Competitiveness".

Keywords: Energy security; EU energy directives; Energy packages; Energy legislation; Environmental security

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1. INTRODUCTION

Energy security of the State is a key factor in the development of the economy and the pledge to ensure favourable conditions for society. However, today the level of energy security in Ukraine is far from optimal, as evidenced by the constant growth of tariffs for energy resources compared to the falling level of incomes of citizens, monopolization of the energy sector and significant dependence on the imported energy resources¹. The energy sector has significantly weakened due to the Russian war in Ukraine, resulting in significant impediments to the functioning of the energy system. In addition, the global fuel and energy crisis is gaining momentum, which has caused a global shortage of natural gas and a fivefold increase in its price in the fall of 2021. The global energy crisis is deepening. At first, there was not enough gas, and now there was not enough oil. This situation determines the need to improve energy efficiency and the search for new mechanisms to ensure energy security of the State. To date, among the energy import-dependent countries, this is most effectively achieved by the EU members who adhere to a common energy policy and are governed by imperative and binding energy directives².

Ukraine, choosing the path of European integration, joined the Energy Community of Europe and signed the Association Agreement with the EU, undertook to implement a number of the EU Directives³, in particular energy directives designed to improve energy and environmental security, to bring energy legislation and the energy sector itself closer to European standards, to create common energy markets. To date, Ukraine has implemented the second, and is in the process of implementation of the third, energy package, but the situation in the energy sector is not changing for the better, making it necessary to study its implementation. To this end, it is necessary to analyze the experience of legal provision of EU energy security, the

¹ Hrabinsky, I., & Krychkovsky, T.O., 'Political and economic problems of Ukraine's energy independence' (2016) Bulletin of Lviv University Series "International Relations" 39.

² Khalova, G. O., Yordanov, S. G., & Polaeva, G. B., 'Evolution of EU Energy Policy' (2018) 5 Innovation and Investment 97-101.

³ Pavlyuk, S. & Khorolskyi, R., 'Cooperation between Ukraine and the European Union in the sphere of energy efficiency' (2015), <<https://parlament.org.ua/wp-content/uploads/2018/03/2.pdf>>.

energy directives⁴ and peculiarities of its implementation in the domestic legal framework.

The goal of this chapter is an attempt to analyze the role of energy directives in ensuring energy security of the European Union, as well as to analyze the current state of its implementation in the legislation of Ukraine in accordance with the Treaty establishing the Energy Community and the Association Agreement with the EU.

2. LITERATURE REVIEW

Various aspects of the energy security of European Union and its development in the European Union have been examined by several scholars. Scheepers et al. (2007)⁵ in their research “EU standards for energy security of supply” studied an instrument to assist the EU and its Member States in shaping and adapting their energy policies with a view to supply security. It could be particularly useful in the context of the Strategic EU Energy Review, as proposed by the European Commission in its 2006 Green Paper on EU energy policy⁶.

Matsumoto et al. (2018)⁷ applied time-series clustering approaches and three energy security indicators based on the Shannon–Wiener Diversity Index (Shannon, 1948)⁸. The aim was to enhance understanding of how energy security of EU countries, in terms of energy supply, has evolved. An overall improvement in energy security in most EU countries between 1978 and 2014 was identified, with Denmark and the Czech Republic evidencing the greatest improvements. The main driver of improvement has been the diversification of primary energy sources.

⁴ Kuloesi, K., & Muñoz, M., 'Environmental integration and multi-faceted international dimensions of EU law: Unpacking the EU's 2009 climate and energy package' (2011) 48 (3) Common Market Law Review. <<https://kluwerlawonline.com/journalarticle/Common+Market+Law+Review/48.3/COLA2011034>> accessed 22 January 2024.

⁵ Scheepers, M., Seebregts, A., de Jong, J., & Maters, H., 'EU standards for energy security of supply' (2007) 52 Gas 86.

⁶ Commission of the European Communities, 'GREEN PAPER A European Strategy for Sustainable, Competitive and Secure Energy' (COM 2006) 105 final, Brussels, 8.3.2006) {SEC(2006) 317}.

⁷ Matsumoto, K. I., Doumpos, M., & Andriosopoulos, K., 'Historical energy security performance in EU countries' (2018) 82 Renewable and Sustainable Energy Reviews 1737–1748 <<https://doi.org/10.1016/j.rser.2017.06.058>>.

⁸ Shannon, C. E., 'A Mathematical Theory of Communication' (1948) 27 The Bell System Technical Journal 379–423, 623–656.

Gracceva and Zeniewski (2014)⁹ present a novel framework to assess energy security and applied it to develop a comprehensive approach to the interactions between climate change policies and energy security. The impact of a low-carbon scenario on one of these five properties (long-term robustness) will be assessed using a complex multi-regional energy system model. The results of their research demonstrate how this scenario induces structural changes along the whole energy supply chain, revealing dynamic vulnerabilities and trade-offs that are not adequately accounted for by existing indicator-based assessments.

Haas et al. (2011)¹⁰ attempted to elaborate historically implemented promotion strategies of renewable energy sources and the associated deployment within the European electricity market. Therefore, initially the historic development of renewable energy sources in the electricity (RES-E) sector is addressed on Member State and on sectoral level as well as consequently discussed based on available RES-E potentials and costs.

Talus (2017)¹¹ in his research illustrates the change in the EU's approach from markets and market mechanisms to increasingly intrusive public sector control. Not only is the public sector deciding what to invest in, but it is also increasingly involved in determining which commercial projects should proceed and which should not. Instead of markets being driven by commercial logic, the motivations behind cross-border natural gas projects are often political in nature. This is not in itself uncommon since energy and politics have always been closely connected at global level. However, it conflicts with the EU's policies in this area, which are based on liberal market thinking.

⁹ Gracceva, F., & Zeniewski, P., 'A systemic approach to assessing energy security in a low-carbon EU energy system' (2014) 123 *Applied Energy* 335-348 <<https://doi.org/10.1016/j.apenergy.2013.12.018>>.

¹⁰ Haas, R., Panzer, C., Resch, G., Ragwitz, M., Reece, G., & Held, A., 'A historical review of promotion strategies for electricity from renewable energy sources in EU countries' (2011) 15(2) *Renewable and Sustainable Energy Reviews* 1003-1034 <<https://doi.org/10.1016/j.rser.2010.11.015>>.

¹¹ Talus, K., 'Decades of EU energy policy: towards politically driven markets' (2017) 10(5) *The Journal of World Energy Law & Business* 380-388.

Jonsson et al. (2015)¹² examine and outline a comprehensive suite of energy security aspects to be considered when assessing low-carbon energy scenarios and apply it using the EU Energy Roadmap as an example. Availability and affordability issues as well as security of demand matters and geopolitical security aspects are identified and discussed. External factors, e.g., future international climate treaties and international relations, are important for some energy security outcomes. A broader framing of energy security together with structured assessments on the security implications of energy transitions would benefit future EU energy policy.

At the same time, issues related to the implementation of the legal regulation of EU energy security in the legislation of Ukraine, in accordance with the Association Agreement between Ukraine and the EU, have not been studied and presented in sufficient detail.

3. LEGAL PROVISION OF ENERGY SECURITY IN THE EU AND ENERGY PACKAGES

For the EU, ensuring energy security is particularly important factor in economic development, and the import dependence on energy resources¹³ pose the challenge of establishing a stable supply of hydrocarbons in sufficient quantity and quality. Although ensuring energy security is the task of each individual EU State, given the presence of State sovereignty¹⁴, in the context of the unification of European energy markets, certain geopolitical aspects (storage, transit and substitution), complicate the management of energy security at the local level and bring it to the super-state level of the EU.

The prototype of the European Union was the union of coal and steel, between France, Germany, Italy, Belgium, the Netherlands and Luxembourg from 1952 (European Parliament, 1951)¹⁵, which made it

¹² Jonsson, D. K., Johansson, B., Månsson, A., Nilsson, L. J., Nilsson, M., & Sonnsjö, H., 'Energy security matters in the EU Energy Roadmap' (2015) 6 Energy Strategy Reviews 48-56. <<https://doi.org/10.1016/j.esr.2015.03.002>>.

¹³ According to Eurostat data, the share of energy resources imported by the EU is more than 70% EU imports of energy products - recent developments. Statistics Explained – 2019.

¹⁴ Lipková, E., Európska únia (Sprint dva 2011) ISBN 978-80- 89393-33-6.

¹⁵ European Parliament, 'The Treaty establishing the European Coal and Steel Community (ECSC)' (1951). <<https://www.europarl.europa.eu/about-parliament/en/in-the-past/the-parliament-and-the-treaties/treaty-of-paris>> accessed 22 January 2024.

possible to unite these States into an energy and economic European interstate association. The basis of this union was to create conditions for the free production and movement of products of the coal and metallurgical industries, thanks to the implementation of which it was possible to create a stable and solid foundation in such important sectors of the economy as energy and metallurgy¹⁶.

Later, the energy sector further increased its role in the new international institution, so in 1957, as part of the signing of the Treaty of Rome, the Treaty on the Establishment of the European Atomic Energy Community was signed. It regulated the integration of European countries in the field of the peaceful use of nuclear energy, which was seen by all European countries as an important and promising tool for solving the energy problem in Western Europe. Thus, it was planned to relieve the severity of the energy crisis, which primarily affected small Western European countries. However, the most significant event was the adoption by the European Commission of Directive 96/92 (European Parliament, 1996)¹⁷ and Directive 98/30/EC (European Parliament, 1998)¹⁸. The first directive established the key principles of competition among producers and suppliers of electric power. The main goal of the directive was to ensure 35% of the annual electricity supply in the open market, the separation of electricity monopolies. The other established general rules for transportation, storage, distribution and consumption of natural gas, and particular aspects of the organization of the gas market. This marked the beginning of the creation of a single European liberalized electricity and gas markets, as well as the reform of the energy sector.

These directives formed the so-called First Energy Package. The EU Energy Package is a comprehensive set of legal acts aimed at responding to global and European climate change and energy challenges and integrating climate change considerations into a range of sectors and policies¹⁹.

¹⁶ Khalova, G. O., Yordanov, S. G., & Polaeva, G. B., 'Evolution of EU Energy Policy' (2018) 5 Innovation and Investment 97-101.

¹⁷ European Parliament, Directive 96/92/EC of the European Parliament and of the Council of 19 December 1996 concerning common rules for the internal market in electricity, Official Journal of the European Communities, 50, 20-29.

¹⁸ European Parliament, Directive 98/30/EC of the European Parliament and of the Council of 22 June 1998 concerning common rules for the internal market in natural gas, Official Journal L 204, 21/07/1998, 0001 – 0012.

¹⁹ Kulovesi, K., & Muñoz, M., 'Environmental integration and multi-faceted international dimensions of EU law: Unpacking the EU's 2009 climate and energy

The next step was the adoption of the Second Energy Package. It consisted of electric (2003/54/EC) and gas (2003/55/EC) (European Parliament, 2003)^{20,21} directives, which were aimed at introducing equal access to the electricity and gas networks, developing competition, and liberalizing of the energy sector. The main goal was to create conditions for the development of fair competition in the European energy sector. In particular, this package formulated the requirements for the necessity of vertically integrated companies. In practice, this meant that, for example, in the natural gas sector the activities of companies transporting gas must be separated from the activities of gas production and distribution. At the same time, this approach did not include "ownership subsidy". The package established two different specific timeframes for liberalization of electricity and gas sales on the retail markets, namely the beginning of 2004 for industrial consumers and the beginning of 2007 for private households²².

However, scientists note that the implementation of the directives of the Second Energy Package has shown a lack of effectiveness, which was reflected in a high degree of monopolization in the energy sector by most of the EU member States. It was impossible to fulfill the requirement of a complete transfer of energy through the cordons of one EU member State to another. The energy markets of the member States were very weakly integrated, their functioning was not transparent, etc.²³

It should be noted that upon the adoption of the UN Framework Convention on Climate Change and the Kyoto Protocol, which aimed

package' (2011) 48(3) Common Market Law Review. Available at: <https://kluwerlawonline.com/journalarticle/Common+Market+Law+Review/48.3/COLA2011034>.

²⁰ European Parliament, Directive 2003/54/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in electricity and repealing Directive 96/92/EC Statements made with regard to decommissioning and waste management activities, Official Journal L 176, 15.7.2003, 37–56.

²¹ European Parliament, Directive 2003/55/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in natural gas and repealing Directive 98/30/EC, Official Journal L 176, 15.7.2003, 57–78.

²² Pavlyuk, S. & Khorolskyi, R., 'Cooperation between Ukraine and the European Union in the sphere of energy efficiency' (2015). <<https://parlament.org.ua/wp-content/uploads/2018/03/2.pdf>> accessed 22 January 2024.

²³ Khalova, G. O., Yordanov, S. G., & Polaeva, G. B., 'Evolution of EU Energy Policy' (2018) 5 Innovation and Investment 97-101.

to limit the release of CO₂ into the atmosphere, certain considerations should be mentioned. The two Energy Packages did not focus on this issue, which weakened the EU's position in the fight against the release of carbon dioxide. That is why, the European Council adopted the so-called "20-20-20" program without regard to certain difficulties in the implementation of the Second Energy Package. It stipulated 20% reduction of carbon dioxide emissions, 20% reduction of energy consumption within the EU and 20% replacement of the existing energy sources with renewable sources.²⁴ The Third Energy Package was developed to implement this program. It should be noted that the last one had some promising ideas for the parties, including the possibility of choosing the method of distribution of production, production and transportation, namely a full or partial division of ownership in the form of independent transport operator, and independent system operator.²⁵ Therefore, a special feature of the Third Energy Package was the prohibition of companies to sell and transport gas and electricity. At the same time, monopoly companies were asked to sell the transport networks or give their management to an independent operator. In addition, the documents clearly provide for guarantees of third-party access to gas transportation capacity.

The EU approved the 'Clean Energy for All Europeans' energy package in 2019. It comprises eight international documents outlining requirements for both local and pan-European energy markets organization. These are documents such as: Renewable Energy Sources Directive updated (EU) 2018/2001; Directive on the Energy Efficiency of Buildings (EU) 2018/844; Energy Efficiency Directive updated (EU) 2018/2002; Regulation on the Management of the Energy Union and Climatic Measures (EU) 2018/1999; Directive on General Rules for the Internal Market of Electricity (EU) 2019/944; Regulation on the Internal Market of Electricity (EU) 2019/943; Regulation on Preparedness for Risks in the Electricity Sector (EU) 2019/941; Regulation on the Establishment of the European Union Agency for Cooperation between Energy Regulators (EU) 2019/942. It is expected that their implementation will help accelerate and facilitate the EU's transition to

²⁴ European Commission, '2020 climate & energy package' (2009). Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=LEGISSUM:2001_8.

²⁵ European Commission, 'Questions and Answers on the third legislative package for an internal EU gas and electricity market' (2011) MEMO/11/125 Brussels, 2 March 2011.

renewable energy sources by promoting investment in renewable energy infrastructure and fostering innovation in the energy sector.

The formation of this legislative package represents a crucial stage in implementing the Energy Union Creation Strategy. The aim of the 4th Energy Package, 'Clean Energy for All Europeans,' is to facilitate the transition from conventional fuels to more environmentally friendly energy sources and to fulfill the EU's obligations under the Paris Agreement on Reducing Greenhouse Gas Emissions.

In conclusion, the development of legal frameworks in the EU's energy sector has progressed steadily over the past 70 years, transitioning from purely economic objectives to ensuring comprehensive energy security. Energy Directives that make up the energy packages allowed to maximize the level of energy security, ensured the development of competition among producers and suppliers of energy resources, provided equal access to energy and gas and water supply networks, liberalize the energy sector, introduce diversification of energy resources and their suppliers, increase the use of green energy, reduce the level of emissions into the atmosphere, improve energy efficiency, enhance the role of the consumer and energy security in general.

4. IMPLEMENTATION OF ENERGY PACKAGES IN THE UKRAINIAN LEGISLATION

Ukraine became a full member of the Energy Partnership on February 1, 2011 and has undertaken the obligation to implement into the national legislation the main acts of the EU energy legislation.²⁶ Ukraine's accession to the Energy Partnership offered opportunities and instruments for structural reforms in the energy sector. Implementation of European norms and standards - the *Acquis Communautaire* (the roadmap outlining the key elements of EU energy legislation) in the energy sector, as well as in the environmental protection sector, enables our country to progressively implement economic restructuring and pursue sustainable development.

²⁶ Parliament of Ukraine, Law of Ukraine "On Ukraine's Accession to the Treaty on the Establishment of the Energy Partnership", Verkhovna Rada of Ukraine, No. 2787-VI. <https://zakon.rada.gov.ua/laws/show/994_a27#Text> accessed 22 January 2024.

The process of implementation of energy packages in Ukraine is at its beginning. In recent years, Ukraine has shown a strong willingness to cooperate with the European Union on energy security issues, albeit within the economic and political spheres. The adaptation of legal regulations in the energy sector is currently fragmented and unsystematic, which, as a result, undermines the overall goals. This assertion is confirmed by a number of regulatory acts adopted by the Ukrainian Parliament aiming at reforming the energy sector. Thus, the adoption of the Law of Ukraine "On the Natural Gas Market"²⁷ declared implementation of the requirements of the EU Third Energy Package (Directive 2009/73/EC "On Compliance with the Internal Market of Natural Gas" and EU Regulation 715/2009 "On the Conditions of Access to the Natural Gas Transport") within the limits of the agreement signed by Ukraine on establishment of the Energy Partnership and envisages pursuit of liberalization and reform of the natural gas market and elimination of the single large-scale player of recent years, NAK Naftogaz of Ukraine PJSC, which produced oil and gas, their processing, transportation and storage, etc. on a single basis. The said law introduced the creation of a new model of the natural gas market aimed at ensuring fair competition and effective protection of rights and interests of all gas market participants, regardless of the form of ownership. However, to date, it cannot be said that its provisions have been fully implemented. Affiliated companies and partners, such as Ukrtransgas PJSC and Ukrgazvydobuvannya PJSC, continue to participate in tenders for production, processing, and other energy resource-related activities, alongside the aforementioned monopoly companies. Therefore, the expected result in the form of demopolization was not achieved.

Within the framework of the Third Energy Package of the EU, the Ukrainian Parliament adopted the Law "On Electricity Market".²⁸ This law introduced the possibility of selecting a supplier of energy services, promoting competition, and reducing prices for electricity buyers starting from 2019. However, the implementation of this law faces obstacles due to general and subjective reasons. These include irregularities in

²⁷ Parliament of Ukraine, Law of Ukraine "On the Natural Gas Market", Verkhovna Rada of Ukraine, No. 27. <<https://zakon.rada.gov.ua/laws/show/329-19>> accessed 22 January 2024.

²⁸ Parliament of Ukraine, Law of Ukraine "On the electricity market", Verkhovna Rada of Ukraine, No. 2019-VIII. <<https://zakon.rada.gov.ua/laws/show/2019-19#Text>> accessed 22 January 2024.

regulating parallel markets, generating capacities, and the accumulation of charges. Furthermore, there are challenges related to detailed regulatory and technical infrastructure. Considering these and other reasons, the Representation of the European Union and the European Bank for Reconstruction and Development recommended suspending the implementation of the new market of electric power in Ukraine.²⁹

Moreover, the New Energy Strategy of Ukraine for the period up to 2035, titled "Security, Energy Efficiency, Competitiveness," was developed in accordance with the aforementioned laws. This strategy aims to strengthen the development of renewable energy, particularly by increasing the use of "green energy" and promoting the adoption of a green tariff among the population and enterprises. With the purpose of stimulating the development of renewable energy, the Law of Ukraine "On Amendments to Some Laws of Ukraine on Ensuring Competitive Conditions for Production of Electricity from Alternative Energy Sources" was passed. "The "green" tariff is linked to the euro exchange rate; the "green" tariff for electricity from biomass and biogas was reduced by 10%; the requirements for local storage were lowered by 5% and 10% for the use of equipment of Ukrainian production at the level of 30% and 50%; introduction of "green" tariff for geothermal power plants, for solar and hydroelectric power plants of private households up to 30 kW of capacity.³⁰

Additionally, starting from June 1, 2019, the Law of Ukraine "On Amendments to the Tax Code of Ukraine and Certain Other Legislative Acts of Ukraine" came into effect. The Law of Ukraine "On Amendments to the Tax Code of Ukraine and Certain Other Legislative Acts of Ukraine for Improvement of Administration and Review of Rates of Certain Taxes and Levies" took legal effect on December 1, 2019, which contains the main provisions intended to contribute to the development of the renewed energy sector. The following contexts are worth mentioning:

- the Tax Code of Ukraine stipulates that up to March 31, 2022 operations with import to the customs territory of Ukraine of

²⁹ Parliament of Ukraine, Law of Ukraine "On the electricity market", Verkhovna Rada of Ukraine, No. 2019-VIII. <<https://zakon.rada.gov.ua/laws/show/2019-19#Text>> accessed 22 January 2024.

³⁰ Parliament of Ukraine, Law of Ukraine "On Amendments to Certain Laws of Ukraine on Ensuring Competitive Conditions for Production of Electricity from Alternative Energy Sources", Verkhovna Rada of Ukraine, No. 514-VIII. <<https://zakon.rada.gov.ua/laws/show/514-19?lang=en>> accessed 22 January 2024.

the following goods shall be exempt from taxation for value added tax: combined cycle power plants, photovoltaic panels, inverters and transformers of suitable capacities³¹;

- the Law of Ukraine "On Energy Land and the Legal Regime of Special Zones of Energy Facilities" contains a provision according to which industry, transport, communications, energy, defense and other purposes can be developed on the land by alternative energy facilities that use renewable energy sources regardless of the purpose of such land plots³². These measures have contributed to a rapid growth of green energy production, which has in turn affected overall energy production. Given the circumstances, the state, represented by the state company "Guaranteed Buyer," is obliged to purchase green energy at the fixed "green" tariff, which is one of the highest in Europe today.³³

Most producers of solar energy receive, according to the law, 4.25 hryvnia (UAH) per kilowatt, when they produce hydrogen energy at 3-3.5 hryvnia (UAH). These rates are significantly higher than those for 'thermal' (1.20 hryvnia per kW) and 'nuclear' (0.67 hryvnia per kW) energy. The consumers pay (without taking into account taxes and charges) only 0.25 hryvnia per kilowatt and industrial enterprises pay 1.25 hryvnias per kW. Low tariffs for the population were maintained for a long time through the sale of nuclear energy to industrial enterprises. However, due to the rapid development of renewable energy, this system ceased to work. There is a catastrophic lack of funds for subsidies. The State enterprise, "Guaranteed Buyer", is a *de facto* bankrupt³⁴ and, by the end of January 2021, the company had already collected over 25 billion hryvnias (UAH) from the "green" sector.³⁵

³¹ Parliament of Ukraine, Law of Ukraine "Tax Code of Ukraine", Verkhovna Rada of Ukraine, No. 2755-VI. <<https://zakon.rada.gov.ua/laws/show/2755-17>> accessed 22 January 2024.

³² Parliament of Ukraine, Law of Ukraine "On Energy Land and Legal Regime of Special Zones of Energy Objects", Verkhovna Rada of Ukraine, No. 2480-VI. <<https://zakon.rada.gov.ua/laws/show/2480-17#Text>> accessed 22 January 2024.

³³ Drapak, M. 'Current tariffs to support green energy are inadequately high' (2018). <<http://texty.org.ua/pg/article/editorial/read/84623/>> accessed 22 January 2024.

³⁴ Thaize, Y., 'A market that does not work: who in Ukraine will pay for "green" energy?' Deutsche Welle (2020). <<https://p.dw.com/p/3cBEx>> accessed 22 January 2024.

³⁵ Finbalance, "Green" tariff: debts of "Harpok" and "Ukrenergo" increased to UAH 25.1 billion, Prantmedia. <<https://finbalance.com.ua/news/zeleniy-tarif-borhi-harpoka-y-ukrenerho-zbilshilisya-do-187-mlrd-hrn>> accessed 22 January 2024.

Thus, we can conclude that the transition to green energy has been very rapid. This transition is affecting the State budget of Ukraine in the conditions of permanent economic instability. In the current situation, rapid transition to alternative and renewable sources of energy is only feasible for economically developed countries. The functioning of large power plants from renewable energy sources is characterized by sharply changed modes of operation in the structure of the United Energy System of Ukraine. This leads to additional costs for the dispatching of power plants and maintenance of reserve capacities to regulate the operation of wind and solar power plants.

We should also pay attention to the absence of an important State policy of deregulation in the energy sphere, i.e. reduction of the State influence on the energy sector of Ukraine. The adoption of the Law of Ukraine "On the National Commission, which carries out state regulation in the fields of energy and public services" (2016)³⁶ meant the continuation of the course on State management of the energy sector. However, in our opinion, this approach does not align with European standards. The declared aim of adoption of the mentioned act is elimination of monopolies and State regulation of activities of the Ukrainian energy market participants. But, obviously, in the opinion of the lawmakers the State should manage the energy sector without any intermediaries. The law determines the legal status of the State regulator in the field of energy and communal services, which performs regulation, monitoring and control over the activities of State actors in the field of energy and communal services. Thus, the State, using an imperative influence, regulates the energy sector by creating the same conditions for all entities of the energy sphere and reducing the impact on price formation. In our opinion, the State should create transparent conditions and the same rules for all players in the energy market, thus reducing its own influence on the market of energy resources.

Recently, the Law "On Energy Efficiency" was adopted, which is an important step towards the implementation of the third energy package, namely the European Union Directive 2012/27/EC "On Energy Efficiency". The law stipulates that the development of national and local plans for energy efficiency. In addition, monitoring of the

³⁶ Parliament of Ukraine, Law of Ukraine "On the National Commission, which carries out state regulation in the fields of energy and public services", Verkhovna Rada of Ukraine, No. 51. <<https://zakon.rada.gov.ua/laws/show/1540-19>> accessed 22 January 2024.

National Plan's implementation will be introduced. Anyone interested will have access to the official results of this monitoring. Establishment of an energy management system in cities and State authorities, i.e. special units and specialists to perform energy monitoring of buildings, detection and solution of energy efficiency problems, etc., purchase and lease at public expense of only energy efficient equipment and premises, require modernization of equipment and measures by energy supplying companies, and create an open online platform on energy efficiency. The law also establishes how much energy consumption is to be reduced in the short term.

The law emphasizes the importance of medium- and long-term planning for energy efficiency measures. Thus, the Ministry of Development of Communities and Territories of Ukraine has to develop a long-term strategy for thermal modernization of buildings, which can positively affect not only the preservation of costs, which are lost for a long time together with the lost heat, but also to improve the condition of the natural environment.

However, this law potentially has a number of shortcomings. A number of provisions of the law are declarative in nature, it is necessary to adopt a large number (nearly 50) of secondary legislation and regulations concerning strategies, national action plans, municipal energy plans, and reports on the potential of energy efficiency of energy supplying companies over a one-year period, without which the law will remain a declaration of positive intentions. The responsibility for the issues of energy efficiency, in general, and energy efficiency between the Ministry of Energy and the Ministry for Communities and Territories Development of Ukraine are rather abstractly divided, which will not contribute to achieving the goal of improving energy efficiency. Moreover, implementation of provisions of the law requires obtaining funds, in particular, for creation of the energy management system, implementation of energy plans of cities, energy audits, etc.

5. CONCLUSIONS

Over the past 70 years, the European Union has steadily developed its legal framework for ensuring energy security, transitioning from purely economic goals of energy self-sufficiency to encompassing energy and environmental security concerns. The adoption of energy packages has played a crucial role in this process, preventing

monopolization of the energy sector, fostering competition among producers and suppliers, ensuring equal access to energy networks, empowering consumers, liberalizing the sector, and promoting the use of renewable energy sources. However, the implementation of EU energy directives in Ukraine has been fragmented and unsystematic, lacking clear economic assessments and failing to achieve the overarching goal of enhancing Ukraine's energy security.

Legislation such as the Law of Ukraine "On the Natural Gas Market" and the Law "On the Electricity Market" have not effectively addressed issues of monopolization and regulatory irregularities, contributing to ongoing challenges in the energy sector. The rapid transition to green energy, coupled with its high cost and the country's economic crisis, has strained Ukraine's state budget and led to operational challenges in its energy infrastructure. The recent enactment of the Law of Ukraine "On Energy Efficiency" is a positive step towards improving energy security, but without sufficient funding and trained specialists, its impact may remain largely declarative.

Addressing these challenges will require comprehensive reforms, adequate funding, and investment in training programs to build capacity in energy efficiency and renewable energy technologies. By prioritizing these initiatives and aligning with European standards, Ukraine can enhance its energy security and contribute to a more sustainable energy future.

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In North America and Western
Europe, ten percent of the
population of the world consumes
fifty percent of its energy.

— *Yehuda Levi* —

Ukrainian Reform of State Power Decentralization as a Way to Sustainable Development: Ecological and Legal Aspects

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ABSTRACT

The strategic vision of sustainable development for Ukraine is based on ensuring national interests and accomplishing international commitments proceeding to sustainable development. Sustainable development involves decentralization and implementation of regional policy, which is based on a harmonious combination of national and regional interests regarding ecology. This article aims to identify and analyze environmental and legal components of the decentralization of power in Ukraine as a means to sustainable development provisions. The main focus of ecological decentralization is placed on land resources. This is due to the peculiarities of the national system of environmental law (natural resource and environmental regulations) of Ukraine. The article highlights the main and additional areas of environmental decentralization. It analyzes the legislation and the practice of its implementation in the sphere of natural resources reallocation,

territorial communities' demarcation, and their planning process. The roles of cadasters, registers, and electronic databases in maintaining natural resources for the successful decentralization of power are analyzed. The legal perspectives for the decentralization of environmental control are also outlined. The status of financial and ecological resources redistribution in the process of decentralization is highlighted along with the ways of its subsequent improvement. The conclusion suggests the ways for the improvement of legislation and the practice of its implementation to accomplish successful decentralization reform.

Keywords: Environmental decentralization; Sustainable development; Land reform; Territorial community

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1. INTRODUCTION

The strategic vision of sustainable development for Ukraine is based on ensuring national interests and accomplishing international commitments proceeding to sustainable development. Such development involves overcoming imbalances in economic, social, and environmental areas culminating transformation of economic activity through adopting the principles of a "green economy", embracing the principle of intersectoral partnership and involving adequately the concerned parties. Maintaining the environment in a proper state will ensure good living and welfare of current and future generations. Sustainable development also involves decentralization and implementation of regional policy, which is based on a harmonious combination of national and regional interests in the sphere of ecology. Decentralization of public power is the mechanism that ensures sustainable development of the State's regions based on legislatively regulated processes of transferring specific functions, powers, and budgets of central executive bodies to the local self-government bodies¹. With this backdrop, purpose of this chapter is to identify and analyze the environmental and legal components of the decentralization of power in Ukraine as one of the means for sustainable development.

2. POLICY OF SUSTAINABLE DEVELOPMENT AND THE DECENTRALIZATION OF POWER

By Part 1 of Art. 3 of the European Charter of Local Self-Government² (Strasbourg, October 10, 1985), local self-governance is specified as a legal capacity of local self-governments to exercise regulation and administration of a considerable share of public affairs within their responsibility and for the benefit of local communities. The decentralization of power is the component of the reform of local self-governance, the task of which has been a redistribution of authority, ownership, and service powers with the transfer of their indispensable part from the governmental authorities to the local self-government

¹ Hordiyenko, V., Onishchenko, M. and Malionkina, I., 'Foreign Experience of Public Power Decentralization and the Possibilities of its Transformation in Ukraine', (2019) 3 Bulletin of Sumy State University. Series: Economy 83-88. <<https://doi.org/10.21272/1817-9215.2019.3-11>>.

² <<https://rm.coe.int/168007a088>>.

bodies. It is necessary to implement more effective administration and the use of available resources, including natural resources, for the benefit of the members of territorial communities. A new stage of this reform of power in Ukraine started from the concept of the Local Self-Government Reform, and Territorial Organization of Power in Ukraine adopted in April 2014 (Resolution of the Cabinet of Ministers of Ukraine, 2014³) and is implemented while considering the principles and provisions of the European Charter of Local Self-Government.

The above-mentioned concept should be implemented in compliance with the following principles: 1) the availability of the resources for exercising the statutory powers of local self-governments; 2) specifying taxes and dues related to the territory of a relevant administrative-territorial unit as a financial basis for exercising powers by local self-governments; 3) delegation of the right to regulate local taxes and dues rates; 4) specifying them as a substantial basis of property, in particular, the land in communal ownership of territorial communities, objects of communal property linked to appropriate tax basis; 5) delegation of the right to dispose of land resources within their territory, integrate their property and resources while ensuring territorial communities cooperation, etc.

Along with the positive trends in the process of decentralization of public power in Ukraine, which has been in progress for several decades, the following problems can be identified: 1) inconsistency of local policy on socio-economic development with the fundamental interests of territorial communities; 2) lack of joint responsibility for the development of the territory; and 3) inconsistency of sectoral decentralization with the fundamental interests of territorial communities, etc.⁴.

One of the ways to solve the problems related to reforming the process of decentralization of public power is a systematic study of foreign experiences that can be adapted to the Ukrainian realities. The Polish experience has been exemplary for Ukraine, proving that the important conditions for the implementation of the reform of decentralization are as follows: a) consolidation of political forces in the process of reform implementation; b) drafting the programs of socio-economic development to be executed by administrative-territorial

³ <<https://zakon.rada.gov.ua/laws/show/333-2014-%D1%80#Text>>.

⁴ Ibid, *supra* note 1

units; and c) public support to the reform and control over its implementation.^{5, 6, 7, 8}

Achieving integrity in setting the goals, tasks, and priorities for the development at the local, regional, and national levels requires alignment with the "Sustainable Development Goals (SDGs)" promulgated by the UN Summit "Transforming Our World: the 2030 Agenda for Sustainable Development".⁹ The world's countries respect it as a fundamental document while shaping their domestic policies. In particular, 169 tasks under 17 SDGs aimed at preserving the resources of the planet and ensuring the welfare of nations along with creating a favorable and safe environment for a human existence. An inclusive administration has been earmarked in numerous strategic and program development documents of various countries, territorial communities, and businesses.¹⁰

The global sustainable development goals (SDGs) specify the conceptual framework for territorial development by identifying the quality approaches to ecosystem protection, territorial integration, urban and community development, and their role in community unifying. The participants in the large-scale consultation organized by the UN on the Agenda Drafting concluded that achieving the said SDGs requires actions at the local level.¹¹ Based on the results of these consultations¹² and proposals, the decision was made to add a separate Goal 11, "Make cities and residential areas inclusive, safe, resilient and sustainable", to the list of SDGs. However, the role of local authorities in the implementation of the 2030 Agenda goes beyond the limits of

⁵ Faizul, H. and Ntim, C.G., 'Environmental Policy, Sustainable Development, Governance Mechanisms and Environmental Performance', (2017) 27 (3) Business Strategy and the Environment 415-435, <<https://doi.org/10.1002/bse.2007>>.

⁶ Ibid, *supra* note 1.

⁷ Kaiser, A. and Vogel, S., 'Dynamic De/Centralization in Germany, 1949–2010', (2019) 49 (1) The Journal of Federalism 84–111, <<https://doi.org/10.1093/publius/pjx054>>.

⁸ Dacko, M., Płonka, A., Satola, L. and Dacko A., 'Sustainable Development According to the Opinions of Polish Experts', (2021) 14 (17) Energies 5325, <<https://doi.org/10.3390/en14175325>>.

⁹ UNDP, 'Agenda in the Field of Sustainable Development until 2030', (2016) UNDP, New York. <<https://www.ua.undp.org/content/ukraine/uk/home/sustainable-development-goals.html>> accessed 28 February 2023.

¹⁰ Sakalasooriya, N., 'Conceptual Analysis of Sustainability and Sustainable Development', (2021) 9 Open Journal of Social Sciences 396-414. <<https://doi.org/10.4236/jss.2021.93026>>.

¹¹ Shevchenko, O., Romanova, V. and Zhalilo, Y., *Decentralization and Formation of the Policy of Regional Development in Ukraine*, (2020) Kyiv: NISR, p.129.

¹² The Proposals were made by the Coordinator of Global Work Group of Local and Regional Authorities – "United Cities and Local governments (UCLG).

Goal 11. They are empowered to develop the policy, and they have been the catalyst for changes, as far as they represent the level of power with the best opportunities to integrate global goals into local communities.¹³

The formation of the legal framework for SDG achievement in Ukraine was initiated by the Decree of the President of Ukraine on January 12, 2015, which approved the Strategy of Sustainable Development of Ukraine 2020 (Decree of the President of Ukraine, 2015¹⁴). It provides for 62 sectoral reforms, including decentralization, public administration reform, agricultural reform, and land reform. The tasks of SDGs as well as the indicators of its achievement by 2030 are set out in the country's National Report "Sustainable Development Goals: Ukraine".¹⁵ However, this document has no statutory or regulatory status. Moreover, currently, there is no system for the realization of commitments on SDG achievements at regional and community levels in Ukraine. The delay in adopting an official document that would specify the place and the role of SDG in the national policy, as well as specific means and mechanisms providing wide-scale implementation of SDG at all levels, has led to the loss of opportunities for rationalization of budget expenses, facilitating the investments, and receiving official assistance from developed countries for the purpose of SDG realization.¹⁶ Currently, the Decree of the President of Ukraine of September 30, 2019 "On Sustainable Development Goals of Ukraine for the Period till 2030" (Decree of the President of Ukraine, 2019) includes the mandatory SDG compliance, but, unfortunately, the said Decree, in its implementation context, provides for only the involvement of State authorities and scientific societies, and does not include regional authorities, communities, and enterprises in the process. Therefore, effective implementation of SDG realization requires devolution of State level mechanisms of sustainable development goals to enhance the abilities of territorial communities implementing the SDG.

The Government of Ukraine is currently working on provisioning in the Constitution of Ukraine a new model of territorial

¹³ UCGL, 'The Sustainable Development Goals: What Local Governments Need to Know', (2021) <<http://bit.ly/2oXOnjT>> accessed 9 February 2023.

¹⁴ <<https://zakon.rada.gov.ua/laws/show/5/2015#Text>>.

¹⁵ <https://ukraine.un.org/sites/default/files/2020-06/SDGs_NationalReportUA_Web_1.pdf> accessed 22 February 2023.

¹⁶ Ibid, *supra* note 11.

governance, built on the principles of decentralization and subsidiarity. Due attention is also paid to their strategic planning process.¹⁷ However, today the situation of public governance of sustainable development in Ukraine is characterized by the lack of coordination of public policy to implement sustainable development at all levels, coupled with an inconsistency of regional and local development strategies in line with national SDGs. It is hard to evaluate the current situation, to assess the problems hindering strategic planning for sustainable development of regions and communities, and to monitor progress in achieving SDG at regional and local levels.

3. ENVIRONMENTAL AND LEGAL ASPECTS OF THE DECENTRALIZATION OF POWER

As noted above, Ukraine's reform of decentralization of power is aimed at redistribution of the powers and the resources to the local self-governments and is heavily focused on the environmental and legal aspects of such redistribution. In other words, it concentrates on the environmental sector.¹⁸ Natural resources and financial resources derived from their use constitute a significant material basis for territorial communities. From the ecological point of view, the residents of each territorial community are primarily interested in sustainable use and conservation of natural resources. Scientific literature specifies such a reform as "environmental decentralization".¹⁹

The main focus of the reform of the decentralization of power is placed on land resources. This is due to the peculiarities of the national system of environmental law (natural resource and environmental regulations) of Ukraine. Land and other natural resources are relatively independent objects of statutory regulation and have separate legislation, ownership regime, and other peculiarities of the legal

¹⁷ Shmyhal, D., 'The Government Must Provide the Ability for Sustainable Development of Communities', (2021) <<https://www.kmu.gov.ua/news/uryad-maye-zabezpechiti-spromozhnist-ta-stalij-rozvitok-gromad-denis-shmigal>> accessed 21 January 2023.

¹⁸ Malysheva, N., Kulynych, P. and Oleshchenko, V., *Decentralization of Power in Ukraine and the Development of Environmental and Natural Resources Legal Relations*, (2019) Kharkiv: Pravo, pp.35–36.

¹⁹ Krasnova, M., *Legal Reforms of Environmental Decentralization. Decentralization of Power as the Principle of Agrarian, Environmental, Land and other Natural Resources Fields of Law*, (2017) All-Ukrainian Round Table (Kyiv, September 22, 2017). Kyiv: Print Service Publishing House, pp.39-41.

regime. At the same time, the legislature knows natural resources, although they are independent objects of statutory regulation, have been interconnected in their natural state. On the one hand, the owners of the land plots are entitled to use the available minerals, peat, forest, water bodies as well as other useful properties existing within the plots as per the principles of right to use (i.e., without any prior permission and a charge), although they do not have the ownership right on other natural resources outside the plots owned by them. On the other hand, the environmental legislation of Ukraine comprehensively (as a single natural object) regulates the objects lying in the boundaries of a natural reserve fund, exclusive maritime economic zone, continental shelf, etc., which are viewed as integral objects under the collective ownership principles. The same thing applies to forests and waters being predominantly the objects of State and communal ownership. Hence, even though the legislature has considered it appropriate to involve mainly land in the decentralization reform process, the reform measures directly or indirectly affect other natural resources too.

Land resources have recently come under the scrutiny of the public and political circles of Ukrainian's society and the legislature. Land reform in Ukraine is now gaining momentum. The Decree of the President of Ukraine of December 12, 2015 approved the Strategy of Sustainable Development Ukraine 2020". It is one of the four factors ensuring sustainable economic growth in an environmentally friendly manner (sustainable use) and it provides for the agricultural and land reforms. To date, a new Decree of the President of Ukraine of September 30, 2019 "On Sustainable Development Goals of Ukraine for the Period till 2030" was adopted, which supports the idea of ensuring the achievement of global sustainable development goals (SDGs) and the results of their adaptation to the specifics of the development of Ukraine outlined in the country's National Report.²⁰ Hence, land reform in Ukraine is carried out within the framework of sustainable development goals, and, after the accomplishment of its purpose, that is, the restoration of sustainable use of land resources, the reform will help realize those global development guidelines.

²⁰ Zaiets, O., Vlasenko, Y., Busuyok, D. and Pozniak, E., 'Ecological Aspect of Legal Provision of Modern Land Reform as a Factor of Sustainable Development', (2021) 10 (1) European Journal of Sustainable Development 168-184. <<https://doi.org/10.14207/ejsd.2021.v10n1p168>>.

The reform is a category of the social development²¹, which entails obligatory participation of the State. Therefore, the reform in land relations is carried out on an initiative and comprehensive support of the State apparatus. Moreover, with regard to land reform as a component of the decentralization process, the State apparatus is both a subject and an object of the reform. The current stage of Ukrainian land reform concerns all major areas such as economic, environmental, institutional, functional, and law-making. With this approach, environmental and land measures of decentralization reform should be attributed to the institutional and functional direction of land reform in Ukraine, along with deregulation measures and other areas of governance improvement regarding use and conservation of land and other natural resources. The given part of land reform closely intersects with the reform of the environmental management system.²²

Thus, the main measures of decentralization reform that have environmental and legal nature (environmental decentralization) and are regulated by the current legislation of Ukraine are as follows (set out in chronological order of their implementation):

- 1) provision of administrative services in the sphere of ecology and nature management through administrative service centres established under the executive bodies of local councils (which issue numerous permits of natural resources use, and licenses of certain environmentally significant activities)²³ (The Law of Ukraine "On Local Self-Government"²⁴; The Law of Ukraine of September 6, 2012 "On Administrative Services"²⁵; Resolution No. 523 of the Cabinet of Ministers of Ukraine of May 16, 2014 "Some Issues of Providing Administrative Services through Administrative Centers"²⁶);
- 2) attribution of land fees to local taxes and dues, in particular, property tax (Law of Ukraine of December 28,

²¹ Zaiets, O., *Legal Aspects of Land Reform in Ukraine*, (2006) Kyiv: PPC "Kyiv University", pp.8-9.

²² Ibid, *supra* note 18.

²³ For example, services related to environment and nature resources use are provided by Administrative Service Center of Kyiv. Available online at: <<https://kyivcnap.gov.ua/AdminServices/List?categoryId=ff61eb98-201b-43bf-a27e-5494753c378e>>.

²⁴ <<https://zakon.rada.gov.ua/laws/show/280/97-%D0%B2%D1%80#Text>>.

²⁵ <<https://zakon.rada.gov.ua/laws/show/5203-17#Text>>.

²⁶ <<https://zakon.rada.gov.ua/laws/show/523-2014-%D1%80#Text>>.

- 2014 "On Amendments to Tax Code of Ukraine and Certain Legislative Acts of Ukraine on Tax Reform"²⁷);
- 3) introduction of the process of voluntary association among territorial communities and formation of local communities' territories (Law of Ukraine of February 5, 2015 "On Voluntary Association of Territorial Communities"²⁸);
 - 4) transferring to local self-governments of a significant array of powers addressing the sectors like drinking water supply, water discharge, and water use and protection based on the principle of subsidiarity²⁹ (Law of Ukraine of January 10, 2002 "On Drinking Water, Drinking Water Supply and Water Discharge"³⁰ with amendments of May 18, 2017);
 - 5) approval to the new administrative-territorial structure at local level (Law of Ukraine of April 16, 2020 "On Amendments to Certain Laws of Ukraine on Defining Territories and Administrative Centers of Territorial Communities"³¹; Law of Ukraine of November 17, 2020 "On Amendments to Certain Laws of Ukraine on Harmonization of Certain Issues of Organization and Activity of Local Self-Government Bodies and District State Administrations"³²; Resolution of the Verkhovna Rada of Ukraine of July 17, 2020 "On the Formation and Liquidation of Districts"³³; Resolution No.707-r-709-r of the Cabinet of Ministers of Ukraine of June 12, 2020 "On Determination of Administrative Centers and Approval of Territories of Local Communities"³⁴), and a plan to introduce a new administrative-territorial structure for the above levels of administration (Draft Law of Ukraine "On

²⁷ <<https://zakon.rada.gov.ua/laws/show/71-19#Text>>.

²⁸ <<https://zakon.rada.gov.ua/laws/show/157-19#Text>>.

²⁹ Ibid, *supra* note 18.

³⁰ <<https://zakon.rada.gov.ua/laws/show/2918-14#Text>>.

³¹ <<https://zakon.rada.gov.ua/laws/show/562-20>>.

³² <<https://zakon.rada.gov.ua/laws/show/1009-20#Text>>.

³³ <<https://zakon.rada.gov.ua/laws/show/807-20#Text>>.

³⁴ <<https://zakon.rada.gov.ua/laws/show/707-2020-%D1%80#Text>>.

the Procedure for Resolving the Issues of Administrative-Territorial Structure of Ukraine"³⁵);

- 6) transfer of ownership of State-owned land outside the territory of communities (except for land which is required for performing the functions by the State) to the territorial communities (Law of Ukraine of April 28, 2021 "On Amendments to Certain Legislative Acts of Ukraine to Improve the Management and Deregulation in the Sphere of Land Relations"³⁶, hereinafter knows as the 'Law of Ukraine on Deregulation');
- 7) earmarking of the boundaries of community territories through bilateral agreement of neighbouring communities or through court decisions (Law of Ukraine on Deregulation);
- 8) approval of new urban planning documentation at the local level, including the complex plans of the spatial development of territorial communities, general layouts of settlements, and detailed plans of territories that represent land management documentation (Law of Ukraine of June 17, 2020 "On Amendments to Certain Legislative Acts of Ukraine on Land Use Planning"³⁷);
- 9) ensuring the ability of local self-governments to use information from the State Land Cadaster (SLC) and provide information contained in it for the purpose of making managerial decisions on land management, in particular, facilitating the use of information from the State Land Cadaster by local self-governments; involvement of local self-governments in maintaining and obtaining information from other cadasters, registers and electronic databases related to natural resources (Law of Ukraine of December 10, 2015 "On Amendments to Certain Legislative Acts of Ukraine on Expanding the Powers of Local Self-Governments and Optimization of Administrative Services Provision"³⁸; Law of Ukraine of

³⁵ <http://w1.c1.rada.gov.ua/pls/zweb2/webproc4_1?pf3511=70936>.

³⁶ <<https://zakon.rada.gov.ua/laws/show/1423-20#Text>>.

³⁷ <<https://zakon.rada.gov.ua/laws/show/711-20#Text>>.

³⁸ <<https://zakon.rada.gov.ua/laws/show/888-19#Text>>.

April 13, 2020 "On National Structure of Geospatial Data"³⁹; and the Law of Ukraine On Deregulation);

10) increasing the role of territorial communities in exercising the State control over land use (Law of Ukraine on Deregulation); and

11) resolving land disputes within territorial communities by local self-governments (Law of Ukraine on Deregulation).

An additional role is played by those measures of the land reform of Ukraine that are indirectly related to the redistribution of functions of State power and local self-government but contributes to the goal of decentralization reform. They include: 1) reforming the procedure for establishing and changing the purpose of land; 2) establishing the farmland market; 3) introducing electronic land auctions; 4) introducing the lease of water fund and water reservoirs; 5) providing the documentation on land management with the status of public, open and publicly available data; 6) establishing independent control of land management documentation through public expertise or reviewing; 7) introducing professional liability insurance for contractors of land management as an alternative to State control; 8) cancelling State expertise of land management documentation; 9) simplifying the procedure for allotment (including privatization) of land plots from State and communal land; 10) fixing the boundaries of land plots with the consent of its owners. Most of these measures are aimed at deregulation of land relations i.e., a significant reduction of State power gripping the land relations, at abolition of excessive control, or at simplification of existing bureaucratic procedures. Deregulation affected both public authorities and local self-governments in context of ecology. Other measures, in particular environmental management reforms, are currently being planned: reforming of State environmental control and monitoring; creating nationwide automated system "Open Environment"; and introducing an ecosystem planning.⁴⁰

The practical implementation of the planned measures has been urgent depending on many factors, including proper legal awareness of State authorities, local self-governments, and residents of the respective territorial communities.

³⁹ <<https://zakon.rada.gov.ua/laws/show/554-20#Text>>

⁴⁰ Ibid, *supra* note 18.

4. DEVELOPMENT OF ENVIRONMENTAL AND LEGAL FUNCTIONS OF LOCAL SELF-GOVERNMENTS

4.1 Redistribution of natural resources, demarcation, and planning

During decentralization reform, it is envisaged to unite the territorial communities of different settlements into a functional territorial community becoming the basic level of the territorial administrative structure of the State. For this purpose, the Law "On Local Self-Government" guides the procedures. To implement the local self-governance with devolved State power in Ukraine in the context of land relations, it was necessary to introduce amendments in the current legislation aiming at expanding the powers of local self-governments in urban and rural areas. It pertains to four avenues: 1) inclusion of land within and outside the territory into territorial jurisdiction; 2) transferring a significant part of State-owned land into the ownership of territorial communities (known as united territorial communities - UTCs); 3) integration of UTC with UTC council; 4) transferring a significant part of the powers of public authorities concerning land management to UTC local self-government.⁴¹ The said amendments to the legislation were introduced and are currently implemented.

One of the key functions of local self-government is the effective redistribution of natural resources. However, in practice, the local self-governments in majority of cases provide certain natural resources together with land plots because such resources (e.g., water, forest, vegetation) exist within the land plot. As a consequence, amid the course of decentralization, land redistribution is exercised. According to Miroshnychenko (2013)⁴², the land redistribution includes the provision of State owned and community-owned land plots to the local territorial governments. As it is pointed out by Kulynych (2017)⁴³, decentralization of power concerning land relations in Ukraine should

⁴¹ Kulynych, A., 'Land of Urban Territorial Communities: Problems of Legal Regime Formation', (2019) In: Kovalenko, T.K. (ed.), *Monograph*. TALKOM, pp.179-180.

⁴² Miroshnychenko, A.M., *Land Law of Ukraine*, (2013) Kyiv: Alerta, p. 264.

⁴³ Kulynych, P., *Decentralization of Power in the Land Area of Ukraine: Legal Problems. Decentralization of Power as the Factor of the Development of Agrarian, Environmental, Land and Other Natural Resources Fields of Law*, (2017) Compendium of Cross-Ukrainian Round Table (Kyiv, September 22, 2017). Kyiv: Print Service Publishing House, pp.13-14.

be considered in two streams: decentralization of powers exercised on the right of public ownership on land; and decentralization of State powers exercised on public management of the use and protection of land plots.⁴⁴ Local self-governments exercise the right of communal ownership on land and other natural resources. However, in order to implement the principle of universality of local self-government concerning land redistribution, territorial communities should receive the maximum share of land, including the State-owned land, especially outside the residential area. Local self-government requires resources, and the most important of them is land.

With land on their disposal, local communities will be able to mobilize additional funds to local budgets, and those additional funds will help to do a lot of good for the members of those communities.⁴⁵ The means of transferring land to communal ownership are legal succession from ordinary territorial communities (OTGs) to united territorial communities (UTCs) (Part 3, Art. 8 of the Law of Ukraine "On Voluntary Association of Territorial Communities" of November 17, 2020). The traditional ways of land ownership acquisition are specified in Para 5, Art. 83 of the Land Code of Ukraine 2001⁴⁶ (hereinafter – LCU). The transition of collectively owned land (formerly Collective Farms) to communal ownership is realized according to the Law of Ukraine⁴⁷ of July 10, 2018. Currently, the land audit differs significantly from the land inventory and is carried out by non-governmental organizations (NGOs) on a commercial or grant basis (UKAID and UCAB Project, 2020).⁴⁸ At the same time, the main reason for the transfer of land ownership to the territorial communities is a large-scale one-time demarcation of State-owned land to be converted into communal property.⁴⁹

⁴⁴ Ibid.

⁴⁵ Miroshnychenko, A.M., 'The Increase of the Role of Communities in the Issues Related to UTC is a Step Opposite to Corruption', (2021) <https://agropolit.com/interview/832-anatoliy-miroshnichenko-pidvischennya-rolu-gromad-u-bud-yakih-pitannyah-povyazanih-iz-jittyam-otg--tse-krok-u-protilejny-bik-vid-koruptsiyi#disqus_thread> accessed 19 January 2024.

⁴⁶ <<http://www.unece.org/fileadmin/DAM/hlm/prgm/cph/experts/ukraine/laws/land.code.pdf>>.

⁴⁷ <<https://zakon.rada.gov.ua/laws/show/2498-19#Text>>.

⁴⁸ UKAID and UCAB Project, 'Methodology of Audit and land Inventory of Territorial Communities', (2020) UKAID and UCAB Project "Effective Management of Land Resources of New UTC", Kyiv, p.17.

⁴⁹ Ibid, *supra* note 41.

While the legislature is considering how to implement the land demarcation process, the executive branch has been trying to speed up the process for several years. In particular, the Resolution No. 60-r of the Cabinet of Ministers of Ukraine⁵⁰ dated January 31, 2018 instructed the State Service for Geodesy, Cartography and Cadaster of Ukraine (hereinafter - the State Geocadaster) to create maps and demarcate State-owned agricultural lands so as to transfer it to communal ownership of UTCs under Article 117 of the Land Code of Ukraine 2001. At the same time, Kulynych (2019)⁵¹ raises objections that the Resolution No. 60-r contradicts the current Land Code of Ukraine 2001 in terms of the obligation to transfer the land by the State Geocadaster to private ownership or use. However, that obligation was received by the State Geocadaster much earlier as per the instructions given by the Deputy Prime Minister of Regional Development, Construction and Housing and Communal Services of Ukraine on October 8, 2014 vide No. 37732/0/1-14. The decision of the Board of the State Agency of Land Resources of Ukraine (hereinafter – the State Land Agency), No. 2/1 of October 14, 2014 "On Mandatory Referral to Local Councils of Issues Related to the Disposal of State-Owned Agricultural Land" was enacted by the Resolution No.328 of the State Land Agency on October 15, 2014⁵². The conscientious execution of these instructions and Resolutions by the State Geocadastre (formerly the State Land Agency) created an opportunity for relevant judicial practice. Notably, courts appropriately evaluated the above-mentioned instruction as well as the decisions of the panel as contradicting the current Land Code of Ukraine (see Resolutions of KAC/SC of July 3, 2019, referring case 823/1103/16⁵³; Resolution of Supreme Court of Ukraine No. 823/1103/16, 2019 of December 24, 2019, referring case 823/59/17⁵⁴; Resolution of Supreme Court of Ukraine No. 823/59/17, 2019 of June 25, 2020, referring case 815/6057/16⁵⁵).

Thus, the adoption of the stated laws and the State Geocadaster was progressive initiative. An attempt was made to take into account the interests of territorial communities in the process of redistribution of State-owned agricultural land before introducing amendments to the

⁵⁰ <<https://zakon.rada.gov.ua/laws/show/60-2018-%D1%80#Text>>.

⁵¹ Ibid, *supra* note 41.

⁵² <<https://zakon.rada.gov.ua/rada/show/vr2-1821-14#Text>>.

⁵³ <<https://opendatabot.ua/court/82819906-ace1decc9f9412125d357054693c0636>>.

⁵⁴ <<https://opendatabot.ua/court/86635618-4d6469786a6a4c77689faeecd63a9400>>.

⁵⁵ <<https://opendatabot.ua/court/90029841-18c8d2582a6d0ced9c46cf41ad1c3e08>>.

land legislation. Because some of the government's decisions were to cause burden of appeals on the judiciary, the Law of Ukraine on Deregulation has resolved the issue of transferring a significant part of State-owned land to community ownership.

According to Paragraph 24 of the Transitional Provisions of the LCU (as amended by the Law of Ukraine on Deregulation), from the date of entry into force of the given Paragraph, land of communal ownership of territorial communities is considered to be State-owned land located outside residential areas within such territorial communities, except the following: a) land used by public authorities, State enterprises, institutions, organizations; b) land of defence agencies; c) land under nature reserve areas and areas of other nature protection purposes; d) land in exclusion zones and zones of unconditional (compulsory) resettlement that has suffered radioactive contamination as a result of the Chernobyl catastrophe; e) land under buildings, structures, other State-owned real estates.

The rule of demarcation and transition suggests two reformative ways: (1) when State-owned land is transformed into land plots with the registered State ownership, and (2) when such registration has not taken place. In the first case, land plots become communal property from the moment of State registration of communal ownership. In the second case, land plots and the land that has not been transformed into land plots shall become communal property from the date of entry into force of the given law. From the date of coming into force of the mentioned rules, public authorities have no right to dispose of such lands. The law ensures a number of guarantees to private entities based on the consequences of such a demarcation. Hence, a clear mechanism is elaborated for demarcation and transition of State-owned land to communal ownership.

But then, the next task that logically follows such devolution is to determine the boundaries of the area of territorial communities outside residential areas. According to the Law of Ukraine "On Local Self-Government"⁵⁶, the territory of a territorial community is an inseparable area within which the territorial community exercises its powers related to the issues of local importance within the ambit of Constitution and the laws of Ukraine. According to the Paragraph 7-1 of the Transitional Provisions of the Law of Ukraine of April 16, 2020,

⁵⁶ <<https://zakon.rada.gov.ua/laws/show/280/97-%D0%B2%D1%80#Text>>.

the determination of administrative centres of territorial communities and approval of the territory of territorial communities are carried out based on long-term plans previously approved by the Cabinet of Ministers of Ukraine. Under the Resolutions No. 707-r – 709-r of the Cabinet of Ministers of Ukraine dated June 12, 2020 "On Determination of Administrative Centres and Approval the Territory of Territorial Communities"⁵⁷, given prescriptions are complied with. Although they contain a graphic part establishing the approximate boundaries of each territorial community, the legislation foresees the need for land survey of territorial communities followed by approval and authorization of land survey projects.

According to Art. 1 of the Law of Ukraine "On Land Management"⁵⁸, the boundary of the territory of the territorial community is a conditional line on the surface of the land (including water space), which separates one territorial community from another. Information about the boundaries of the territorial community is entered into the State Land Cadaster. According to Art. 46-1 of the Law of Ukraine "On Land Management", land survey projects to establish the boundaries of territorial communities are developed to: a) specify the actual boundaries of the territorial community; b) resolve the disputes among several local self-governments concerning the boundaries of the territorial communities; c) introduce the information about the boundaries of the territorial community into the State Land Cadaster. The land survey project for establishing the boundaries of the territorial community includes a description of the boundaries of the territorial community, a drawing of the boundaries of the territorial community in an appropriate scale, a catalogue of the coordinates of the turning points within the territory of the territorial community. Land survey projects of establishing the boundaries of territorial communities are developed based on the decision of the corresponding village, town, city council (and is completed from the local budget, although other sources are not prohibited by the law). According to Art. 186 of the Land Code of Ukraine 2001, land survey projects for establishing the boundaries of territorial communities are agreed upon by village, town, and city councils of adjacent territorial communities and approved by village, town, city council representing the interests of the territorial

⁵⁷ <<https://decentralization.gov.ua/gromadas/legislation>>.

⁵⁸ <<https://zakon.rada.gov.ua/laws/show/858-15#Text>>.

communities. In case of refusal by the village, town, or city council to approve the land survey project, the dispute shall be resolved in court.

The statutory regulation guiding the territorial communities' demarcation still leaves several practical issues unresolved. Adjudgment of disputes between territorial communities over their boundaries raises the question: what legal criteria will be used by courts in satisfying the claims of one territorial community and rejecting the claims of the others? The question is worth resolving, for example, for rapid and undisputable demarcation of territorial community land; it is necessary to codify by law the hierarchy of criteria, such as historical land ownership by the territorial communities, overlap with the boundaries of the district or region, fixing the land plots outside the boundary, special need or interest of the territorial community concerning such boundaries, and so on.

In practice, disputes over boundaries between territorial communities have already arisen. A striking example of long-standing uncertainty is the dispute over setting the boundaries of the capital of Ukraine, Kyiv. On the one hand, the Kyiv City Council has made several attempts to approve the new boundaries of the capital (that is the competence of the Verkhovna Rada of Ukraine under Art. 172 of the Land Code of Ukraine), but on the other hand, the Verkhovna Rada of Ukraine returned draft decisions on this issue for follow-up revision, because a number of adjacent territorial communities represented by their local self-governments did not agree upon the projected boundaries by Kyiv City Council, believing that they included the parts of territories of adjacent territorial communities (e.g., Kotsiubynske, Irpin, Vyshhorod, Brovary, Chabany, Hnidy, Kniazhychi, Lisnyky, Bilohorodka and others). The lack of clearly defined city boundaries and updated master plans along with modern planning approaches lead to confusing and unsustainable spatial development, ignoring environmental issues, public space construction, and blocking the development of public transport, subway, parking lots, etc.⁵⁹

The Law of Ukraine "On State Land Cadaster"⁶⁰ stipulates in Section 7 of Paragraph 8 that information about the boundaries of administrative-territorial units, established before the entry into force

⁵⁹ Bohatyr, V., 'Un(bounded) Kyiv', (2021) <https://www.pravda.com.ua/columns/2021/05/24/7294632/> accessed 9 February 2023.

⁶⁰ <https://zakon.rada.gov.ua/laws/show/3613-17#Text>.

of the Law of Ukraine "On Land Management", is introduced into the Land Code of Ukraine 2001, including the basis of archival materials. This conforms the criterion of historical use. Such a type of administrative-territorial unit as the "village, town or city council" was the lower level of the territorial organization of the Soviet times. It included (and so is the current situation) the territory both within and outside the residential area (for village councils - the territory of several villages), as well as the adjacent territory.⁶¹ Therefore, it would be fair to restore the boundaries of such territorial communities in accordance with their historical configuration. The Kyiv City authorities also used this norm. In relation to the said conflicts over the approval of new borders, the capital city's borders were included in the State Cadaster basing the graphic materials compiled and laid down during 1989-1990s in pursuance of numerous Decrees of the Presidium of the Verkhovna Rada of the Ukrainian SSR.⁶² For all other cases of formation of boundaries of territorial communities, it is better if an alternative demarcation criterion is established.

In this connection, it is worth mentioning the experience of German Bavaria.^{63, 64} Given the structural changes after World War II, the Free Land of Bavaria underwent administrative and territorial reform in the 1970s, which, despite popular protests, reduced the number of districts, cities and communities. The task of administrative-territorial reform was to ensure the possibility of more efficient performance of functions, especially in terms of livelihood, by

⁶¹ Miroshnychenko, A.M., *The Principle of Ubiquity of Local Self-Governing and its Implementation in Land Legal Relations. Decentralization of Power as the Principle of Agrarian, Environmental, Land and other Natural Resources Fields of Law*, (2017) Compendium of All-Ukrainian Round Table (Kyiv, September 22, 2017). Kyiv: Print Service Publishing House, pp.42-43.

⁶² Kyiv City Council, 'Draft Decision of Kyiv City Council 08/231-3507/DD September 23, 2021' <https://kmr.gov.ua/sites/default/files/3507_2.pdf> accessed on February 2023.

⁶³ Dudek, S., 'Auf dem Weg zum austeritätspolitischen Föderalismus in Bayern? Eine historisch-materialistische Politikanalyse sparpolitischer Restrukturierungsprozesse in der Raumordnung [On the way to austerity federalism in Bavaria? A historical-materialistic political analysis of austerity restructuring processes in spatial planning]' (2021) 65 (2) *Journal of Economic Geography* 45-57, <<https://doi.org/10.1515/zfw-2020-0015>>.

⁶⁴ Miosga, M., 'Impulses for a reorientation of spatial planning in Bavaria', (2022) In: Miosga, M. and Simon Klee, A. (eds.), *New perspectives for sustainable spatial planning in Bavaria*, Verlag der ARL: Akademie for Spatial Development in the Leibniz Association, pp.163-184. ISBN: 978-3-88838-439-4, <<https://nbn-resolving.de/urn:nbn:de:0156-4394106>> accessed 15 January 2024.

consolidating administrative units. While in the first stage the focus was on the voluntary introduction of changes in the composition and territorial division of communities under the influence of financial incentives, the subsequent changes were made officially through the adoption of official regulations having the force of law.⁶⁵ Although the reform is already considered complete, Bavarian law provides for the possibility of changes in the composition and territorial division and corresponding requirements, which differ depending on the relevant level of local self-government (districts, regions, communities).

The communities are protected by Constitutional land legislation providing for procedural and material requirements for changes in the territorial division of communities. According to that legislation, it is necessary to adopt a formal law or a resolution having the force of law based on specific and sufficient powers. At the same time, the point of view from the local self-government of the community should also be taken into account. In addition, there are also material norms of changing the composition or territorial division of the community being "carried out for the verified reasons of objective expediency". It should be focused on the purpose of public welfare as well as be aimed at "establishing capable self-governing bodies and institutions that would comply with the designation and the essence of local self-government". Those changes should be coherent and fulfil the interests of those concerned.⁶⁶

Taking into consideration such practice of demarcation in Germany, the following can be suggested: 1) entrusting the approval of land survey projects on establishing the boundaries of territorial communities to higher State authorities or local self-governments (consideration of the interests of adjacent communities should be mandatory, but in case of disagreement, the higher body should act at its own discretion); 2) conceiving the Ukraine's situations similar to those of German case explained above, contextually changing the established boundaries of the territorial community if needed.

An adequate and rapid demarcation process as part of territorial planning is urgent for the full-scale implementation of the functions of

⁶⁵ Wollenschleger, F. and Stapf, J., 'Decentralization in Ukraine through the Prism of the Legislative Provisions of Bavaria and the EU Concerning the Unification of Territorial Communities and Cooperation between Them', (2018) In: Ustymenko V. and Zablodska I. (eds.), *Experience of Unification of Territorial Communities in Eastern Ukraine: Economic and Legal Aspects*. Kyiv: VISTKA LLC, p.13. <<https://www.fes.de/cgi-bin/gbv>> accessed 19 March 2023.

⁶⁶ Ibid.

local self-governance. In the process of decentralization reform, and in accordance with the Law of Ukraine of June 17, 2020 "On Amendments to Certain Legislative Acts of Ukraine Regarding Land Use Planning"⁶⁷, a new system of urban planning documentation at the local level was introduced inculcating a complex plan of spatial development of territorial communities (those plans are being drafted for the whole area of the territorial community within or outside its residential area), master plans of residential areas and detailed plans of territories (which existed before the reform, and are to be updated). The Resolution No. 926 of the Cabinet of Ministers of Ukraine of September 1, 2021 "On Adoption the Procedure for Drafting, Upgrading, Amending and Approval of Urban Documentation"⁶⁸ provides the procedural implementation. Unfortunately, only two complex plans have been drawn up in Ukraine till now as pilot projects with the support of foreign organizations.⁶⁹

Drafting, upgrading, amending and approval of urban planning documentation at the basic level is the responsibility of local self-governments of territorial communities. That task must be completed by January 1, 2025. However, the grave implications of imposed war on Ukraine may postpone this date. The tasks of territorial planning or urban planning with documentation at the basic level are prerequisites for redistributing the land of communal ownership. Thus, under Art. 24 of the Law of Ukraine "On Regulation of Urban Planning Activities"⁷⁰, the transfer of land plots from State-owned land or communal ownership land to natural persons or legal persons is only allowed once at least one of the urban planning documentations is approved at the local level. The law enshrines urban planning documentation at the local level at par with the status of land management documentation. This is an attempt to combine two competing systems, which have been in existence since Soviet times, of rational organization of the territory. Hence, rapid demarcation of the land of territorial communities will open the way for the delivery of many functions by the territorial communities.

⁶⁷ <<https://zakon.rada.gov.ua/laws/show/711-20#Text>>.

⁶⁸ <<https://zakon.rada.gov.ua/laws/show/926-2021-%D0%BF#Text>>.

⁶⁹ Chernobay, O., 'Complex Plan of Spatial Development Necessary for People, not for Officials', (2021) <<https://ukurier.gov.ua/uk/articles/oleg-chernobaj-kompleksnij-plan-prostorovogo-rozvi/>> accessed 9 February 2023.

⁷⁰ <<https://zakon.rada.gov.ua/laws/show/3038-17#Text>>.

4.2 Maintaining Cadasters, Registers and Electronic Databases of Natural Resources

The Law of Ukraine "On Environmental Protection" of June 25, 1991⁷¹ specifies that State cadasters of natural resources are maintained for the accounting purposes of quantitative, qualitative and other characteristics of natural resources. The procedure for maintaining cadaster and register of natural resources depends on the type of the natural resource and is regulated by the Land Code of Ukraine 2011, the Water Code of Ukraine⁷², the Forest Code of Ukraine⁷³, the Code of Subsoil Laws⁷⁴, the Law of Ukraine of July 7, 2011 "On State Land Cadaster", and the Resolution No. 559 of the Cabinet of Ministers of Ukraine of May 25, 2011 "On Urban Planning Cadaster"⁷⁵.

The creation and maintenance of centralized State cadasters, registers, and electronic databases of natural resources in Ukraine is conducted on European standards. The economic and political changes in European countries, globalization processes leading to the activation of real estate markets, and increased requirements for efficiency, accuracy and volume of real estate information result in changes of registration systems in European countries, including the transition from decentralized to centralized maintenance (Slavova, 2015).⁷⁶ A separate cadaster authority exists in most of the countries practicing the Napoleonic Code⁷⁷ and the German legal family codes (e.g., in Austria, Belgium, Denmark, France, Germany, Luxemburg, Poland, Slovenia and Spain). Greece has started to build up a separate cadaster (up to now, there has been no general land survey).⁷⁸

In Ukraine, cadasters of natural resources, in particular State Land Cadaster, are maintained alongside State registers of property rights on natural resources, especially land plots. Thus, according to the

⁷¹ <<https://zakon.rada.gov.ua/laws/show/1264-12#Text>>.

⁷² <<https://zakon.rada.gov.ua/laws/show/213/95-%D0%B2%D1%80#Text>>.

⁷³ <<https://zakon.rada.gov.ua/laws/show/3852-12#Text>>.

⁷⁴ <<https://zakon.rada.gov.ua/laws/show/132/94-%D0%B2%D1%80#Text>>.

⁷⁵ <<https://zakon.rada.gov.ua/laws/show/559-2011-%D0%BF#Text>>.

⁷⁶ Slavova, K., 'Current Registration Systems of Land Ownership in European Countries', (2015) 6 (16) *Jurnalul Juridic National: Teorie și Practică* 184-186.

⁷⁷ <<https://www.britannica.com/topic/Napoleonic-Code>>.

⁷⁸ Christoph, U. Schmid, Christian, H. and Hartmut, W., 'Real Property Law and Procedure in the European Union. General Report (2005)'. European University Institute (EUI), Florence, Italy, <<https://www.eui.eu/Documents/DepartmentsCentres/Law/ResearchTeaching/ResearchThemes/EuropeanPrivateLaw/RealPropertyProject/GeneralReport.pdf>> accessed 9 February 2023.

Law of Ukraine of July 1, 2004 "On State Registration of Real Property Rights and Encumbrances"⁷⁹, State registration of property rights is the official recognition and confirmation by the State of the acquisition, change or termination of real property rights, encumbrances of those rights by introducing appropriate information to the State Register of Real Property Rights. At the same time, economic and legal sciences put forth convincing arguments as for the need to integrate the State Land Cadaster and the State Register of Real Property Rights.⁸⁰ The given approach is fully consistent with global trends, as long as "there are two important elements of land registration systems that require close coordination and monitoring: (a) the register, which records the rights to land, and (b) the cadaster, which provides information on the location, boundaries, use, and values of land parcels (plots)".⁸¹

In 2020, in the context of the decentralization reform, a new concept was introduced into the legislation of Ukraine – "territory of the territorial community". According to the Law of Ukraine on Deregulation, starting from 2021 the territory of the territorial community is recognized as a separate object of the State Land Cadaster. Under the new version of Art. 13 of the Law of Ukraine "On State Land Cadaster", the following information on land within the territory of the territorial community is included to the Cadaster: a) the name of the territorial community; b) description of the boundaries of the territory of the territorial community; c) the land area within the territory of the territorial community; d) the names of adjacent territorial communities; e) information on the basis of which the boundaries of the territory of the territorial community were established (or changed).

The important aspect of decentralization reform is to ensure the publicity of data on natural resources, especially, by providing access to information stored in cadasters and registers of natural resources. At the

⁷⁹ <<https://zakon.rada.gov.ua/laws/show/1952-15#Text>>.

⁸⁰ Martyn, A., 'Elimination of State Bodies of Land Resources as a Medium-Term Task of Decentralization in Ukraine', (2018) 9 Land Management Bulletin of Ukraine. <<http://zemvisnuk.com.ua/news/diskus-ine-pitannya>> accessed 9 February 2023.

⁸¹ Kasimbazi, E., 'Land Tenure and Rights for Improved Land Management and Sustainable Development', (2017) Global Land Outlook Working Paper, United Nations Convention to Combat Desertification, Geneva. <https://knowledge.unccd.int/sites/default/files/2018-06/5.%20Land%2BTenure%2Band%2BRights__E_Kasimbazi.pdf> accessed 9 February 2023.

same time, currently in Ukraine, cadasters and registers of natural resources do not have a single system; these are many, they are maintained by different authorities being operated mostly based on data available in paper form and not reflecting the current state of affairs.⁸²

Back in 2018, the Resolution No. 825-r of the Cabinet of Ministers of Ukraine of November 7, 2018⁸³ approved the concept of creating a national automated system called "Open Environment", which is aimed at improving the management of environmental information concerning environmental protection, including rational use, reproduction, and protection of natural resources. It needs to be based on European standards while ensuring environmental rights of citizens and free access to environmental information about environmental state, risks, threats and perspectives pertaining to the use of telecommunication technologies and global information networks. Publication and visualization of open data and other geospatial environmental information in accessible and user-friendly formats was recognized as one of the activities aimed at creating the national automated system "Open Environment." The implementation of this concept was to be carried out during 2018-2020 but has not been fully implemented as yet.

In Ukraine, State cadasters of natural resources include geospatial data, metadata and services, disclosures, and other activities access to which is carried out using the Internet in accordance with the relatively new Law of Ukraine of April 13, 2020 "On National Geospatial Data Infrastructure"⁸⁴. The law is aimed to determine the legal and organizational basis for the creation, operation and development of national geospatial data infrastructure, aimed at ensuring effective decision-making by public authorities and local self-governments, meeting the needs of society in all types of geographical information, integration into global and European infrastructure geospatial data. *Inter alia*, basic geographical data provide information about territorial communities, including the boundaries of their territories, land cover and soils, land plots, and digital terrain model.

⁸² Busuyok, D., 'On the Issue of Decentralization of Power to Ensure Sustainable Development of Individual Territories', (2021) In: *Current Issues of Land, Agricultural, Environmental and Natural Resource law*. Compendium of the Scientific-Practical Conference (December 10, 2021). Kharkiv: Yurait, pp.29-33.

⁸³ <<https://zakon.rada.gov.ua/laws/show/825-2018-%D1%80#Text>>.

⁸⁴ <<https://zakon.rada.gov.ua/laws/show/554-20#Text>>.

The National Geospatial Data Infrastructure website⁸⁵ is currently being tested. The law stipulates that the local self-governments are obliged to publish metadata in their possession on the official websites and/or portals and display it through national geoportal access services. Local self-government officials bear administrative liability for non-disclosure of geospatial data and metadata, which are required to be disclosed by the law.

According to the provisions of the Law of Ukraine "On State Land Cadaster", information interaction of State land cadaster, urban planning cadaster, cadasters of other natural resources, and other information systems must be provided under the Resolution No. 483 of the Cabinet of Ministers of Ukraine of June 3, 2013⁸⁶ starting from 2021. Under the Law of Ukraine "On Amendments to Certain Legislative Acts of Ukraine on Expanding the Powers of Local Self-Government Bodies and Optimizing the Provision of Administrative Services"⁸⁷ of December 10, 2015 and the Art. 12 of the Land Code of Ukraine 2001⁸⁸, enshrined are the powers of the executive bodies of the village, town and city councils concerning land relations on the territory of villages, towns and cities, in particular, to provide information from State Land Cadaster in accordance with the law. The Law of Ukraine on Deregulation amended Art.12 of the Land Code of Ukraine⁸⁹ enshrines the authority of the executive bodies of local councils to provide information from the State Land Cadaster in accordance with the law. Village, town or city councils determine the possibility of exercising their authority on providing information from the State Land Cadaster, taking into account the abilities of organizational and technical support for their implementation. The specified changes are intended to expand the powers of local self-governments in terms of the use and protection of natural resources; they are considered as a significant step toward decentralization. At the same time, the implementation of those powers

⁸⁵ <<https://gki.com.ua/nacionalna-infrastruktura-geoprostorovih-danih-ukraiini>>.

⁸⁶ <<https://zakon.rada.gov.ua/laws/show/483-2013-%D0%BF#Text>>.

⁸⁷ <<https://zakon.rada.gov.ua/laws/show/888-19#Text>>.

⁸⁸ Art.12 of the Land Code of Ukraine reads, "The powers of the executive bodies of village, settlement, city councils in the field of land relations in the territory of villages, settlements, cities include: 1) provision of information from the State Land Cadaster in accordance with the law;..."

⁸⁹ Art.12 (amended) of the Land Code of Ukraine reads, "The powers of the executive bodies of village, settlement, city councils in the field of land relations include: a) providing information from the State Land Cadaster in accordance with the law;..."

by local self-governments is not possible without close cooperation with public authorities exercising the maintenance of cadasters, registers, and electronic databases of natural resources under the law.

It should be emphasized that the Land Code of Ukraine and the Law of Ukraine "On the State Land Cadaster" determine only the procedure for creating and maintaining the State Land Cadaster. Simultaneously, local self-governments create and maintain urban land cadasters at the local level. For example, the Decision No. 736 of the executive committee of Khmelnytsky City Council of September 24, 2020 approved the procedure for the formation and maintenance of the urban land cadaster.⁹⁰ A similar urban land cadaster operates in the capital of Ukraine, Kyiv. Back in 2018, the Department of Land Resources of the Kyiv City State Administration published information on the opening of an electronic system of Kyiv urban land cadaster for Kyivites, access to which was limited for 23 years⁹¹, but full access to the system has not been provided yet. The legal assessment of the creation and maintenance of the above-mentioned urban land cadasters is ambiguous both in terms of science and in practice.

Consequently, Zaiets (2020)⁹² raises several issues. In particular, the legality of the said actions because the legislation of Ukraine does not explicitly state such function as maintaining the urban land cadaster for local self-governments. It does not provide the regulatory procedure for the exchange of information between the urban land cadaster and the State land cadaster, the State Register of Real Property Rights and Encumbrances. It is also not clear in respect to the legal force of official information from the urban land cadaster, and the procedure for resolving discrepancies between data obtained from the urban land

⁹⁰ Khmelnytsky City Council, 'On approval of the procedures for creating, maintaining registers and cadastres of geographic information system of Khmelnytsky City Council: Decision of the Executive Committee 736, 24 September (2020)'. <<https://khm.gov.ua/uk/content/vid-24092020-no-736-pro-zatverdzhennya-poryadkiv-stvorenniya-vedennya-reyestriv-ta-kadastriv>> accessed 9 February 2023.

⁹¹ Ukrinform, 'A New System of Urban Land Cadaster will be Opened for Kyivites', (2018) <<https://www.ukrinform.ua/rubric-kyiv/2544897-kianam-vidkriut-elektronnu-sistemu-miskogo-zemelnogo-kadastru.html>> accessed 15 February 2023

⁹² Zaiets, O., 'Kyiv City Council and Kyiv City State Administration as Subjects of Ecological and Land Legal Relations: Separate Issues of Realizing the Legal Status', (2020) In: Inshyn, M. and Melnyk, Y. (eds.), *Social and Ecological Security through the Prism of Urbanism. European Institute of Continuing Education*. Podhajaska, pp.407-429.

cadaster and other cadasters and registers.⁹³ However, according to Art. 26 of the Law of Ukraine "On Local Self-Government", the issues concerning land relations are resolved exclusively at plenary sessions of the village, town or city councils. Decision-making at the plenary session of the local council in context of creating and maintaining the urban land cadaster and the procedure for exercising the powers by local self-governments can be interpreted as the regulation of land relations in the territorial community. Upon that, the land legislation of Ukraine does not prohibit the maintenance of urban land cadasters, as far as it regulates only the matters of creating and maintaining the State land cadaster. Considering that the land legislation regulates the procedure of the State Land Cadaster maintenance and providing information from the Cadaster in accordance with the Land Code of Ukraine and the Law of Ukraine "On State Land Cadaster", these laws have greater legal force than the decisions of local self-governments in case of discrepancies of information existing in the State Land Cadaster.

To unify information contained in various cadasters, registers and electronic databases of natural resources, the Law of Ukraine "On Public Electronic Registers" of November 18, 2021⁹⁴ was adopted and came into force on January 1, 2022. The draft of the Law was developed in cooperation with the Italy's International Development Law Organization (IDLO) based on a memorandum signed with the USAID and UKAID-funded project "Transparency and Accountability in Public Administration and Services (TAPAS)". Under Art. 5 of the Law of Ukraine "On Public Electronic Registers", natural resources, land and land plots with a real estate construction on them have been recognized as the objects of public electronic registers. The potential positive effect of the adoption of the Law should be noted, provided for the development of effective mechanisms for its implementation. There is no need for creating and maintaining the separate cadasters, registers and electronic databases of natural resources.

Thus, in the context of decentralization reform, there have been several positive changes in Ukrainian legislation and practice aimed at developing such environmental and legal functions of local governments as maintaining cadasters, registers, and electronic databases of natural resources.

⁹³ Ibid.

⁹⁴ <<https://zakon.rada.gov.ua/laws/show/1907-20#Text>>.

5. DECENTRALIZATION OF THE CONTROL OVER THE USE AND PROTECTION OF NATURAL RESOURCES

Control over the use and protection of natural resources is an extremely important function of management (environmental control), which has been a part of decentralization reform. It is usually viewed as an activity of the State, self-governing bodies, public associations, and industrial control systems aimed at monitoring and verifying compliance by legal entities and natural persons with environmental legislation, and as measures to prevent environmental offenses and bringing offenders to justice.⁹⁵ Thus, environmental control in Ukraine is divided into State, self-governing, public, and industrial types depending on its implementation. Depending on the object and the subject of implementation, different forms of control can be specified, namely, control concerning land use and protection, forest control, water control, and control of other natural resources and complexes.

"The Medium-Term Priority Action Plan of the Government until 2020"⁹⁶ sets out that the system of State control over the compliance with environmental legislation is not comprehensive. It needs to address high level of corruption, obsolete material and technical base, a non-transparent system of decision-making on environmental violations, an inadequate system of liability for environmental offenses, and, therefore, complete incapacity of the State Eco-inspection to exercise its powers.⁹⁷ Diffusion and duplication of State control functions among the executive bodies are also apparent. State control concerning environmental protection is exercised by seven different executive bodies having scarce coordination. The lack of public environmental control is visible.⁹⁸ Improving the efficiency of the system of State environmental control and prevention of environmental offenses are tasks of the State's environmental policy. Not a single integrated body of State supervision and monitoring has been established so far. Indeed, some legislative changes have been made regarding State control over land use and protection in the context of decentralization reform. The controlling powers of the councils of the

⁹⁵ Krasnova, M. and Krasnova, Y., *Environmental Law of Ukraine. General Part. Course of Lectures*. (2021) Kyiv: Taras Shevchenko KNU Publishing House, pp.128-129.

⁹⁶ <<https://zakon.rada.gov.ua/laws/show/275-2017-%D1%80#Text>>

⁹⁷ Ibid, *supra* note 18.

⁹⁸ Ibid, *supra* note 18.

united territorial communities concerning land use and protection should become an important legal lever to ensure the implementation of all other land powers of the local self-government bodies.⁹⁹

According to Art. 188 of the Land Code of Ukraine 2011, State control over land use and protection is currently carried out by the State Geocadaster, and the State Environmental Inspectorate of Ukraine controls the compliance with the requirements of the legislation on land protection. The Law of Ukraine on Deregulation provides for the State control by the executive bodies of village, town and city councils over the use and protection of land to the extent specified by the law. Executive bodies of village, town, and city councils acquire the statutory powers to exercise State control over the use and protection of land in a case where the relevant council decides to exercise such control. This legislative novella came into force on May 26, 2022. The procedure for acquiring State control powers by the executive bodies of councils is determined by the Law of Ukraine of June 19, 2003 (as amended on May 26, 2022) "On State Control over Land Use and Protection"¹⁰⁰. The same Law defines specific powers of executive committees of village, town, and city councils. Likewise, self-governing control of local self-governments is abolished (Paragraph 54 of the Law of Ukraine on Deregulation). However, due to the imposition of martial law in Ukraine during current Russian aggression, these provisions do not actually apply.

In general, the expected changes in decentralization of State control over land use and protection can be positively assessed as ubiquity of local self-governance. Moreover, the process is taking place within the framework of the Constitution of Ukraine (Art. 143), which says, "local self-governance can be delegated with powers of executive authorities under the law". However, the same Article of the Constitution stipulates that the State provides finance for exercising the given powers at the expense of the State Budget of Ukraine or by allocating certain national taxes to the local budget in the manner prescribed by the Law. Local self-government bodies are under the control of the relevant executive bodies while exercising their powers. This Constitutional rule has led to suggest that it undermines the independence of territorial communities from the State and makes them

⁹⁹ Kulynych, P., 'Land Reform in Ukraine: Legal Issues', (2021) In: Kulynych, P. (ed.), *Monograph*. Kyiv: Legal Rule, pp.207-208.

¹⁰⁰ <<https://zakon.rada.gov.ua/laws/show/963-15#Text>>

completely dependent on the public authorities.¹⁰¹ Thus, the abolition of self-governing control over the use and protection of land to establish a different type of public control in the area is viewed as a wrong decision that should be abandoned.¹⁰²

6. REDISTRIBUTION OF FINANCIAL AND ECOLOGICAL RESOURCES

The reform of decentralization process affects the basic functions of environmental management. According to Art. 9 of the European Charter of Local Self-Government¹⁰³, the financial resources of local self-government bodies must correspond to their powers provided by the Constitution and the Law. Currently, in the 7th year of decentralization of power, the income of local communities in Ukraine increased by virtue of the expansion of their powers. Due to the changes in the Tax and the Budget Codes of Ukraine, revenues to local budgets for the period from 2014 to 2021 increased fivefold.^{104, 105}

However, insufficient funding for executing environmental measures is still one of the root causes of regional environmental problems. For example, insufficient funding for the development of mineral deposits is the main factor in the non-reclamation of developed areas in Polissia region. The lack of a system of financing the forestry activities is the reason for the cessation of work on the creation of protective forest plantations in the eastern and southern regions (Law of Ukraine, 2019). In addition, given the limited financial resources of local governments, man-made disasters require an effective and rapid solution throughout Ukraine. In this regard, one of the most urgent issues to be addressed in the decentralization process remains the capacity of local communities to finance the environmental measures.

Ukraine, as a unitary State, has a two-level budget system that consists of State budgets and local budgets. Local budgets include district and region budgets and the budgets of territorial communities.

¹⁰¹ Ibid, *supra* note 99.

¹⁰² Ibid, *supra* note 99.

¹⁰³ <https://zakon.rada.gov.ua/laws/show/994_036#Text>

¹⁰⁴ Government of Ukraine, 'Decentralization Provides Possibilities: General information', (2022) <<https://decentralization.gov.ua/about>> accessed 9 February 2023.

¹⁰⁵ Tymoshenko, K., 'Modern leisure parks should appear in every community in Ukraine by the end of 2022' (2021) <<https://loda.gov.ua/news?id=60931>> accessed 23 February 2023.

The budgets of territorial communities include the budgets of the village, town, and city territorial communities and the budgets of the district. Each of those budgets usually consists of two parts: the general fund and the special fund. The general fund is intended to support financially the execution of general functions by the State and local self-government bodies. The special fund is intended to meet the expenditures from the specific revenues. Revenues of local budgets, redistributed between general and special funds, are environmental tax¹⁰⁶, rent¹⁰⁷, the land fee¹⁰⁸ provided by the Tax Code of Ukraine, the monetary compensation obtained from violations of environmental legislation, voluntary contributions by private individuals and legal entities, and subventions received from others.

Under certain conditions, funds received from both general and special budget funds may be used to finance the regional (local) targeted environmental programs and other environmental events (Resolution of the Ministry of Ecology and Natural Resources of Ukraine, 2015¹⁰⁹; Resolution of the Cabinet of Ministers of Ukraine, 1996¹¹⁰). However, the special fund of local budgets characterized by the targeted nature of its revenues and expenditures is of paramount importance for ensuring the financial capacity of territorial communities concerning environmental protection. With the purpose of financing environmental events from the special fund based on the provisions of the Budget Code of Ukraine and the Law of Ukraine "On Environmental Protection", the part of the environmental tax is accumulated from the sources like voluntary contributions, monetary penalties, etc.

While analyzing the provisions of the various laws emphasizing financial capacity of territorial communities concerning environment, it

¹⁰⁶ Environmental tax is levied on actual emissions into the atmosphere, discharges of pollutant into water, actual volumes of radioactive waste temporarily stored by their producers, generated radioactive waste, and accumulated radioactive waste until April 1, 2009.

¹⁰⁷ Rent is paid for the use of subsoil for the extraction of minerals; for the use of subsoil for purposes not related to the extraction of minerals; for the use of radio frequency resources of Ukraine; for special use of water; for special use of forest resources; for transportation of oil and oil products by main oil pipelines and oil product pipelines, transit transportation by ammonia pipelines through the territory of Ukraine.

¹⁰⁸ Payment for land is a part of the local property tax and is levied in the form of land tax, payers of which are owners of land and land shares (units) and permanent land users, as well as rent for land of state and communal ownership.

¹⁰⁹ <<https://zakon.rada.gov.ua/laws/show/z0994-15#Text>>.

¹¹⁰ <<https://zakon.rada.gov.ua/laws/card/1147-96-%D0%BF>>.

is important to note that the Law of Ukraine "On Environmental Protection" does not specify the environmental tax allocated to funds meant for environmental events. The Budget Code of Ukraine has repeatedly and unreasonably changed affecting the redistribution of environmental tax between general fund and special funds during this period of decentralization process. Thus, in 2014, the environmental tax was allocated mainly to the general fund of local budgets. After the introduction of amendments to the Budget Code of Ukraine of December 28, 2014, an unprecedented situation arose in early 2015 when only the monetary compensation received because of violations of environmental legislation and as voluntary contributions from private individuals and legal entities constituted the revenue of special funds of local budgets. The environmental tax was fully allocated to the general fund of State and local budgets. Such statutory provisions caused the abolition of the main source of State and local funds meant for environmental protection. As a result, it contradicted the Law of Ukraine "On Environmental Protection". Moreover, in 2015, revenues from penalties on damages caused by violations of environmental legislation and from voluntary contributions were calculated in millions (about 57 million UAH, equivalent to 1.92 million USD) against billions in revenues from environmental tax (almost 2.7 billion UAH, equivalent to 92 million USD), according to the State Treasury Service of Ukraine.¹¹¹

With the adoption of the Law of Ukraine "On Amendments to the Budget Code of Ukraine on the Targeted Environmental Tax" of December 24, 2015¹¹², the situation has significantly improved. The law stipulated that 80% of the environmental tax is included in the special funds of local budgets (except for the environmental tax levied on the generation of radioactive waste and/or temporary storage of radioactive waste). However, in 2017, the total percentage of environmental tax, which was allocated to special funds of local budgets, decreased to 55%.

Currently, in accordance with Art. 64, 64-1 and 66 of the Budget Code of Ukraine, revenues from environmental tax and local budget

¹¹¹ Veklych, O., 'The Current Model of Financial and Budgetary Decentralization of Environmental Taxation as an Institutional Factor in Increasing Environmental Challenges (analytical note). Committee of the Verkhovna Rada of Ukraine on Environmental Policy and Nature Management' (2016)
<<http://komekolog.rada.gov.ua/print/73867.html>> accessed 9 March 2023.

¹¹² <<https://zakon.rada.gov.ua/laws/show/918-19#Text>>.

fees have been redistributed as follows. The general fund of local budgets includes:

- 1) rent from special use of subsoil: extraction of minerals of national importance (village, town, urban territorial communities - 25%; district - 5%; regional - 25%); amber mining (village, town, urban territorial communities - 30%; district - 0%; regional - 0%); extraction of minerals of local importance (village, town, urban territorial communities - 100%; district - 0%; regional - 0%); oil, natural gas and gas condensate production (village, town, urban territorial communities - 3%; district - 5%; regional - 2%);
- 2) rent from special water use (village, town, urban territorial communities - 45%; district - 0%; regional - 45%);
- 3) rent from special use of forest resources in form of timber harvesting (village, town, urban territorial communities - 37%; district - 0%; regional - 0%); and
- 4) property tax (including land tax), rent from water reservoirs given on lease by the relevant local governments.

According to Art. 69-1 and 71 of the Budget Code of Ukraine, the special fund of local budgets includes 55% of environmental tax (including local self-government budgets [except for the budgets of Kyiv and Sevastopol] - 25%, regional budgets and the budget of the Autonomous Republic of Crimea - 30%, budgets of Kyiv and Sevastopol - 55%) and 70% of penalties from damages caused by violations of environmental legislation. Therefore, the amount of local budget revenues intended to finance environmental events is gradually increasing.¹¹³ In addition to targeted funding for environmental events, State and regional (local) environmental programs are also funded by Regional Environmental Programs (2020)¹¹⁴. Subventions from the State Budget of Ukraine are also essential for strengthening the financial capacity of territorial communities concerning environmental protection (Law of Ukraine, 2018; Resolution of the Cabinet of Ministers of Ukraine, 2019¹¹⁵). Therefore, the changes made to the budget legislation during the period of decentralization of power in Ukraine can be assessed as ensuring the financial capacity of territorial

¹¹³ <<http://old.cost.ua/budget/expenditure/>> accessed 11 February 2023.

¹¹⁴ <<https://mepr.gov.ua/content/prirodoohoronni-programi.html>>.

¹¹⁵ <<https://zakon.rada.gov.ua/laws/show/228-2019-%D0%BF#Text>>.

communities in relation to environmental protection. An example: additional financial resources received by local budgets enabled thousands of successful projects been implemented, namely, landscaping of parks, sorting stations for household waste, construction of biofuel boilers, and so on.¹¹⁶ Parallely, a systematic, complex and consistent solution of regional environmental problems is possible only if certain conditions are met i.e., adequate environmental tax distribution between general and special funds of local budgets, and imposing 100% environmental tax.¹¹⁷

7. CONCLUSION

This analysis of ecological decentralization leads to the following conclusions:

- (1) Decentralization of power contributes to the implementation of the principles of sustainable development. Currently, public management of sustainable development in Ukraine is characterized by the lack of coordination of public policies on sustainable development at all levels, in particular, inconsistency in the regional and local development strategies with national SDGs and inability to handle strategic planning of sustainable development of regions and communities, and scanty progress in achieving SDGs at the regional and local levels.
- (2) Considering the environmental and land decentralization reform in Ukraine, the following conclusions can be drawn: a) demarcation and transfer of State-owned land to communal ownership is an important step to create material and resource base and future capacity of territorial communities; b) successful completion of the process of demarcation and transfer of State-owned land to the communal ownership depends on the speedy and indisputable completion of the demarcation of land of territorial communities; c) the process of boundary survey

¹¹⁶ Ibid, *supra* note 18.

¹¹⁷ Chechel, A. and Moroz, Y., 'Environmental Policy of the State as a Strategic Way of Development and Activity of Local Self-Government Bodies in the Process of Decentralization (on the example of Zaporizhzhia region)', (2021) *Academic Notes of TNU named after V.I. Vernadskyi. Series: State Administration* 86. <<https://doi.org/10.32838/TNU-2663-6468/2021.1/15>>.

of territories of territorial communities, which should be performed based on new legislation, depends on the completion of land survey of territorial communities; d) for quick and unquestionable demarcation of land, it is necessary to legislatively set up criteria, namely, historical inheritance of land by territorial communities, overlap of district or regional boundaries, inclusion of outer land plots, special interest of a community in such plots, and so on. Based on German experience, it is suggested firstly to delegate powers of approving land management projects establishing the boundaries of territorial communities to higher authorities or local self-governments (coordinating and considering the interests of adjacent communities, but in case of disapproval, the higher body should act at its own discretion); secondly, considering the situations similar to German experience in Ukraine, the established boundaries of the territorial communities should be altered desirably.

- (3) In the context of decentralization reform, a number of positive changes in Ukrainian legislation and practice should be noted. These are aimed at developing environmental and legal functions of the State and local self-governance bodies to create and maintain cadasters, registers and electronic databases of natural resources. This is a) legislative recognition of the territory of the territorial community as a separate object of the State Land Cadaster; b) ensuring publicity of data on natural resources, in particular by providing access to information contained in cadasters and registers of natural resources, based on informational interface of the State Land Cadaster, urban cadaster, cadasters of other natural resources and other information systems; c) ensuring the local self-government bodies using information from the State Land Cadaster for the purpose of administrative decision making about land management. Ukrainian legislation promotes local governments for creating and maintaining local cadasters, registers and electronic databases of natural resources. Thus, in case of information discrepancies between local and State cadasters, registers and electronic databases of natural resources, priority

should be given to information on natural resources obtained from State information systems.

- (4) The volume of local budget revenues intended to support financing the environmental measures is gradually growing. The changes made to the budget legislation in Ukraine can be considered generally ensuring the financial capacity of territorial communities concerning environmental protection. Side by side, a systematic, comprehensive and consistent solution to the regional environmental problems is possible only if certain conditions are met, i.e., adequate environmental tax redistribution between general and special funds of local budgets, in light of a policy priority in local budget planning.

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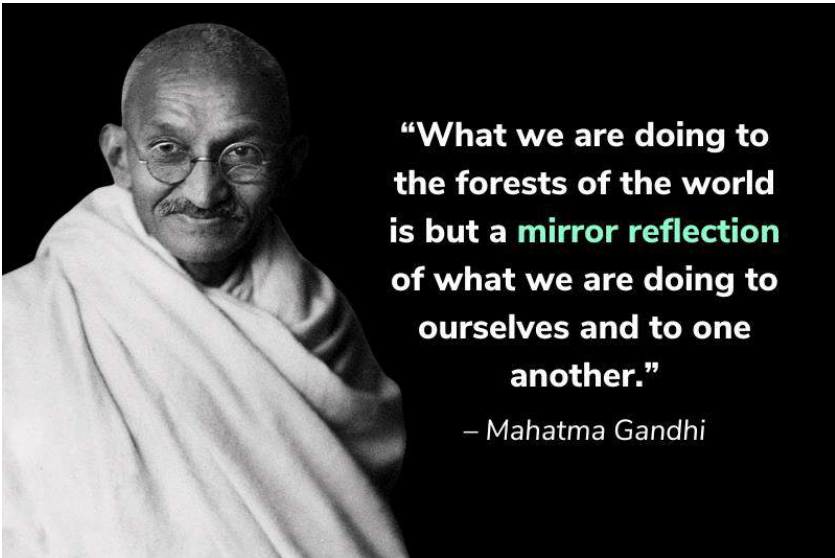


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**“What we are doing to
the forests of the world
is but a **mirror reflection**
of what we are doing to
ourselves and to one
another.”**

– Mahatma Gandhi

Legal Dimensions of Environmental Policy in Ukraine

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ABSTRACT

This chapter is devoted to the theoretical and practical analysis of the organizational and legal problems involved in the evolution and implementation of the environmental policy as integral part of the sustainable development strategy of Ukraine. This research is based on the international documents defining the goals of sustainable development and that are guidelines for harmonizing legal instruments in rationalizing natural resource use conforming the European Green laws. Based on the analysis of the current environmental legislation of Ukraine and its application, as well as inculcating the views of scientists, a conclusion is drawn about the need for prioritizing sectoral environmental reforms in the fields of biodiversity protection, curbing industrial pollution, waste management, emission monitoring and reporting, environmental control, and statutory responsibility. The grey areas of improving Ukraine's environmental policy ensuring effective, transparent and modern post-

war reconstruction are identified as: strengthening control over compliance with standards and environmental regulations concerning natural resource management; improving the mechanism of payments for harming the environment; giving tax benefits and other financial incentives to environmentally innovative practices; encouraging the environmental audit and certification; pricing flexibly the ecological products; stimulating scientific temperament in solving environmental problems; and so on.

Keywords: Environmental policy; Sustainability; Management of natural resources; Environmental legislation

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1. INTRODUCTION

Efficiently addressing the complex relationship between economic growth and environmental protection is the key to sustainable development. In this context, the existence of human existence transcends mere economic development; but also by maintaining the ability to control and protect the ecological environment. The contemporary phase of human progress is marked by rapid transformations across all facets of life, where interconnected changes dynamically evolve, mutually reinforcing one another, often with unpredictable consequences. Many of them are real threats to the further development of society. The rapid pace of world's economic growth and multiplication of production and consumption hinder the restoration of the natural environment; Consequently, visible indicators of an ecological crisis have emerged, encompassing issues such as climate change, the depletion of essential non-renewable resources, neglect of environmental safety protocols in economic endeavours, and transgressions of legal norms governing waste management, contributing to widespread environmental pollution. In turn, environmental challenges hinder global economic development and the normal life of society, leading to adverse effects on public health, increased expenditures on environmental protection, the exacerbation of the struggle for natural resources (in particular, in the form of armed conflicts and wars).

Sustainable development stands out a paramount focus in the contemporary world. The concept of sustainable development is now recognized by all countries of the United Nations as one of the priorities of humanity, the transition to which should take place at the national and global levels. The term "sustainable development" is increasingly used not only by the business community but also in official political and economic documents across various echelons. In recent decades, the international organizations have underscored the importance of achieving sustainable development. Achieving sustainable development is impossible without creating an effective decision-making system that incorporates the collective experience of social development rooted in pluralism and universal values. In line with the tenets of sustainable development, individuals emerge as active agents and prime drivers of progress. They play a direct role in shaping the contours of their lives, actively participating in decision-making processes, and overseeing the execution of those decisions.

The leading democracies of the world have chosen the path of sustainable development and successfully combined the pace of economic growth and a high standard of living with minimal environmental burden. This success is attributed primarily to a well-crafted environmental policy and proactive integration of ecological innovations into both production processes and social life. Ukraine, aligning its domestic and foreign policy, has committed to the principles of sustainable development. Within Ukraine, sustainable development holds a pivotal role in environmental policy, fostering the judicious use of natural resources, environmental protection, and the fulfillment of human needs. However, current challenges require constant attention to the interlinked issues of the economic, social and environmental development, necessitating their regulation through the lens of the concept of sustainable development¹.

The primary goal of Ukraine's sustainable development is to ensure dynamic socio-economic growth while concurrently preserving the environment quality and prudently utilizing natural resources. This goal aims to meet the needs of both present and future generations through the establishing highly efficient economic system. Such a system would not only incentivize environmental sustainability, productive work, and scientific and technical progress but also exhibit a strong social orientation. The foundational conditions of sustainable development include an economic framework rooted in a substantially modified market system, ecological sustainability based on the theory of biotic regulation of the environment, extensive international cooperation to realize sustainable development goals, and sustainable social development founded on the principle of justice. Additionally, fostering an environmentally consciousness public mindset is deemed crucial, achieved through the integration of environmental education within the education system and mass media platforms².

¹ Chernik, S., 'The concept of sustainable development in environmental law', (2019) Actual problems of national legislation: collection of materials of the International Scientific and Practical Conference, Kropyvnytskyi, April 18, 2019. Part 1. Kropyvnytskyi, pp. 61–63.

² Paton, B., 'National paradigm of sustainable development of Ukraine', (2016) Kyiv: State Institution "Institute of Economies of Nature Use and Sustainable Development of the National Academy of Sciences of Ukraine", p. 72. <<https://www.concordia.edu.ua/wp-content/uploads/2019/08/natsionalna-paradigma-stalogo-rozvitku-ukrainy.pdf>> assessed 15 February 2024.

The recent alignment of Ukraine's environmental legislation with the regulatory framework of the European Union, prompted by the implementation of the Association Agreement, underscores the imperative for domestic laws to primarily address objective and priority requirements. This entails a comprehensive legal framework governing environmental relations, incorporating both public and private interests, and integrating the necessity for regulatory oversight in key industries. Such an approach aims to ensure the stability of societal functions and promote the sustainable development of Ukraine³.

In above contexts, purpose of this chapter aims to analyze the organizational and legal aspects of environmental policy within the framework of Ukraine's strategy for sustainable development. To fulfill this objective, the following key tasks are addressed:

- Characterizing contemporary scientific perspectives on the development and execution of environmental policy;
- Exploring the international legal facets of environmental protection in the countries of the European Union; outlining special foreign approaches to implementing environmental policies;
- Carrying out an analysis of the legal foundation of environmental policy as an integral part of Ukraine's sustainable development strategy; and
- Gauging the prospects for the implementing Ukraine's environmental policy amidst European integration processes.

These identified issues on a conceptual level deem to be pertinent, given the significance of harmonizing the interests of contemporary society with the imperative of maintaining a sound environmental state.

2. EVOLUTION OF MODERN SCIENTIFIC THOUGHT ON ENVIRONMENTAL POLICY DEVELOPMENT

It is noteworthy to highlight the significant interest of scientists in the environmental policy issues. Over the past decade, global ecological and economic sciences have developed approaches involving information-

³ Hetman, A. and Anisimova, G., 'Some ecological and legal aspects of ensuring sustainable development of Ukraine', (2017) 3, Law and Innovation 7–17, <https://nbuv.gov.ua/UJRN/apir_2017_3_3> assessed 15 February 2024.

ideological, administrative, and economic tools within environmental policy. Roberts in his study, "Environmental Policy", examines the opportunities and limitations of ecological systems and economic development. The study suggests that environmental policy serves as a potential avenue to modify the human systems to operate within environmental constraints. using essential socio-scientific concepts (political, social and economic), the work elucidates the prerequisites for the formation and implementation of environmental policy. The author further examines the development, implementation, and evaluation of environmental policy within three specific contexts: the corporation, the State, and the international level⁴.

Renowned British researchers E. Jordan and D. Liefferink in their publication "Environmental Policy in Europe" analyzed the evolving impact of the European Union development on politics and environmental policy within member countries, and potentially, a broader array of prospective members. This work also presents an original assessment of the extent to which Europeanization has given rise to greater convergence of environmental policy in Western Europe⁵. The study's proposal of the actual implementation mechanism of European integration, especially in the realm of environmental protection, holds particular relevance for this research. In another thorough study, "British Environmental Policy and Europe: Politics and Policy in Transition", F. Lowe and S. Ward analyzed the effectiveness of the response of environmental groups and organizations in Great Britain referring the challenges of European integration. This study explores the European orientation of British environmental policy and delves into the repercussions of "Brexit" on European environmental policy. It investigates environmental diplomacy, institutional dynamics, and policy debates concerning issues like pollution, land use, and transport⁶. This work contributes to the development of a more integrated European-oriented environmental policy in Ukraine, drawing insights from the experience of environmental policies in Great Britain and other European countries.

⁴ Roberts, J., *Environmental Policy* (2010), New York: Routledge, p. 272. <<https://www.taylorfrancis.com/books/9780203842836>> assessed 15 February 2024.

⁵ Jordan, A. and Liefferink, D., *Environmental Policy in Europe* (2004), London: Taylor & Francis, p. 272. <<https://doi.org/10.4324/9780203449004>>.

⁶ Lowe, P. and Ward, S., *British Environmental Policy and Europe* (2005), London: Routledge. <<https://doi.org/10.4324/9780203982891-10>>.

In “The Origins of Energy and Environmental Policy in Europe”, Thomas Herber examines the evolution of European environmental consciousness in tandem with the successive steps of European integration in modern energy policy. The author highlights the pivotal role of the 1973 oil crisis in reshaping the integration trajectory of energy and environmental policies. Instead, environmental policy took shape through overarching measures such as energy conservation. The European Commission incorporated both energy and environmental policies into the EU political agenda, establishing an institutional framework for their development⁷. In the comprehensive scientific work, “Theoretical and Empirical Analysis in Environmental Economics”, diverse perspectives are explored to address current environmental challenges in developed countries, both theoretically and empirically. The book proposes effective new economic and environmental policies to tackle environmental issues, highlighting areas where traditional policies may fall short. The importance of this work lies in its in-depth analysis of key challenges faced by individuals and governments in developed countries during the transition from economic growth to the pursuit of life stability and environmental preservation amid societal development. Environmental issues addressed in this paper encompass the forest environment, air pollution reduction, adoption of renewable energy sources and fuel cell technology, agglomeration growth and urbanization, and the measurement of environmental sustainability⁸.

The ‘Environmental Policy Paradox’ offers an introduction to the process of environmental policymaking in the United States for air, water, land use, agriculture, energy, and waste disposal, introducing readers to global and international environmental issues. This chapter analyzes why some environmental ideas shape policy and others do not, explaining that even when the best short- and long-term solutions to environmental problems are identified, the task of executing these solutions often remains undone or is completed too late. Readers are offered a comprehensive history of the environmental movement

⁷ Hoerber, T., *The Origins of Eenergy and Environmental Policy in Europe: The Beginnings of a European Environmental Conscience* (2012), London: Routledge. <<https://www.taylorfrancis.com/books/9780203083048>> assessed 15 February 2024.

⁸ Nakayama, K. and Miyata, Y., *Theoretical and Empirical Analysis in Environmental Economics* (2019), London: Springer. <<https://link.springer.com/content/pdf/10.1007/978-981-13-2363-8.pdf>> assessed 15 February 2024.

combined with a state-of-the-art account of current environmental policy⁹.

In the work "Environmental Policy: Implementation and Enforcement", Hawke analyzes the intersection between the formation of environmental policy and its eventual implementation and enforcement through legal frameworks. Hawke further explores this subject with a focus on variables shaping the natural resource base and significance of law as a mechanism for executing environmental policy. Factors explored include changes in the form and natural resource base of EU and individual country laws, as well as a legal culture fostering a clear pattern of response to directives. It provides a nuanced exploration of the realities surrounding the implementation and enforcement of environmental principles, considering policy objectives and the constraints and expediency of law¹⁰. This research proves valuable for understanding the political challenges confronted by environmental protection specialists, aiding in the delineation of policy options for addressing contemporary Ukrainian environmental problems.

In the exploration of organizational and legal aspects of environmental policy within the context of the strategy of sustainable development of Ukraine, Feloniuk's monograph, "Modern Environmental Policy of Ukraine: Legal Principles of Institutional and Functional Support for the Formation and Implementation", holds relevance¹¹. This scholarly work conducts a comprehensive comparative analysis of environmental programs across leading countries worldwide. It suggests considering the legal concept of "institutional and functional provision for the formation and implementation of environmental policy" broadly, encompassing a system of State, non-State and supranational institutions that directly and indirectly influence State's environmental policy. The monograph underscores the pressing need for Ukraine to engage diverse social, political, public, economic and educational entities

⁹ Smith, Z., *The Environmental Policy Paradox* (2017) London: Routledge. <<https://www.taylorfrancis.com/books/9781315623641>> assessed 15 February 2024.

¹⁰ Hawke, N., *Environmental Policy: Implementation and Enforcement* (2018) London: Routledge. <<https://www.routledge.com/Environmental-Policy-Implementation-and-Enforcement/Hawke/p/book/9781138730595>> assessed 15 February 2024.

¹¹ Felonyuk, D., 'Modern environmental policy of Ukraine: legal foundations of institutional and functional support for its formation and implementation' (2023), Dissertation, Odesa Law Academy National University, Odesa, p. 247. <<https://dspace.onua.edu.ua/handle/11300/24725>> assessed 15 February 2024.

in active ecopolitical endeavours. It advocates for the subsequent active involvement of these entities in direct activities related to environmental protection, monitoring expertise, and control over quantitative indicators of natural resources use, among other aspects¹².

The legal aspect of this issue is crucial, as highlighted by Kantsurak. Throughout the years of independence, Ukraine has witnessed the active creation of various concepts, laws, recommendations and proposals by public organizations. However, at the same time, despite the vigorous declarative and recommendatory activities, a coherent and systemic environmental policy has yet to materialize. Such a situation underscores the imperative to formulate a comprehensive and purposeful national environmental policy. This policy should effectively balance the efforts of all stakeholders, including the State, citizens, public organizations, producers and consumers.

In modern times, it is axiomatic to assert that the socio-economic development of a region, individual country, and the world at large is directly dependent on the effectiveness of environmental policy, the rationality of its formation, as well as the extent to which measures for environmental conservation and protection are implemented¹³. At the same time, achieving a balanced use of natural resources, and, consequently ensuring ecological safety, an environment conducive to human life and health, and the preservation of ecological equilibrium, requires coordinated from all stakeholders without exception – including State and supranational entities, public representatives, and individuals.

The theoretical and methodological challenges that are often overlooked or underestimated, yet crucial for integration into the "practical component" of environmental policy implementation, encompass the following: studying the features of the environmental policy implementation at both macro and micro levels; identifying the optimal tools for conducting environmental policy taking into account economic interests and associated risks; crafting tools for educational initiatives and enhancing public awareness, including avenues for public participation in environmental decision-making processes. Modern legal studies addressing the challenge of upholding the environmental

¹² Ibid.

¹³ Felonyuk, D., 'Institutional and functional support of the formation and implementation of environmental policy of Ukraine: some aspects of classification approaches' (2021) 6 Actual Problems of Domestic Jurisprudence 49–54. <<https://doi.org/10.32782/392218>>.

principles within sustainable development should incorporate the latest trends in social, humanitarian, and natural sciences.

3. INTERNATIONAL LEGAL DIMENSIONS OF ENVIRONMENTAL PROTECTION IN EUROPEAN UNION COUNTRIES

The need to develop effective environmental policies has been underlined by the detrimental impact of human activities on the quality of life and significant economic losses. European countries emerged as pioneers in recognizing the direct correlation between quality of life, and a conducive environment for humanity. In the 1960s, some countries began to adopt appropriate legislation to establish environmental standards and forming governmental bodies that deal with environmental issues¹⁴.

However, it has become evident that addressing many environmental problems is attainable within the framework of individual States, because issues such as climate change, ozone layer depletion, and marine pollution transcend national borders. The realization drawn that environmental protection requires consideration of both national and supranational dimensions. In Europe, where small States and an intricate river network prevail, the transboundary transport of pollutants significantly affects the environment. Until the late 1980s, in many countries, the primary contributor to air pollution was emissions into the atmosphere, often attributed to neighboring States.

In Europe, an active supranational environmental policy was initiated in 1973 with the adoption of the First Environmental Action Program, coinciding with the first wave of EU expansion. To implement this program, in 1972, the Council of Heads of Government of the EEC member states adopted a decision to broaden the Community's competence, extending it to the environment realm. The program, developed at that time, foreshadowed aspects of the modern concept of sustainable development. In particular, it included the provision that economic development, prosperity and environmental protection are interdependent processes. The document underscored that "environmental protection is one of the main tasks of the

¹⁴ Kremer, L. and Winter, G., *Environmental law of the European Union* (2007) Moscow: Gordets. <<https://www.gerd-winter.jura.uni-bremen.de/umwr-eu-russ1.pdf>> assessed 15 February 2024.

Community"¹⁵. Key objectives within the program encompassed the prevention, reduction and limitation of environmental damage, the preservation of ecological balance, and rational use of natural resources.

In 1992, during the UN Conference on Environment and Development in Rio de Janeiro, several documents were adopted, outlining key provisions for a new paradigm of human development. Central to this concept was the recognition of the close interrelationship among ecological, economic and social aspects of human development. The resolution emphasized that comprehensive solutions, taking into account the balance of the interests in the development of natural resources and society, were essential to address these challenges collectively forming the bedrock of world civilization. The transition to sustainable development was identified as a universal task for humanity in the 21st century¹⁶. The concluding document recommended that each country formulate a national strategy for sustainable development grounded in mutually agreed economic, social and environmental plans. One of the goals was to ensure socially responsible economic development, incorporating measures to safeguard the natural environment for the benefit of future generations.

In 2015, the UN General Assembly adopted a pivotal document titled "Transforming Our World: Agenda for Sustainable Development for the period up to 2030"¹⁷, encompassing 17 goals and 169 targets aimed at eradicating poverty, conserving the planet's resources and ensuring well-being for all. Additionally, the agenda outlined 232 indicators to measure progress towards these objectives¹⁸. The document draws special attention to the fact that achieving goals in the field of sustainable development is possible only through joint work

¹⁵ Council Decision of 14 May 1973 adopting a research program for the European Economic Community on the protection of the environment. <<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31973D0126&qid=1510074506525>> assessed 15 February 2024.

¹⁶ UN Conference on Environment and Development (Rio de Janeiro. June, 1992). United Nations, New York (1992). <<https://www.un.org/en/conferences/environment/rio1992>> assessed 15 February 2024.

¹⁷ Transforming our world: Agenda for sustainable development for the period up to 2030. <<https://www.un.org/sustainabledevelopment/ru/about/development-agenda>> assessed 15 February 2024.

¹⁸ Moyer Jonathan, D. and Hedden, S., 'Are We on the Right Path to Achieve the Sustainable Development Goals?' (2020) 127 World Development, <<https://doi.org/10.1016/j.worlddev.2019.104749>>.

of administrative bodies, institutions of civil society, and citizens. Referred to as the goals of sustainable development (GSD), they represent a harmonious fusion of economic, social and environmental development priorities, as along with the tools necessary for their achievement. The attainment of ecological balance and the promotion of sustainability are integral components of this overarching framework of sustainable development.

The implementation of the GSD assumes special importance in light of the signing of the Association Agreement between Ukraine and, on one hand, the European Union, the European Atomic Energy Community, and their member states, on the other hand. This agreement outlines a commitment to advancing the long-term goals of sustainable development and a green economy. The key principles governing cooperation in the environmental sphere are enshrined in the provisions of Article 363 of Chapter 6 titled "Environment" and Annex XXX to the Association Agreement.

4. STATE ENVIRONMENTAL POLICIES IN PURSUIT OF SUSTAINABLE DEVELOPMENT

Nowadays, it is expedient to look at all spheres of life through an ecological prism, making environmental policy an integral part of the national agenda of countries. Environmental policy encompasses the collective efforts of society and the government with the objectives of protecting and enhancing the natural environment, effectively harmonizing natural resource management and environmental protection functions, ensuring environmental safety of citizens, promoting the adoption of waste-free and low-waste environmentally friendly technologies, fostering the development of environmental education¹⁹.

The UN Sustainable Development Agenda 2030 stands as a "comprehensive program for achieving peace and prosperity for all people and the planet"²⁰. As the program emphasizes, the fight against

¹⁹ Yatsenyo, O., 'Environmental policy of Ukraine: Goals, directions and implementation tools', 16 September, 2021. <<https://ecopolitic.com.ua/ua/news/ekologichna-politika-ukraini-cili-napryami-ta-instrumenti-realizacii>> assessed 15 February 2024.

²⁰ Koff, H., 'Why serve soup with a fork? How policy coherence for development can link environmental impact assessment with the 2030 agenda for sustainable development', (2021) 86 Environmental Impact Assessment Review 1–10. <<https://doi.org/10.1016/j.eiar.2020.106477>>.

poverty depends on reducing global inequality, mitigating climate change and conserving natural resources. The resulting GSDs signify a shift in international cooperation towards a globally transformative development approach, aiming to meet the social and environmental needs of local communities while simultaneously eliminating power imbalances at the global scale. The 2030 Agenda promotes interconnectedness and complex interactions within and between individual development goals. The UN, along with its member countries, has set an ambitious task, acknowledging that accomplishment of these goals significantly relies on the actions of individual nation-states. Consequently, a question arises: what methods are countries employing to achieve the Goals of Sustainable Development, and how suitable are these approaches for the monumental task at hand?

One of the traditional political tools used by the countries of the world is environmental impact assessment (hereinafter - EIA). Originating in the USA in 1969, EIA has evolved into a crucial component of numerous international documents, including the UN Framework Convention on Climate Change and the UN Convention on the Law of the Sea. EIA requires that those who make decisions about the implementation of projects and strategies consider their environment impact and explore feasible alternatives. The assessment highlights on two principles: ensuring decision-makers are well-informed and providing accessible information to the general population²¹.

In the People's Republic of China, EIA is recognized as the cornerstone of environmental reform. While EIA was initially incorporate into legislation in the 1970s, it was often perceived as a mere formality rather than a practical decision-making tool, limiting its preventive efficacy²². To address this, subsequent legislative amendedments have been introduced aiming to streamline procedures, elevate fines, and promote public participation, thereby enhancing the substantive role of EIA in environmental decision-making. He singles out three aspects of the Chinese reality that reduce the legitimacy and quality of EIA decisions. First, the EIA reform diverges from the broader environmental reform characterized by centralization.

²¹ He, X., 'In the name of legitimacy and efficiency: evaluating China's legal reform on EIA', (2020) 32 (3) *Journal of Environmental Law* 441–469.
<<https://doi.org/10.1093/jel/eqaa012>>.

²² Ibid.

Secondly, the judicial system' lack of independence hinders the accountability of officials. Thirdly, concept of "public participation" in decision-making and oversight is narrowly construed, involving only groups directly affected by the project. The determination of public interest in such cases is ambiguous, and mechanisms for involving wider range of persons, including non-governmental organizations, are lacking. Although the State offers procedural opportunities for non-governmental organizations to protect public interests against polluters, the overall framework for their participation remains limited.

Undeniably, EIA plays an invaluable role in the management of sustainable development. Its significance lies in providing criteria to assess the socio-economic impact of projects, programs and strategies. In addition, EIA has opened up opportunities for public participation in development planning, fostering industry transparency. Global recognition of this tool further underscores its importance. However, its effectiveness in achieving GSD is compromised by "defensive" positioning.

Wales, for example, encountered difficulties in implementing the principles of sustainable development. Jenkins examines the context of natural resource management and the recently enacted Environment Wales Act 2016. She observes that applying principles of sustainable development in this field is complicated due to the dependence of ecosystems well-being on external factors - both natural and human. This means that regulating them requires consideration of the complex nature of socio-ecological relations rather than a purely technical approach²³. Modern scientific literature highlights several key ideas in the field of sustainable development, with representative management standing out prominently. Representative management is considered as a basic principle in environmental decision-making, ensuring the incorporation of local and traditional environmental knowledge, as well as active participation from local communities in solving problems. Equally important is the adaptive management. While legal and political systems often emphasize long-term predictability, adaptive management requires increased flexibility in decision-making to effectively respond to new information. This requires the flexibility of decision makers²⁴.

²³ Jenkins, V., 'Sustainable management of natural resources: lessons from Wales'. (2018) 30 (3) *Journal of Environmental Law* 399–423.
<https://doi.org/10.1093/jel/eqy012>.

²⁴ *Ibid.*

Given these ideas and the foundational principles of sustainable development, such as principles of prevention, precaution and participation, which underpin natural resource management in Wales, the Welsh Environment Act should be recognized as an important step forward in achieving GSD. Primarily, it creates a "space" for institutional self-reflection. However, in pursuit of creating flexible procedures, legislators missed the crucial aspects of monitoring and reporting on the program implementation process. While the law enshrines the principles of participation and interaction, it falls short in providing procedural rights to ensure them. The absence of mechanisms for transferring information from the grassroots level to the national policy-making level in resource management poses a risk. This deficiency undermines all efforts and compromises the development of a robust legal framework for adaptive management in this field.

Likewise, Chile stands out as a notable success story in reforming State policy of sustainable development, transforming from a "green laggard" to a regional leader in just a few years. Since 2017, the country shifted its focus, prioritizing environmental protection over economic and investments. This shift in priorities enabled Chile to rapidly overhaul its policy sustainable development in a remarkably short timeframe. Acknowledging the international significance of Chile's sustainable development policy formation, it's crucial to recognize the impact of several internal factors. Firstly, the institutional and political legacy played a pivotal role in determining how international norms were implemented at the national level, influencing the timing and the content of the reform. Secondly, environmental protests created a window of opportunity for reform and increased the influence of civil society organizations²⁵. Thirdly, the government strategically used the window of opportunity created by civil society, fostering a favorable political environment for reform. The primary antagonist to those reforms was the business sector, consistently prioritizing its narrow interests. This suggests that the further success of reforms in Chile and the broader region hinges on the ability of society, the state and the international community to persuade businesses of the need to contribute to the implementation of the sustainable development agenda²⁶.

²⁵ Madariaga, A., 'From «green laggard» to regional leader: explaining the recent development of environmental policy in Chile', (2019) 38(4) *Bulletin of Latin American Research* 453–470. <<https://doi.org/10.1111/blar.12841>>.

²⁶ Ibid.

5. LEGAL FOUNDATIONS OF ENVIRONMENTAL POLICY: A KEY COMPONENT OF UKRAINE'S SUSTAINABLE DEVELOPMENT STRATEGY

Ensuring ecological safety and maintaining ecological balance on the territory of Ukraine, as stated in Art. 16 of the Constitution, is a fundamental duty of the State. Everyone has the right to an environment safe for life and health and is entitled to compensation for damages resulting from the violation of this right. Constitution places upon all citizens of our country the responsibility to protect nature and its resources. Fulfilling one's constitutional duty (Article 16 of the Constitution of Ukraine)²⁷, in 2000, the Government of Ukraine directed its efforts towards guaranteeing citizen's rights to an environment safe for life and health (Article 50 of the Constitution of Ukraine). To achieve this goal, the following main priorities were identified:

- 1) Development and improvement of environmental legislation;
- 2) Institutional improvement of the system of public administration in the field of environmental protection and resource management;
- 3) Increased public participation in the development and decision-making processes in this domain;
- 4) Establishment of an extensive system of institutions of environmental education and upbringing;
- 5) Development and improvement of the economic mechanism of natural resource management;
- 6) Deepening international cooperation in environmental protection, along with the harmonization of national environmental legislation with European standards;
- 7) Creation of an effective state system for monitoring the environment and the use of natural resources²⁸.

The implementation of theses specified priorities required the execution of a comprehensive set of legal measures aimed at creating a safe environment for human activity. In the modern development of

²⁷ Constitution of Ukraine. Law of Ukraine. 28 June 1996. No. 254k/96-VR. <<https://zakon.rada.gov.ua/laws/show/254%D0%BA/96-%D0%B2%D1%80#Text>> assessed 15 February 2024.

²⁸ On the Basic principles (strategy) of the state environmental policy of Ukraine for the period until 2020. Law of Ukraine. 21 December, 2010. No. 2818-VI. <<https://zakon.rada.gov.ua/laws/show/2818-17#Text>> assessed 15 February 2024.

Ukrainian environmental legislation, a noticeable trend is evident towards its detailed specification and the continual improvement of its individual parts. A number of basic legal acts have been put in place to regulate almost all facets of environmental protection and the use of natural resources. The groundwork for legislation in the realms of environmental protection, the use of natural resources, and environmental safety have been established²⁹. Thus, in particular, the Parliament of Ukraine has passed the key laws, including but not limited to, "On Environmental Protection", "On Nature Reserve Fund", "On Atmospheric Air Protection", "On Animal Life", "On the Use of Nuclear Energy and Radiation Safety", "On Handling of Radioactive Waste", "On Waste", "On Plant Life", "On Energy Saving", "On Alternative Sources of Energy", "On Alternative Types of Fuel", "On Energy Lands and the Legal Regime of Special Zones of Energy Objects", "On the Electric Energy Market", "On Heat Supply", and others.

Throughout Ukraine's years of independence, additional environmental protection legislation has been established, complementing existing laws, including the Law of Ukraine "On Environmental Protection". This legislation regulates legal relations in areas where humans and nature interact³⁰. Key components of this legal framework include:

- *Constitution of Ukraine*: Fundamental legal norms ensuring the effective use and protection of lands, subsoil, waters, forests, and the overall environment are concentrated in Articles 13, 16, 50, 92)³¹
- *The Forest Code of Ukraine*: Addresses issues related to the conservation, restoration, and rational use of forests.
- *The Water Code of Ukraine*: Provides legal protection for waters against clogging, pollution, depletion and regulates the procedure for their use.
- *The Code on Subsoils of Ukraine*: Ensures the rational, comprehensive use of subsoils to meet the needs of society

²⁹ Galushkina, T., Musina, L. and Potapenko, V., 'Basic principles of implementing the "green" economy model in Ukraine: a study guide' (2017) Kyiv (Ukraine): Institute of Environmental Management and Balanced Nature Management, 154 p.

³⁰ On environmental protection: Law of Ukraine. 25 June, 1991. No. 1264-XII. <<https://zakon.rada.gov.ua/laws/show/1264-12#Text>> assessed 15 February 2024.

³¹ Ibid, *supra* note 27

while protecting and guaranteeing the safety of people and the environment during the use of subsoils.

- *The Code of Civil Protection of Ukraine*: Ensures the protection of the population, territories, natural environment and property, as along with environmental safety.

The specified normative legal acts determine the principles and limits of activities related to environmental protection, the utilization of various natural resources, the maintenance of environmental safety, and the preservation of unique territories and natural objects integral to the the historical and cultural heritage of Ukraine. Aligned with the global goals of sustainable development until 2030 outlines in the UN General Assembly Resolution No. 70/1 dated September 25, 2015, and considering the adaptations tailored to Ukraine's specific development context as detailed in the National Report, at the aims include:

1. *Urgent Climate Action*: Implementing immediate measures to combat climate change and address its consequences.
2. *Water Resource Preservation*: Preserving and utilizing water resources in a manner that supports sustainable development.
3. *Terrestrial Ecosystem Protection and Restoration*: Focusing on the protection and restoration of terrestrial ecosystems, promoting their rational use, and ensuring sustainable forest practices.
4. *Land and Biodiversity Conservation*: Halting the processes of land degradation and biodiversity loss³².

The goals of the sustainable development of Ukraine for the period until 2030 serve as guidelines for formulating forecasting and program documents, as well as normative and legal acts. These efforts aim to ensure a harmonious balance among the economic, social and environmental dimensions of the sustainable development of Ukraine³³. According to the Association Agreement, the purpose of cooperation between Ukraine and the EU is designed to achieve environmental objectives. These include the preservation, protection, improvement and sustainable reproduction of environmental quality, as well as the protection of public health. The Agreement emphasizes the prudent and

³² On the Sustainable Development Goals of Ukraine for the period until 2030. Decree of the President of Ukraine. 30 September, 2019 No. 722/2019.
<<https://zakon.rada.gov.ua/laws/show/722/2019#Text>> assessed 15 February 2024.

³³ Ibid.

rational use of natural resources, and encourages measures at the international level to address regional and global environmental problems. To realize these objectives, the parties commit to a range of collaborative actions:

1. *Information and Experience Exchange*: Both parties commit to sharing information and experiences related to environmental issues.
2. *Joint Research Activities*: Collaboration on joint research endeavors to deepen understanding and address environmental challenges.
3. *Exchange of Environmentally Friendly Technologies*: The agreement encourages the exchange of information about environmentally friendly technologies to promote sustainability.
4. *Disaster and Emergency Response Planning*: Both parties agree to plan and coordinate responses to natural disasters and other emergency situations.
5. *Regional and International Collaboration*: The parties commit to joint activities at regional and international levels, in line with multilateral agreements on environmental protection ratified by both parties. Additionally, they may engage in collaborative efforts within relevant agencies³⁴, as deemed appropriate.

These provisions highlight the shared commitment of Ukraine and the EU to collaborative efforts in the spheres of environmental protection and sustainable development.

The legislation of Ukraine is expected to align with EU legislation in various critical areas. These include climate change management, education and training, access to information regarding environmental issues and the decision-making process, air quality, water and water resources management, waste and resource management, nature conservation, ecosystem preservation and protection, industrial pollution, industrial threats, the use of chemicals, and more. The harmonization of Ukrainian laws with EU standards in these domains reflects a commitment to fostering compatibility and cooperation in

³⁴ Association Agreement between Ukraine, on the one hand, and the European Union, the European Atomic Energy Community and their member states, on the other hand. 30 November, 2015. No. 984_011.
https://zakon.rada.gov.ua/laws/show/984_011 assessed 15 February 2024.

environmental policies and practices. On February 28, 2019, the Law of Ukraine "On the Basic Principles (strategy) of the State Environmental Policy for the Period Until 2030" was approved, which states: "The goal of the state environmental policy is to achieve a good state of the environment by introducing an ecosystem approach to all areas of socio-economic development of Ukraine in order to ensure the constitutional right of every citizen of Ukraine to a clean and safe environment, the introduction of balanced natural resource management and the preservation and restoration of natural ecosystems"³⁵.

The State environmental policy aims at achieving strategic goals, including the formation of environmental values and principles of sustainable consumption and production in society. It seeks to ensure the sustainable development of Ukraine's natural resource potential, integrate environmental policy into the decision-making processes regarding the socio-economic development of Ukraine, and reduce environmental risks to minimize their impact on ecosystems, socio-economic development and public health. Additionally, the policy focuses on the improvement and development of the State environmental management system³⁶.

Simultaneously, the state determines the anticipated results of the execution of the aforementioned initiatives. By 2030, Ukraine aims to attain a level of balanced (sustainable) development wherein dependence on non-renewable natural resources and environmental pollution will be reduced to ecologically acceptable levels. Performance indicators are established to assess the implementation of the State environmental policy in the future. In pursuit of Sustainable Development Goals (SDGs), Ukraine signed the Presidential Decree "On the Goals of Sustainable Development of Ukraine for the Period Until 2030". This decree established key guidelines for the development of projects, forecasts and program documents, and regulatory and legal acts, aiming to ensure equilibrium among the economic, social and environmental dimensions of the sustainable development of Ukraine³⁷. Thus, the environmental policy of Ukraine is

³⁵ On the Basic principles (strategy) of the state environmental policy of Ukraine for the period up to 2030. Law of Ukraine. 28 February, 2019. No. 2697-VIII. <<https://zakon.rada.gov.ua/laws/show/2697-19>> assessed 15 February 2024.

³⁶ Ibid.

³⁷ On the Sustainable Development Goals of Ukraine for the period until 2030. Decree of the President of Ukraine. 30 September, 2019 No. 722/2019. <<https://zakon.rada.gov.ua/laws/show/722/2019#Text>> assessed 15 February 2024.

aligns with the concept of sustainable development, which is confirmed by the provisions of approved legal acts.

6. CHARTING THE COURSE: UKRAINE'S ENVIRONMENTAL POLICY PROSPECTS AMIDST EUROPEAN INTEGRATION PROCESSES

Prior to full-scale war, experts claimed that bridging the gap between the state of the environmental protection in the EU and Ukraine in one leap was deemed impossible. They emphasized that, to successfully align with the requirements of the European Green Course, Ukraine must consistently fulfill certain prerequisites. However, the large-scale destruction caused by Russian aggression ushered new realities and conditions. Today, in the current wartime context, significant opportunities for rapid modernization and development are witnessed. With Ukraine having received the status of a candidate for joining the EU, it is imperative to transition to EU legislation, where the green economy stands as the primary development vector. Simultaneously, as rightly noted in the doctrine, the journey towards fulfilling environmental and climate obligations is neither short nor simple. This complexity arises from approximately 200 normative legal acts in the field of environment and climate within the EU, according to the European Commission. Ukraine must align its legislation and policies with these acts³⁸.

The Ukrainian environmental community staunchly advocates for the assertion that, in the long term, the post-war economic development process should be the cornerstone of the country's shift towards a green and clean economy. To facilitate green reconstruction of post-war Ukraine, improving the ecological landscape and enabling integration into European markets and political arenas, it is imperative to not only secure investments, but also establish effective public administration institutions and a well-defined legal framework. These institutions and frameworks must possess the capability to ensure a seamless transition to European standards concerning industry,

³⁸ Golubovska-Onisimova, H., Gavrilyuk, R., Andrusevich, N., Kravchenko, O., Alekseeva, E. and Malkova, T., 'Environmental reforms for the post-war recovery and European integration of Ukraine: an analytical document', (2023) Ukrainian National Platform of the Civil Society Forum of the Eastern Partnership, Kyiv, p. 34. <https://epl.org.ua/wp-content/uploads/2023/04/2023_Reforms_Policy_Paper.pdf> assessed 15 February 2024.

utilization of natural resources, and environmental protection³⁹. When considering the pivotal reforms in the realm of environment and climate change that serve as the foundation for a green recovery and simultaneously showcase Ukraine's genuine intentions to the EU, the following sectoral reforms are essential:

6.1 Protection of Biodiversity

Ensure the preservation of natural habitats for wild flora and fauna is of utmost importance, and this can be achieved through the establishment and proper management of the Emerald Network territories. Specialists have repeatedly emphasized that the preservation of biodiversity requires drastic changes in the State policy of Ukraine, particularly shifting from the notion of an agrarian country to one that prioritizes the well-being of all natural resources. This entails the establishment of a robust system for the protection, management and monitoring of natural territories, species and habitats. It also involves a transition from an exclusively consumerist model in the use of forest, water and land resources towards a more balanced approach that promotes sustainable development⁴⁰. Hundreds of thousands of hectares of Ukrainian forests suffered extensive damage due to Russian aggression, coinciding with significant administrative changes in the forest management system. To prevent further degradation of forests during post-war reconstruction, it is important for forestry to evolve in alignment with the goals outlines in Ukraine's State Forest Management Strategy until 2035⁴¹. This entails switch to discontinuous logging systems, expanding the area of naturally originated forests, normalizing the wood market, and other essential measures.

6.2 Reduction of Industrial Pollution

Certain industrial processes in Ukraine, characterized by emissions of volatile organic compounds, currently lack regulation. Therefore, it is urgent to align national legislation with key EU

³⁹ Priority environmental reforms for the green recovery of Ukraine. 17 June, 2023. <<https://epl.org.ua/announces/pershochergovi-ekologichni-reformy-dlya-zelenogo-vidnovlennya-ukrayiny>> assessed 15 February 2024.

⁴⁰ Ibid.

⁴¹ On the approval of the State Forest Management Strategy of Ukraine until 2035 from the Decree of the Cabinet of Ministers of Ukraine 29 December, 2021, No. 1777. <<https://zakon.rada.gov.ua/laws/show/1777-2021-%D1%80#Text>> assessed 15 February 2024.

directives aimed at improving atmospheric air quality. This synchronization is essential for regulating emissions of pollutants that pose significant risks to health and the environment.

6.3 Waste Management

The main step towards the implementation of European standards in this realm occurred with the adoption of the Law of Ukraine "On Waste Management" in 2022. This legislation establishes the groundwork for implementing an extended producer responsibility, fostering a circular economy, and introducing a waste management hierarchy. However, to activate the mechanisms and tools outlined in the law, additional legislation, including laws and by-laws pertaining to waste electrical and electronic equipment, batteries and accumulators, waste packaging, safe disposal of waste and management of waste from the extractive industry, must be enacted. Enhancing the state management system can be achieved through the establishment of a new central body of executive power. This entity would improve the management process, oversee permitting activities, streamline accounting procedures, and provide regulatory and methodological support in the field of waste management.

6.4 Monitoring of Emissions and Reporting

To fulfill EU environmental protection standards, Ukraine took significant step on September 20, 2022, with the adoption of the Law of Ukraine "On the National Register of Emissions and Transfer of Pollutants"⁴², and the corresponding procedure was also approved⁴³. According to the provisions of the law, the national open electronic register of emissions should become operational as early as 2024. Its implementation will obviously allow State bodies to better understand the quantitative and qualitative indicators of industrial emissions of the major polluters. This, in turn, will empower governmental bodies to make informed decisions aimed at reducing emissions. Simultaneously, the public will gain access to vital environmental information,

⁴² On the National Register of Emissions and Transfer of Pollutants. Law of Ukraine 20 September, 2022. No. 2614-IX <<https://zakon.rada.gov.ua/laws/show/2614-20#Text>> assessed 15 February 2024.

⁴³ On the approval of the Procedure for maintaining the National Register of Emissions and Transfer of Pollutants. Resolution of the Cabinet of Ministers of Ukraine. 2 June, 2023. No. 560. <<https://ips.ligazakon.net/document/KP230560?an=1>> assessed 15 February 2024.

allowing them to influence the authorities if necessary, based on the disclosed data.

6.5 Environmental Control and Responsibility

Ukraine should thoroughly reboot the system of State environmental control to guarantee adherence to environmental legislation and enhance the state of the environment. For this, endowing the the environmental control body with the requisite authority, eliminating existing obstacles and legal conflicts. Legislation should clearly define the forms of state environmental control measures, including scheduled and unscheduled inspections, raids, patrols, and swift response to calls, along with the corresponding grounds for their implementation.

It should be noted that, in line with the implementation of the European Green Deal, environmental and climate considerations must be integrated into various sectors such as energy, agriculture, industrial policy, the single market, and transport. In addition, in Ukraine, majority of environmental protection reforms endow local authorities with new responsibilities and create new opportunities for regional advancements. The effectiveness of the implementing the Association Agreement is intricately linked to the successful establishment of novel mechanisms, standards, and practices on the grassroots level. This correlated is particularly significant within the framework of State regional policy, in particular, in the environmental domain⁴⁴.

It is crucial to highlight that major reforms in areas such as environmental impact assessment, strategic environmental assessment, water resources management, pollution monitoring, and access to environmental information were initiated either before or during the full-scale invasion of Ukraine. In the aftermath of the conflict, any programs and projects for post-war reconstruction must be meticulously developed and approved, accounting for environmental considerations through the procedures like strategic environmental assessment and environmental impact assessment, and with mandatory incorporation of public opinion. Aligning with practices in the EU, an effective dialogue between central and regional authorities, local self-government, civil society and expert circles should be established in

⁴⁴ European Green Deal Representation of Ukraine to the European Union (2021). <<https://ukraine-eu.mfa.gov.ua/posolstvo/galuzeve-spivrobitnictvo/klimat-yevropejska-zelena-ugoda>> assessed 15 February 2024.

Ukraine. This collaborative approach aims to jointly formulate develop approaches and solutions for carrying out the necessary transformations and achieving ambitious environmental goals that will positively affect the lives of citizens.

7. CONCLUDING REMARKS

The concept of sustainable development delineates the overall trajectory of societal progress, with a focus on the environmental sphere. Sustainable development entails harmonious interaction between humanity and natural resources, emphasizing balance and interdependence. This involves rational and efficient consumption of natural resources while minimizing negative impacts during the satisfaction of individual needs. Humanity's understanding of the need to take into account the possible risks associated with harmful effects on the environment contributes to constant cooperation at the international and regional levels. Global environmental problems require joint efforts and the execution of appropriate policies. International agreements articulate the primary goals of sustainable development, serving as guiding principles for the pursuit of nations. At the national level, various normative legal acts have been approved to consolidate and actualize the concept of sustainable development. These legislative measures establish the foundation of environmental policy, outlining tasks, goals, and principles that guide national-level environmental initiatives.

The Association Agreement with the EU and the European Green Deal has set the course for a substantial transformation of Ukraine's environmental policy. However, due to the military invasion of its territory, not all planned measures have been implemented. The war has unsurprisingly catalyzed State measures focused on economic and infrastructure development, aligning with the principles of the European Green Deal. To achieve this, prioritized horizontal and sectoral environmental reforms are imperative. These reforms aim to align the field of environmental management with European standards, ensuring a swift, high-quality, transparent, open, and modern restoration process from an ecological perspective. First of all, among these reforms are biodiversity protection, reduction of industrial pollution; waste management; emissions monitoring and reporting, as well as environmental control and responsibility.

The key areas for enhancing Ukraine's environmental policy encompass several aspects. These include:

- *Strengthening Regulatory Oversight*: Enhancing control over adherence to norms, standards, and environmental regulations in natural resource management.
- *Organizational Improvement*: Reforming the structure of environmental management bodies for increased efficiency.
- *Technical Enhancement*: Bolstering the technical capabilities of environmental control mechanisms.
- *Impact Payments Mechanism*: Improving the mechanism for assessing and compensating negative environmental impacts.
- *Financial Incentives*: Utilizing tax benefits and other financial incentives to promote eco-innovation processes.
- *Environmental Management Tools*: Actively applying environmental audit, environmental certification, and flexible pricing for ecological products.
- *Emission Quota Trading*: Introducing a system for trading emission quotas.
- *Ecological Development System*: Establishing an effective system for ecological development and incentivizing scientific activities to address environmental challenges.
- *Funding Approach*: Moving away from the residual financing principle for environmental protection activities.

Addressing these challenges necessitates the adoption of modern tools for environmental policy implementation, innovative approaches to production and economic processes, and the revitalization of technical and technological resources.

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Environmental policy must strike a
balance between the earth's best
interests and our citizen's pressing
needs

— *Jim Clyburn* —

The Relationship between Environmental Policy and Foreign Direct Investment

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ABSTRACT

This chapter examines the problem of direct foreign investment in the context of the environmental policy of different countries of the world. Today, science has quite contradictory conclusions regarding the assessment of the effectiveness of direct foreign investments and its links with ecology. In Ukraine, direct foreign investment is largely believed to originate from offshore zones. Ukrainian companies are very often the "investors". This significantly narrows down both the innovative component of the country's environment and the changes expected to be brought by direct foreign investment, including in terms of ecological development. Based on the data of the State Statistics Service of Ukraine, the direction of the rational policy of direct foreign investments was determined from the standpoint of identifying its connections with environmental indicators. It is empirically substantiated that the policy of regulating waste generation, the policy of spending on environmental protection, and the level of innovativeness of the country are

promising. This chapter presents forecast models of the development of the areas of foreign direct investment policy formation identified in the study.

Keywords: Foreign Direct Investment; Environmental Policy; Environmental Problems; Environmental Results; Environmental Criteria

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1. INTRODUCTION

An important activity in the effective functioning of the economic system of the State is the direct foreign investments. In general, it contributes to the growth and production, the improvement of the welfare of citizens, and the growth of the innovativeness of a country. However, along with significant positive effects, foreign direct investment (FDI) can invoke a number of negative effects. They are manifested by the technological dependence and monopoly, the growth of the structural unemployment, as well as the emergence of significant environmental problems. Taking into account a practical experience, research, and scientific conclusions, the problem of FDI in the context of environmental challenges requires urgent actions aimed at eliminating or reducing negative impacts. However, in the global context, solving environmental issues sometimes acquires political interventions and certain manipulations. Taking into account the global warming and the nature of the risks it is accompanied by, the actions of the governments of different countries working to reduce CO₂ emissions, reduce pollution and improve the relevant legislative environment look quite logical. It is believed that, to limit global warming to 1.5°C by the end of the century, and to combat environmental degradation and stop the catastrophic loss of biodiversity, CO₂ emissions must be reduced.

But sometimes such measures are not aimed at finding the best solution for the climate and the environment, but at increasing bureaucratic pressure and lobbying the interests of certain groups. The fight against greenhouse gas emissions sometimes legalizes even quite destructive actions related to the destruction of reserves and nature conservation zones. Some states justify the eviction of people from their places of permanent residence in order to receive donor funds and protect the environment. In addition, climate protection activities are a component of a certain strategy of geopolitical influence, whereby rich countries gain access to poor regions or countries. Arjjumend (2017)¹ explores the issue of environmental standards in the context of regulatory change. Argues that weak states are subject to significant dependency and "corporate takeover", leading to a loss of state sovereignty.

¹ Arjjumend, H., 'Regulatory Chill, Corporate Takeover and Environmental Governance' (2017) 6 (12) International Journal of Current Advanced Research 7923-7934, <<http://dx.doi.org/10.24327/ijcar.2017.7934.1254>>.

Significant politicization complicates the real solution to environmental problems that are related to modern challenges and threats. FDI flows are subject to the influence of certain factors, among which we highlight macroeconomic (openness of the economy, its stability, productivity), political (development of the institutional environment, political stability), economic (tax burden, presence of special zones, trade restrictions) and national (specific). These include geographic location, infrastructure, GDP per capita, natural resources, and tita abundance. However, contemporary science ~~today~~ has important, but contradictory, conclusions regarding the assessment of the effectiveness of FDI in the context of its linkages with ecology.

Li *et al.* (2019)² examine the impact of FDI on environmental outcomes. According to their findings, foreign direct investment has a negligible effect on environmental performance for their sample of 40 countries. There is a differentiation of influence between developed and developing countries; direct investment has a positive and significant effect on environmental performance in developed countries and a negligible effect in developing countries. Solarin and Usama Al-Mulali (2018)³ argue that foreign direct investment increases pollution in developing countries, while it reduces pollution in developed countries. Research by Opoku and Boachie (2020)⁴ of African countries found that FDI generally has a negative impact on the environment. Tran, Tran and Vo (2022)⁵ study the negative impact of foreign investments on the strictness of environmental regulation. Fahad *et al.* (2022)⁶ argue that

² Li, Z., Dong, H., Huang, Z. and Failler, P., 'Impact of Foreign Direct Investment on Environmental Performance' (2019) 11 Sustainability 3538, <<https://doi.org/10.3390/su11133538>>.

³ Solarin, S.A. and Usama Al-Mulali, U., 'Influence of foreign direct investment on indicators of environmental degradation' (2018) 25 Environmental Science and Pollution Research 24845–24859. <<https://link.springer.com/article/10.1007/s11356-018-2562-5>> accessed 12 January 2024.

⁴ Opoku, E.E.O. and Boachie, M.K., 'The environmental impact of industrialization and foreign direct investment (2020) 137 Energy Policy 111-178, <<https://doi.org/10.1016/j.enpol.2019.111178>>.

⁵ Tran, Q., Tran, T., and Vo, D.H., 'Environmental regulation stringency and foreign direct investment' (2022) 61 (3) Australian Economic Papers 474-493, <<https://doi.org/10.1111/1467-8454.12256>>.

⁶ Fahad, S., Bai, D., Lingcai Liu, L. and Baloch, Z.A., 'Heterogeneous impacts of environmental regulation on foreign direct investment: do environmental regulation affect FDI decisions?' (2022) 29 Environmental Science and Pollution 5092–5104. <<https://link.springer.com/article/10.1007/s11356-021-15277>> accessed 12 January 2024.

environmental regulation promotes technological innovation in Chinese industry and the attraction of greater foreign investment. Wang *et al.* (2014)⁷ conclude that Chinese investors bring massive job creation to the host economy, but limited technology transfer to the local economy, large capital, as well as access to the Chinese market. However, Chinese investments carry significant risks and losses from inappropriate corporate social behavior. Gallagher and Qi (2021)⁸ report that China's foreign investment flow ranked second in the world after Japan with \$130 billion in 2018. By total capital, China is now the largest investor in the least developed countries and the largest investor in Asia, and the fifth largest investor in Africa.

It is worth noting that along with significant positive effects on the economic situation of the countries where these investments go, there are quite active discussions about their social and environmental impact. Local communities of individual countries to which these investment flows are directed to organize protests against the local environmental impact of certain investment projects, which sometimes leads to the breakdown of contracts (for example, Myitsone on Irawaddy⁹ hydropower project in Burma, various mining and hydropower projects in Latin America). In an environmental context, China is a major polluting country, where along with economic growth there are negative side effects: air and water pollution. Scientific results by Hanif *et al.* (2019)¹⁰ confirm the contamination hypothesis. Empirical scientific results obtained by Shah *et al.* (2022)¹¹ show that the inflow of foreign direct investment has a positive effect on population mortality

⁷ Wang, B., Mao, R. and Gou, Q., 'Overseas Impacts of China's Outward Direct Investment' (2014) 9 (2) Asian Economic Policy Review 227-249, <<https://doi.org/10.1111/aepr.1206>>.

⁸ Gallagher, K.S. and Qi, Q., 'Chinese Overseas Investment Policy: Implications for Climate Change' (2021) 12(3) Global Policy 260-272, <<https://doi.org/10.1111/1758-5899.12952>>.

⁹ <<https://archive.internationalrivers.org/resources/the-myitsone-dam-on-the-irawaddy-river-a-briefing-3931>>.

¹⁰ Hanif, I., Raza, S.M.F., Gago-de-Santos, P. and Abbas, Q., 'Fossil fuels, foreign direct investment, and economic growth have triggered CO2 emissions in emerging Asian economies: Some empirical evidence' (2019) 171 Energy 493-501, <<https://doi.org/10.1016/j.energy.2019.01.011>>.

¹¹ Shah, M.H., Salem, S., Ahmed, B., Ullah, I., Rehman, A., Zeeshan, M. and Fareed, Z., 'Nexus Between Foreign Direct Investment Inflow, Renewable Energy Consumption, Ambient Air Pollution, and Human Mortality: A Public Health Perspective From Non-linear ARDL Approach' (2022) 9 Frontiers in Public Health 1-9. <<https://www.frontiersin.org/article/10.3389/fpubh.2021.814208>>.

and renewable energy sources. Nguyen's (2020)¹² study focuses on Vietnam. The author assesses the real impact of foreign direct investment and the openness of the economy (trade) on the environment. The results show that FDI has a positive effect on CO₂ emissions in the short run, but not in the long run. The results of the study also show the actual shortcomings of foreign direct investment and production activities in Vietnam's export enterprises. Based on the results of this research, the author provides means for controlling CO₂ emissions. Dardati and Saygili (2020)¹³ examine the relationship between foreign ownership and the environmental performance of firms. Based on data from Chile, they found that export-oriented foreign firms have lower emission intensity than horizontally affiliated and domestic firms. Chung (2014)¹⁴ finds strong evidence of a pollution effect in the pattern of Korean foreign direct investment. Zugravu-Soilita (2107)¹⁵ concludes that foreign direct investment increases pollution in middle capital countries with weak environmental regulations.

Research by Doytch (2020)¹⁶ focuses on examining the impact of foreign direct investment at the sector level on four ecological footprints (EF): Consumption EF, Production EF, Import EF, and Export EF. At the same time, the level of development of the country was taken into account. The author obtained the following results:

1. High-income countries interpret the environmental impact of foreign direct investment in the context of consumption. Low- and middle-income countries

¹² Nguyen, V.T., 'The Role of Foreign Direct Investment and Trade on Environmental Quality in Vietnam' (2020) 7(3) *The Journal of Asian Finance, Economics and Business* 289–294.
<<https://doi.org/10.13106/JAFEB.2020.VOL7.NO3.289>>.

¹³ Dardati, E. and Saygili, M., 'Foreign production and the environment: Does the type of FDI matter?' (2020) 134 (6) *International Review of Applied Economics* 721–733, <<https://doi.org/10.1080/02692171.2020.1775791>>.

¹⁴ Chung, S., 'Environmental regulation and foreign direct investment: Evidence from South Korea' (2014) 108 *Journal of Development Economics* 222–236, <<https://doi.org/10.1016/j.jdeveco.2014.01.003>>.

¹⁵ Zugravu-Soilita, N., 'How does Foreign Direct Investment Affect Pollution? Toward a Better Understanding of the Direct and Conditional Effects' (2107) 66 *Environ Resource Econ* 293–338. <<https://doi.org/10.1007/s10640-015-9950-9>>.

¹⁶ Doytch, N., 'The impact of foreign direct investment on the ecological footprints of nations' (2020) 8 *Environmental and Sustainability Indicators* 1–13, <<https://doi.org/10.1016/j.indic.2020.100085>>.

- experience the environmental impact of production-related investments;
- 2. The export of the environmental footprint associated with direct foreign investment falls disproportionately in middle-income countries; high-income countries have no trace (evidence of ecological refuge);
- 3. In high-income countries, foreign direct investment in financial services reduces the environmental impact of production. The general conclusion is the detrimental role of foreign direct investment in non-financial services.

Taking into account the highly controversial aspects of this topic in the global context, we believe that the issue of determining the direction of a rational foreign direct investment policy in terms of a possible solution or avoidance of environmental problems for Ukraine requires scientific efforts. The purpose of this study is to substantiate the rational policy of direct foreign investment through the identification of their connections with individual indicators of the ecological and innovative state.

2. RESEARCH METHODOLOGY

The analytical part of this study is based on the materials of the State Statistics Service and covers the period 2011-2020. The data for which statistical information could be obtained for the relevant periods were included. The list of factors for identifying correlations between direct foreign investments was determined as a result of studying scientific sources.

The research used the method of correlation analysis. In particular, pair correlation to determine the degree of density of connections between direct foreign investment and individual indicators that determine the environmental status or performance of a direct foreign investment in the context of environmental consequences or innovations. This made it possible to identify those with high or medium degrees of correlation (correlation coefficients >0.3) and to predict potential directions for improving foreign direct investment policies in the context of strengthening its environmental component. Calculations and graphical interpretation of the results were performed in the Excel environment using the correlation analysis package.

3. RESULTS AND DISCUSSIONS

3.1 Environmental Criteria and its Relationship with FDI

Liberalization and globalization have significantly expanded the flow of foreign direct investment, including in environmental projects. When evaluating the impact of foreign direct investments, it is worth considering its consequences. The first aspect is related to the establishment of internal high environmental standards by the country in which the investment is expected. In this case, there is a risk that investors, seeking to avoid strict regulation, will move to regions or countries with less strict rules. The second aspect is related to the impact of multinational companies on the environment and its environmental sustainability. In the absence of environmental requirements, the impact of foreign investments can be negative. The hypotheses by Doytch (2020)¹⁷ and Jbara (2007)¹⁸ determine the relationship between foreign direct investment (FDI) and environmental outcomes (Table 1).

Table 1: The main hypotheses of the relationship between direct foreign investment and environmental indicators

<i>The name of hypothesis</i>	<i>The essence of the hypothesis</i>
Pollution Asylum Hypothesis	Foreign direct investment is directed to countries with weak environmental regulations. That is why enterprises with ecologically dirty production technologies move from more developed countries to less developed ones.
Hypothesis of the halo of foreign direct investment	Transnational companies contribute to the dissemination of better knowledge and environmental practices among local firms to improve environmental legislation and environmental standards in less developed countries. Their activities are believed to be associated with more developed countries that have the capacity and resources to disseminate

¹⁷ Ibid, *supra* note 16.
¹⁸ Jbara, B.W., ‘Exploring the Causality between the Pollution Haven Hypothesis and the Environmental Kuznets Curve’ (2007) Honors Projects 1-21, <https://digitalcommons.iwu.edu/econ_honproj/21> accessed 12 January 2024.

	better knowledge and environmental practices.
Kuznets ecological curve hypothesis	It assumes an inverted U-shaped relationship between pollution and income. This determines that countries pollute more at the stage of industrialization, and as they develop, they reduce the share of their "dirty" sectors of the economy through trade in them.

The analysis of the scientific conclusions of scientists and the main hypotheses regarding the relationship between foreign direct investment (FDI) and environmental results shows that, to date, no unified approaches and criteria have been formed that should determine the indicators of the assessment of such an impact. Hence, the main provisions of scientific empirical conclusions of scientists are debatable.

The European Commission¹⁹ quite actively supports projects in the field of financing climate measures. In 2021, the European Investment Bank Group²⁰ signed financing for a total amount of EUR 94.89 billion. This amount was divided between the European Investment Bank (65.36 billion euros) and the European Investment Fund (30.50 billion euros). Of the total funding, 86.74 billion euros were allocated to projects within the EU, and 8.14 billion euros to projects around the world. Statistics from the European Investment Bank (EIB) show that annual EIB lending for climate action in developing countries averaged 36% between 2016 and 2020. In 2020, green finance, which involves climate action and environmental sustainability, was 26 billion euro, or 40% of total allocation.²¹

When assessing foreign direct investments, the criteria by which environmental standards are measured are of great importance. They mainly include: the actual measurement of pollution emissions, the index of environmental efficiency, and the indicator of environmental legislation. An alternative for the indicator of pollution emissions is the

¹⁹ European Commission, 'European Innovation Scoreboard', (2021) European Commission, Brussels, <https://research-and-innovation.ec.europa.eu/statistics/performance-indicators/european-innovation-scoreboard_en#modal> accessed on 26 May 2023.

²⁰ EIB, 'The EIB in numbers' (2021a) European investment Bank, Brussels. <<https://www.eib.org/en/about/key-figures/index.htm>> accessed 12 January 2024.

²¹ EIB, 'Climate Action and Environmental Sustainability Overview' (2021b) European investment Bank, Brussels. <https://www.eib.org/attachments/thematic/climate_action_and_enviromental_sustainability_overview_2021_en.pdf> accessed 12 January 2024.

use of costs to reduce their level, but this indicator is difficult to use in international comparisons. Environmental efficiency indices provide an assessment of the country's proximity to the established goals of environmental policy. It combines two groups of indicators: ecosystem viability and ecological health. In general, the toolkit of environmental policy in the context of its rigidity is divided into market and non-market. The market uses tools to deter polluting enterprises. Non-market sets clear directives, standards and limits.

According to the data of the World Economic Forum 2017 and the strict environmental standards, Ukraine ranks 110th out of 136 countries. Its indicator is 3.3 points out of 7. The countries with the highest environmental ratings (6.2) are Switzerland, Sweden, Finland, and Austria. The lowest is Yemen having 1.7 rank.²² The third approach is to cover the scope of environmental legislation. For example, in the US, the Environmental Protection Agency (EPA) assigns each state a status of environmental achievement or non-achievement in accordance with the federal standards. Those regions that received a negative status are obliged to introduce stricter rules for polluting enterprises. This automatically means an increased compliance costs for businesses.²³ Shkarupa (2020)²⁴ proposes to attribute the characteristics of the level of their eco-destructive impact and decarbonization, the efficiency of using the land resources, and introducing the renewable energy technologies to the indicators of environmental sustainability. This will help carry out a targeted evaluation of the effectiveness of the adopted policy. It should manifest itself in the development of smart energy networks, the transition to a carbon-neutral economy, the reduction of emissions/discharges of harmful substances into the natural environment, and the increase in the specific weight of renewable energy sources in the structure of the country's energy balance.

²² Travel and Tourism Competitiveness Report, 'Rigidity of environmental standards' (2017) <<https://reports.weforum.org/travel-and-tourism-competitiveness-report-2017/ranking/#series=EOSQ160>> accessed 12 January 2024.

²³ Cole, M.A., Elliott, R.J.R. and Zhang, L., 'Foreign Direct Investment and the Environment' (2017) 42 Annual Review of Environment and Resources 465-487, <<https://doi.org/10.1146/annurev-environ-102016-060916>>.

²⁴ Shkarupa, O.V., 'Modeling the transfer of eco-innovations in the "Enterprise-region-state" system: impact on economic growth and security of Ukraine' (2020) Report on research work. <https://essuir.sumdu.edu.ua/bitstream-download/123456789/84341/1/Shkarupa_1598.pdf;jsessionid=59689549633CC595E544B4C0F9EE9F7A> (in Ukrainian) accessed 12 January 2024.

3.2 Justification of the Rational Policy of FDI

In order to study the actual connections of direct foreign investments and identify its impact on environmental indicators in Ukraine, a correlation analysis was conducted between foreign direct investment (Table 2) and individual indicators that determine the environmental status. Summarizing the scientific conclusions, the following ecological indicators were identified: emissions of greenhouse gases; waste generation; expenses for the protection of the natural environment and environmental protection measures; the land area of nature reserves; use of mineral fertilizers; application of organic fertilizers; consumption of energy from renewable sources; the general level of innovativeness of the country.

Table 2: Foreign Direct Investments, in million USD

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Investment	48198	51705	53704	38357	46009	47706	47765	46894	54210	52091

Source: SSSU (2021a)²⁵; NBU (2020)²⁶; SSSU (2014)²⁷; SSSU (2020a)²⁸

The statistical data presented in table 2 indicate uneven inflows of foreign direct investment into the economy of Ukraine during the study period. The peculiarities of foreign direct investments in Ukraine are that they are owned by foreign residents or controlled by foreign companies. In general, it is worth noting the low share of foreign direct investments from the developed countries of the world. There is a fairly high level of them from round-tripping FDI countries (Cyprus, British Virgin Islands, Liechtenstein, Belize, Ireland). Offshore investments have a negative impact on the investment potential of Ukraine and are a threat to achieving sustainable economic development. It is worth

²⁵ SSSU, 'Investment of External Economic Activity of Ukraine' (2021a) <http://www.ukrstat.gov.ua/druk/publicat/kat_u/publ10_u.htm> (in Ukrainian) accessed 12 January 2024.

²⁶ NBU, 'Direct investments according to the principle of orientation (inventories)' (2020) <<https://bank.gov.ua/ua/statistic/sector-external/data-sector-external>> (in Ukrainian) accessed 12 January 2024.

²⁷ SSSU, 'Methodological regulations on the organization of state statistical monitoring of investments in foreign economic activity' (2014) № 284 (with changes). <http://ukrstat.gov.ua/metod_polog/metod_doc/2014/284/mp_izd.pdf> (in Ukrainian) accessed 28 January 2024.

²⁸ SSSU, 'Methodological regulations on the organization of state statistical monitoring of investments in foreign economic activity' (2020a) № 117 (with changes). <https://ukrstat.gov.ua/norm_doc/2020/117/117_2020.pdf> (in Ukrainian) accessed 12 January 2024.

pointing out that these are often the funds of Ukrainian investors who invest funds in Ukraine through offshore zones, which leads to its "circulation". Chinese companies are showing interest in direct investment in Ukraine. For example, in 2019, in the Chortkiv-West industrial park, Chinese investors agreed to build a corn processing plant with a total investment of \$600 million.²⁹ The analysis of the dynamics of total greenhouse emissions (Table 3) during the studied period shows a trend of its reduction. In the context of the general ecological situation, this forms the basis for a positive forecast of a certain improvement in the ecological state.

Table 3: Total emissions of greenhouse gases, in thousand tons

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Emission	6877.3	6821.1	6719.8	5346.2	4521.3	4686.6	4230.6	4121.2	4108.3	3675.3

Source: SSSU (2021b)³⁰

However, the results of the correlation analysis based on the statistical data used in this study indicate a low correlation between the amount of direct investment and the total amount of greenhouse gas emissions (correlation coefficient 0.08) (Table 3). The specified connection should not be taken into account in the further modeling of the directions of state policy regarding foreign direct investments in the context of its greening. The analysis of statistical information on the generation and management of waste for the studied period of 2011-2020 shows certain fluctuations of this indicator in dynamics. At the end of the period, its growth is observed (Table 4).

Table 4: Generation and management of waste, in million tons

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Waste	14372	14857	15112	12205	12506	12394	12442	12972	15399	15635

Source: SSSU (2021c)³¹

²⁹ Markevych, K.L., 'Realization of national economic interests of Ukraine in the attraction of foreign direct investment' Qualifying scientific work on the rights of the manuscript. A thesis for scholarly degree of candidate of economics: 21.04.01 – Economic Security of the State (051 – Economics) (2020) *National Institute for Strategic Studies*. Kyiv. <https://niss.gov.ua/sites/default/files/2021-04/markevych_dissertation.pdf> (in Ukrainian) accessed 12 January 2024.

³⁰ SSSU, 'Emissions of pollutants and carbon dioxide into the atmosphere (1990-2020)' (2021b) <http://www.ukrstat.gov.ua/operativ/menu/menu_u/ns.htm> (in Ukrainian) accessed 12 January 2024.

Correlation analysis of the relationship between foreign direct investment and the indicator of waste generation (Table 4, Figure 1) revealed a strong correlation dependence (coefficient 0.83). At the same time, the growth of the volume of direct foreign investments in Ukraine contributes to the accumulation of waste. This correlates with the scientific research of many authors who obtained similar results when studying other countries of the world. The existence of a correlation dependence determines its consideration as a potential direction of improving the government's policy regarding foreign direct investments in terms of strengthening its greening through effective waste management.

An important direction is the consideration and study of current costs for environmental protection (Table 5). It is worth noting that during the study period, this indicator is characterized by sharp fluctuations, which indicates the absence of clear strategic guidelines on the part of the State management of financing the environmental protection measures.

Analysis of the correlation between foreign direct investment and current environmental protection costs (Table 5) indicates the existence of a moderate relationship between the factors (correlation coefficient 0.36). The dependence established by this research makes it possible to take into account the specified factors in further modeling and development of the policy of foreign direct investments in terms of its environmental orientation.

Table 5: Current environmental protection costs, in million USD

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Cost	1505	1741	1792	1164	769	735	758	901	1057	1040

Source: SSSU (2021d)³²

³¹ SSSU, 'Generation and management of waste (1995-2020)' (2021c)
<http://www.ukrstat.gov.ua/operativ/menu/menu_u/ns.htm> (in Ukrainian)
accessed 12 January 2024

³² SSSU, 'Current expenses for the protection of the natural environment by types of environmental protection measures (2000-2020)' (2021d)
<http://www.ukrstat.gov.ua/operativ/menu/menu_u/ns.htm> (in Ukrainian)
accessed 12 January 2024

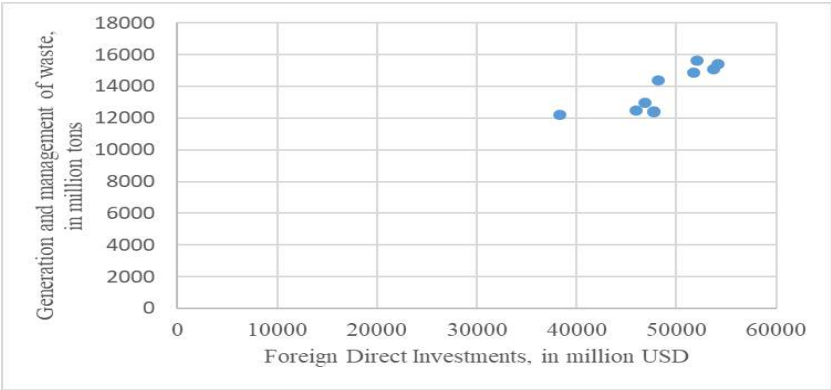


Figure 1: Correlation between foreign direct investment and waste generation

The ecological efficiency index is of great importance in a study of foreign direct investment. It is 49.5 for Ukraine. According to this indicator, Ukraine is ranked 60th out of 180 countries in the world.³³ Considerable attention in the study of foreign direct investments is directed to determining its impact on the rate of depletion of productive physical land. In the pan-European context, according to the Sustainable Nitrogen Management Index (SNMI), which determines the balanced and effective use of nitrogen fertilizers with the maximum yield of agricultural crops, Ukraine ranks first in the rating.³⁴ However, the results of the study revealed a weak relationship between foreign direct investment in Ukraine and the use of mineral and organic fertilizers (Tables 6 and 7, correlation coefficients 0.27 and 0.24, respectively).

Table 6: Mineral fertilizers, in thousand tons

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Fertilizer	1266.9	1346.6	1493.8	1471.7	1415.0	1728.9	2028.1	2346.3	2338.3	2483.9

Source: SSSU (2021e)³⁵

The specified connections are not recommended to be taken into account when modeling the directions of State policy regarding foreign direct investments in the context of its greening.

³³ EPI, ‘Results Overview’ (2020) <<https://epi.yale.edu/epi-results/2020/component/epi>> accessed 12 January 2024

³⁴ Ibid.

³⁵ SSSU, ‘Agriculture of Ukraine’ (2021e) <https://ukrstat.gov.ua/druk/publicat/kat_u/2021/zb/09/zb_sg_20.pdf> (in Ukrainian) accessed 12 January 2024

Table 7: Organic fertilizers, in thousand tons

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Fertilizer	9954	9685	9652	9898	9663	9163	9274	11649	11382	10210

Source: SSSU, (2021e)³⁶

It is important in this study to establish a relationship between foreign direct investment and the area of the nature reserve fund, as it is one of the Indicators of the progress of green growth (Table 7).³⁷

Table 8: Land area of nature reserves, in thousand ha

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Area	1382	1565	1576	1688	1769	1997	1997	1997	2064	2066

Source: State Statistics Service of Ukraine (2020b)³⁸

The correlation between foreign direct investment and the land area of nature reserves is expressed by a correlation coefficient of 0.12, which indicates its low density. The specified relationship is insignificant, therefore, it will not be taken into account in the further modeling of the directions of State policy regarding foreign direct investments in the context of its greening. One of the theoretical directions for identifying the influence of foreign direct investment is the growth of energy consumption from renewable sources (Table 9). In Ukraine, at the end of the studied period, there is an increase in the consumption of this type of energy. However, this study has revealed a low density of connection between foreign direct investment and consumption of energy from renewable sources (correlation coefficient = 0.24). Therefore, this direction will not be included in further research.

For the objectivity of this research, it is important to take into account the presence or absence of correlation between foreign direct investment and the level of innovativeness of the country, which includes the graduates of doctoral studies, higher Education, international joint publications, citation of publications, expenses for scientific research work in the public sector, expenses for research and

³⁶ Ibid

³⁷ Pecheniuk, A., Borkovska, V., Pecheniuk, A. and Mushenyk, I., 'Ecosystem Services to Support the Diversification of Agricultural Production (2022) 5(1) Grassroots Journal of Natural Resources 73-87, <<https://doi.org/10.33002/nr2581.6853.050106>>

³⁸ SSSU, 'The environment of Ukraine. Nature reserve fund' (2020b) <http://www.ukrstat.gov.ua/druk/publicat/kat_u/publnav_ser_u.htm (in Ukrainian)> accessed 12 January 2024

development in business, innovative products/processes, marketing innovations, innovative cooperation, public-private joint publications, private co-financing of State research and development, patent applications, applications for obtaining trademarks, application design, export of medium and high-tech products, export of knowledge-intensive services (Table 10).

Table 9: Total supply of energy from renewable sources, in thousand toe (ton on energy fuel)

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Energy	2514	2476	3166	2797	2700	3616	3907	4303	4335	5685

Source: SSSU (2018)³⁹; SSSU (2021f)⁴⁰

Table 10: The level of innovativeness of Ukraine

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Innovation Score	35	35	37	39	37	39	35	32	30	30

Source: European Commission (2021)⁴¹

The correlation coefficient between foreign direct investment and the level of innovation is (-0.57). It demonstrates the presence of an average degree of inverse correlation dependence, in which the level of innovativeness of the country decreases as the level of foreign direct investment increases.

This correlation dependence can be included in the model for the formation of directions of State policy regarding foreign direct investments in the context of its greening. The identified correlational dependencies make it possible to determine potential areas of improvement of State policy regarding foreign direct investments in the context of strengthening its environmental component. These include: waste generation, expenses for the protection of the natural environment and environmental protection measures, and the level of innovativeness of the country.

³⁹ SSSU, 'Energy consumption from renewable sources for 2007-2018' (2018) http://www.ukrstat.gov.ua/operativ/operativ2016/sg/ekolog/ukr/esp_vg_u.htm (in Ukrainian) accessed 12 January 2024

⁴⁰ SSSU, 'Energy consumption based on renewable sources for 2007-2020' (2021f) <https://ukrstat.gov.ua/operativ/menu/menu_u/energ.htm> (in Ukrainian) accessed 12 January 2024

⁴¹ Ibid, *supra* note 19.

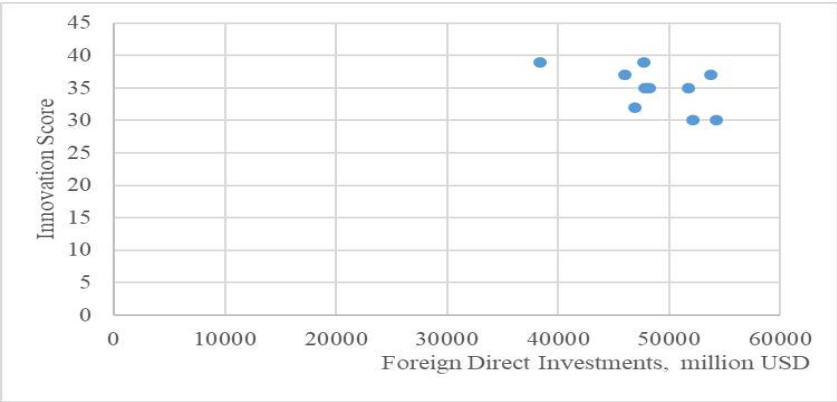


Figure 2: Correlation between direct foreign investment and the level of innovativeness of the country

The forecast value of waste generation (Figure 3) indicates the possible dynamics of its level of reduction, which could give grounds for a positive assessment of the nearest ecological prospects. The approximation coefficient is 86%, which determines the level of realism of the forecast. However, the study does not take into account the consequences of military actions in Ukraine, which can lead to a radically opposite result of forecasting this indicator.

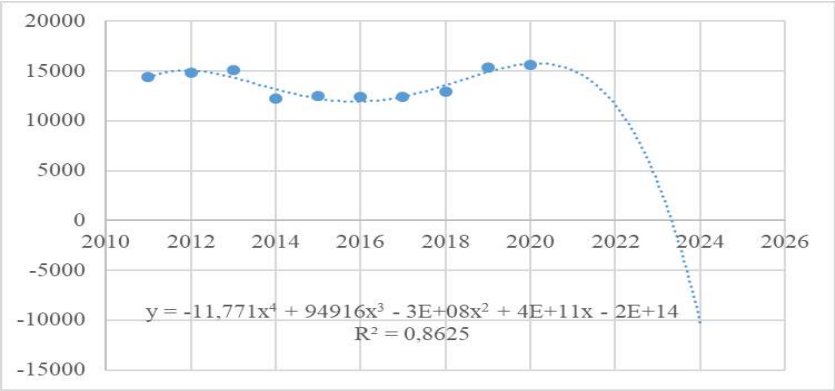


Figure 3: Forecast values of waste generation

The forecast of current costs for environmental protection (Figure 4) shows their growth until the end of 2024. In the context of the revealed correlation dependence between foreign direct investments (average degree of linear relationship), this factor can affect

the growth of foreign direct investments, and vice versa. Foreign investment can contribute to increasing these current costs.

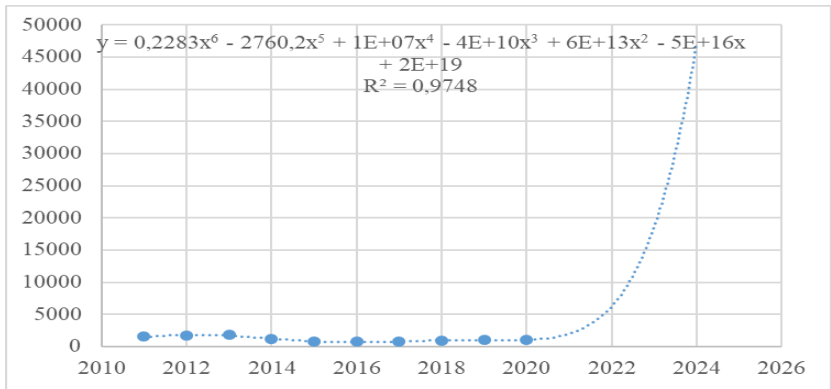


Figure 4: Forecast of current costs for environmental protection

The coefficient of approximation for this forecast is relevant and is 94%. The forecast of the level of innovativeness of Ukraine shows positive dynamics for the indicator in the near future. In this context, it is worth noting that in Ukraine there is a crisis situation with the financing of scientific research and the activation of innovative activities, especially during the period of martial law. For example, for the period from 2010 to 2018, the volume of expenses decreased by 1.6 times, while almost all European countries adhere to the State policy of increasing spending on scientific research.

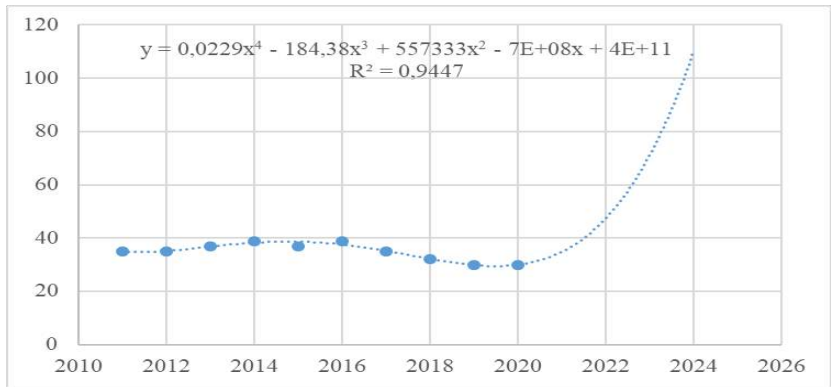


Figure 5: Forecast of the level of innovativeness of Ukraine

4. CONCLUSION

A feature of foreign direct investments in Ukraine is that they largely originate from offshore zones. This narrows down its innovative component and the changes it can bring in terms of ecological development. Empirical substantiation of the policy of foreign direct investment determined that its directions can be the regulation of waste generation, a policy of regulating the costs for environmental protection, as well as the level of innovativeness of the country. The forecast models developed in this study indicate a tendency to decrease the volume of waste generation in Ukraine, which will likely affect the volume of foreign direct investment. The growth in the forecast model of the indicator of the innovation of the country also indicates a possible reduction in the volume of foreign direct investments in the near future. The forecasted trend of increasing costs for environmental protection gives grounds for the assumption of a possible slight increase in the volume of foreign direct investments but may also indicate inflationary processes. Our forecast did not take into account the impact of military operations on various aspects of foreign direct investment. This can affect the accuracy and reliability of the predictive models. Thus, in general, Ukraine's foreign direct investment policy in the context of environmental or innovation indicators should be based on a pragmatic approach that understands its contradictory impacts on the recipient country.

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Summary and Conclusion

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ABSTRACT

Covering international contexts, the book explores historical analyses of ecosystem approaches, emphasizing the foundational role of international environmental law. Environmental justice and climate change emerge as central themes, highlighting the critical need for robust legal frameworks and global collaboration. The narrative underscores the intricate relationships between legal structures, environmental challenges, and societal well-being. Themes such as the impact of foreign direct investment on environmental policy and the nexus of water, energy, and food strategies reveal complex connections between legal frameworks, environmental issues, and societal welfare. Lessons drawn from environmental rights, transboundary pollution, decentralization, and Ukraine's environmental policy contribute to a holistic understanding of the complex challenges associated with sustainable development, emphasizing the need for effective legislation, control mechanisms, environmental innovation, and consideration of environmental indicators in policies to attain a harmonious balance between environmental conservation and human progress. Recommendation part advocates for innovation, collaboration, and the integration of environmental considerations into legal structures to achieve sustainable development.

Keywords: Environmental Law; Ecological Sustainability; International Collaboration; Legal Frameworks

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1. SUMMARY AND CONCLUSION

All the chapters in the book collectively explore diverse aspects of environmental law and policy, spanning international contexts and focusing on Ukraine's experiences. Topics range from historical analyses of ecosystem approaches to challenges in achieving sustainable development goals. Emphasizing environmental justice, disaster management, and climate change, the chapters underscore the need for robust legal frameworks and international collaboration. Issues like foreign direct investment's impact on environmental policy and the nexus of water, energy, and food strategies reveal the intricate relationships between legal structures, environmental challenges, and societal well-being. In this book, Ukraine serves as a microcosm, offering lessons for nations navigating similar challenges in the pursuit of harmonious balance between environmental conservation and human progress. Advocating for innovation, collaboration, and integration of environmental considerations into legal frameworks, the chapters contribute to a holistic understanding of environmental law's multifaceted role in steering sustainable development.

In chapter 2 and 4, the historical evolution of the ecosystem approach in international environmental law is elucidated, emphasizing its recognition as a foundation for subsequent developments, particularly within the Convention on Biological Diversity. This chapter sets the stage for understanding the overarching principles that guide environmental discourse on a global scale. Chapters 3, 5, 6, and 8 shift the focus towards environmental justice, Indigenous rights, litigation challenges, and the impact of invasive species, portraying a complex web of legal intricacies that intersect with societal and ecological well-being. The narrative underscores the need for comprehensive legal frameworks that address the diverse facets of environmental issues and protect the rights of communities and ecosystems. Chapter 7 pivots towards the delicate balance between international trade and environmental protection, revisiting the metaphorical "invisible elbow" proposed by David Hunter. This metaphor becomes a lens through which the chapter examines the progress and challenges in harmonizing international trade objectives with environmental considerations.

The chapters 9 to 17 offer a closer look at disaster management, conceptual challenges in environmental rights, transboundary pollution, and Ukraine's endeavours in decentralization and environmental policy.

These chapters spotlight the intersectionality of environmental issues and the legal frameworks needed to navigate and mitigate the complex challenges associated with sustainable development. Chapter 6 dives into the prospects and challenges of proving environmental harm in litigation, shedding light on the intricacies victims face in seeking justice. It proposes doctrinal legal research methodologies and content analysis to navigate the complexities of environmental harm litigation. Likewise, chapter 8 navigates the international realm, exploring solutions to mitigate mining contamination in the Elk–Kootenai River Watershed through the application of international law to address transboundary pollution. Importantly, chapter 10 explores the legal dimensions of climate change in Ukraine, analyzing the conceptual challenges and constitutional aspects that shape the country's response to this urgent global issue. Further, chapter 15 contributes to the discussion on Ukraine's reform, specifically focusing on decentralization processes and their impact on environmental protection. The legal aspects of this reform are scrutinized, highlighting the need for effective legislation and its implementation. In continuum, chapter 16 further dissects Ukraine's environmental policy, emphasizing the theoretical and practical challenges involved in its evolution. The research suggests improvements, including strengthening control mechanisms, fostering environmental innovation, and implementing effective environmental audits. Lastly, in chapter 17, the authors examine foreign direct investment as an indicator of environmental policy, examining the interconnectedness of economic activities and environmental impact. This chapter emphasizes the need for rational policies that consider environmental indicators to achieve sustainable development.

Thus, jointly, the book contributes to a holistic understanding of environmental law and policy, emphasizing the intricate relationships between legal frameworks, environmental challenges, and societal well-being. The insights provided serve as valuable lessons for nations navigating similar challenges in the pursuit of a harmonious balance between environmental conservation and human progress. Advocating for innovation, collaboration, and the integration of environmental considerations into legal structures, these chapters form a mosaic of knowledge that informs sustainable development efforts globally.

The key lessons drawn from each of the chapters are summed up as follows:

Chapter 2: The Ecosystem Approach in International Environmental Law before the Convention on Biological Diversity

- This chapter analyzes the formation and development of the ecosystem approach in international environmental law before the Convention on Biological Diversity.
- It concludes that protection and conservation of natural ecosystems gained international support before the Convention, laying the groundwork for further development.

Chapter 3: Environmental Justice and Globalization: Putting a Focus on Indigenous Peoples and Local Community Rights and Perspectives

- Explores the challenges to environmental justice from the perspectives of social leaders defending environmental and Indigenous rights in Colombia, Peru, and Chile.
- Identifies obstacles faced by environmental and Indigenous rights defenders, including denial of participation mechanisms and lack of transparency, emphasizing the need for reform.

Chapter 4: Ecosystem Approach in Dealing with Invasive Alien Species: International, European, and Ukrainian Experience of Legal Regulation

- Recognition of the ecosystem approach at the international level, particularly within the Convention on Biological Diversity.
- EU regulations on nature protection and the European Commission's definition of invasive species, restricting activities contributing to their dissemination.
- Need for reform in the current Ukrainian environmental legislation for consistent and comprehensive regulation of invasive alien species.

Chapter 5: Conceptual Challenges to the Recognition and Enforcement of the Right to Clean, Safe and Healthy Environment

- Examines the conceptual and theoretical challenges to the recognition and enforcement of the right to a clean, safe, and healthy environment.
- Highlights the diversities in the interpretation of the right across jurisdictions, emphasizing the need for clarity in legal definitions.

Chapter 6: Prospects and Challenges to Prove Environmental Harm in Litigation: Status Quo in Nigeria

- Explores the challenges victims face in proving environmental harm in litigation, focusing on Nigeria.
- Recommends the application of the principle of Res Ipsa Loquitur to streamline the process and promote environmental justice.

Chapter 7: International Trade and Environmental Protection: Revisiting David Hunter's 'Invisible Elbow' Destroying the Common Goods Created by an Invisible Hand'

- Revisits the metaphor of the "invisible elbow" in the context of international trade and environmental protection.
- Examines the progress and challenges in harmonizing international trade objectives with environmental considerations.

Chapter 8: International Law Application to Transboundary Pollution: Solutions to Mitigate Mining Contamination in the Elk–Kootenai River Watershed

- Focuses on the application of international law to address transboundary pollution, specifically in the Elk–Kootenai River Watershed.
- Proposes short-term and long-term solutions to effectively manage and resolve transboundary mining contamination.

Chapter 9: Convergence of Environmental and Economic Law in the Sphere of Environmental Protection and Natural Resource Management in Ukraine

- Analyzes the convergence of environmental and economic law in Ukraine, emphasizing the need for alignment with conceptual and strategic foundations.
- Identifies challenges and outlines ways to improve legislation for effective environmental protection and natural resource management.

Chapter 10: The Legal Landscape of Climate Change in Ukraine: Challenges and Prospects

- Explores the current state of legal regulation of climate change issues in Ukraine.
- Critically analyzes national legislation, strategic documents, and proposes suggestions for improvement.

Chapter 11: The Extent of Causality and Burden of Proof for Climate Related Intangible Loss Damage in At-Risk Settlements (Fiji Islands)

- Investigates causality and burden of proof in climate-related intangible loss damage in at-risk settlements, particularly in Fiji Islands.
- Emphasizes the value of probabilistic event attribution and addresses the challenges in establishing evidence for climate-related losses.

Chapter 12: Using Clean Energy for Sustainable Development in Vietnam: Facts and Solutions

- Examines legal policies and regulations in Vietnam to promote clean energy.
- Identifies issues related to clean energy in Vietnam and recommends solutions.
- Utilizes legal methods and analysis of Vietnam's legal policy on energy activities.

Chapter 13: Integrating Water, Energy, and Food Strategies: Impact on Malawi's Sustainable Development Goals Achievement

- Investigates challenges faced by Malawi in meeting escalating demands for food, water, and energy.
- Highlights policy initiatives impacting food production, but concurrent challenges in water and energy sectors.
- Advocates for a nexus approach, emphasizing interconnectivity and cross-sectoral collaboration.

Chapter 14: The Role of Energy Directives in Ensuring EU Energy Security and the Problems of Implementation in Ukrainian Legislation

- Examines the role of energy directives in ensuring EU energy security, tracing legal developments from the Treaty of Paris to the fourth energy package.
- Systematically analyzes the implementation of EU Energy Directives in Ukrainian legislation, focusing on key laws and the Energy Strategy of Ukraine till 2035.

Chapter 15: Ukrainian Reform of State Power Decentralization as a Way to Sustainable Development: Ecological and Legal Aspects

- Analyzes environmental and legal components of decentralization in Ukraine for sustainable development.

- Highlights legislation, planning processes, and the role of cadasters and registers.
- Identifies legal perspectives for environmental control and financial resource redistribution.

Chapter 16: Legal Dimensions of Environmental Policy in Ukraine

- Theoretically and practically analyzes organizational and legal issues in Ukraine's environmental policy.
- Advocates for prioritizing environmental reforms in biodiversity protection, pollution control, waste management, and more.
- Identifies areas for improvement in legislation to enhance post-war reconstruction.

Chapter 17: The Relationship between Environmental Policy and Foreign Direct Investment

- Examines direct foreign investment in the context of global environmental policies.
- Focuses on Ukraine, where much foreign investment is believed to originate from offshore zones.
- Empirically substantiates the rational policy of direct foreign investments related to environmental indicators.
- Presents forecast models for the development of foreign direct investment policy in Ukraine.

Finally, the diverse array of chapters within this compilation offers a comprehensive exploration of pressing environmental and legal issues across various jurisdictions. The interplay between environmental policies, legal frameworks, and sustainable development emerges as a recurrent theme throughout these analyses. From the challenges of mitigating climate change to the intricacies of foreign direct investment impacting environmental policies, the chapters collectively underscore the urgency of global cooperation. As the world grapples with environmental degradation, the call for a harmonious convergence of legal, economic, and ecological principles resonates strongly. The constituent chapters collectively advocate for a paradigm shift, urging for holistic approaches, improved legislation, and international collaboration. It is evident that addressing these complex challenges demands innovative thinking, strategic policy formulations, and a commitment to sustainable practices at both local and global levels. This edited book serves as a valuable resource for scholars, legal experts,

policymakers, and practitioners navigating the intricate landscape of environmental law and sustainable development.

2. RECOMMENDATIONS

These generic recommendations provide a framework for policymakers, legislators, and stakeholders to consider when addressing environmental sustainability and legal frameworks on a global scale.

2.1 General Recommendations

1. *Global Collaboration for Biodiversity Protection:*
 - Facilitate international cooperation to protect biodiversity, addressing the threat of invasive alien species through shared knowledge and coordinated efforts.
2. *Integrated Resource Management Strategies:*
 - Promote an integrated approach to resource management, acknowledging the interconnectedness of water, energy, and food systems for sustainable development.
3. *Comprehensive Environmental Legislation:*
 - Advocate for comprehensive and streamlined environmental legislation globally, addressing gaps and inconsistencies to create effective regulatory frameworks.
4. *Strategic Implementation of Energy Policies:*
 - Strengthen the strategic implementation of energy policies globally, aligning national legislation with regional standards to enhance energy security and sustainability.
5. *Empowered Local Governance for Sustainability:*
 - Support decentralized governance structures worldwide, empowering local communities for effective natural resource management and sustainable development.
6. *Financial Incentives for Sustainable Practices:*
 - Introduce financial incentives globally, such as tax benefits, to encourage the adoption of sustainable practices, aligning with international sustainability goals.
7. *Innovation in Environmental Policies:*
 - Encourage innovation in environmental policies worldwide, addressing challenges in waste management, pollution control, and emission reduction.

8. *Unified Global Climate Change Legislation:*
 - Advocate for a unified approach to global climate change legislation, addressing conceptual challenges and providing a clear legal framework for environmental protection.
9. *Transboundary Pollution Solutions Worldwide:*
 - Develop international frameworks and mechanisms to address transboundary pollution effectively, providing solutions for regions facing contamination challenges.
10. *Flexible Pricing for Sustainable Consumption:*
 - Implement flexible pricing mechanisms for sustainable products globally, incentivizing environmentally friendly practices and supporting green industries.
11. *Enhanced Environmental Control Worldwide:*
 - Strengthen environmental control mechanisms globally, focusing on compliance with standards, effective resource management, and the application of environmental laws.
12. *Effective Global Disaster Risk Reduction:*
 - Improve disaster risk reduction planning globally, addressing financial constraints, simplifying legal processes, and providing support for victims of environmental harm.
13. *Regional Coordination for Sustainability:*
 - Strengthen regional coordination mechanisms globally to address environmental challenges, ensuring long-term sustainability of resources and ecosystems.
14. *Inclusive Environmental Justice Worldwide:*
 - Promote inclusive environmental justice globally, addressing challenges faced by marginalized communities and ensuring fair participation in decision-making processes.
15. *Economic Innovation for Global Sustainability:*
 - Encourage economic innovation aligned with global sustainability goals, emphasizing the role of foreign direct investment in fostering environmentally responsible practices.
16. *Transparent Implementation of Energy Efficiency Laws:*
 - Ensure transparent implementation of energy efficiency laws globally, focusing on effective enforcement mechanisms and regular monitoring of compliance.

17. *Transition to Green Economy Worldwide:*

- Facilitate the global transition to a green economy, aligning environmental and economic laws and fostering comprehensive legal frameworks for natural resource management.

18. *Harmonized Legal Security in Global Energy Sector:*

- Advocate for harmonized legal security in the global energy sector, ensuring continued development, competition, and increased use of green energy while mitigating emissions.

2.2 Region-Specific Recommendations

These recommendations address key themes and challenges identified across the chapters in regional or country contexts, providing actionable steps for policymakers, legislators, and stakeholders to enhance environmental sustainability and legal frameworks.

1. *International Collaboration for Invasive Species Management:*

- Foster international collaboration and information exchange to effectively manage invasive alien species, recognizing their global impact on biodiversity.

2. *Nexus Approach to Resource Management:*

- Advocate for a nexus approach, understanding the interconnectedness of water, energy, and food strategies, particularly in regions like Malawi facing escalating demands.

3. *Holistic Environmental Legislation in Ukraine and Vietnam:*

- Enhance and streamline environmental legislation in Ukraine and Vietnam to address gaps and inconsistencies, ensuring comprehensive and effective regulatory frameworks.

4. *Strategic Implementation of EU Energy Directives:*

- Strengthen the strategic implementation of EU Energy Directives in Ukraine, aligning legislation with regional standards to enhance energy security and sustainability.

5. *Decentralization for Sustainable Development:*

- Promote decentralized governance structures to empower local communities in Ukraine, ensuring effective natural resource management and sustainable development.

6. *Financial Incentives for Clean Energy Adoption:*
 - Introduce financial incentives, such as tax benefits, to encourage the adoption of clean energy practices, aligning with global sustainable development goals.
7. *Innovative Environmental Policies in Ukraine:*
 - Encourage innovation in environmental policies in Ukraine, addressing challenges in waste management, pollution control, and emission reduction.
8. *Unified Approach to Climate Change Legislation:*
 - Advocate for a unified approach to climate change legislation globally, addressing conceptual challenges and providing a clear legal framework for environmental protection.
9. *Transboundary Pollution Solutions:*
 - Develop international frameworks and mechanisms to address transboundary pollution effectively, providing solutions for regions like the Elk–Kootenai River watershed.
10. *Flexible Pricing for Ecological Products:*
 - Implement flexible pricing mechanisms for ecological products, incentivizing sustainable consumption practices and supporting environmentally friendly industries.
11. *Strengthened Environmental Control in Ukraine:*
 - Strengthen environmental control mechanisms in Ukraine, focusing on compliance with standards, effective resource management, and the application of environmental laws.
12. *Effective Disaster Risk Reduction in Nigeria:*
 - Improve disaster risk reduction planning in Nigeria, addressing financial constraints, providing legal support, and simplifying the litigation process for victims of environmental harm.
13. *Enhanced Regional Coordination in Malawi:*
 - Strengthen regional coordination mechanisms in Malawi to address water-related diseases, resource degradation, and ensure long-term sustainability of food, water, and energy security.
14. *Inclusive Environmental Justice in Latin America:*
 - Promote inclusive environmental justice in Latin America, addressing challenges faced by Indigenous peoples and local communities, and ensuring fair participation in decision-making processes.

15. *Economic Innovation for Sustainable Development:*

- Encourage economic innovation aligned with sustainable development goals, emphasizing the role of foreign direct investment in fostering environmentally responsible practices.

16. *Transparent Implementation of Energy Efficiency Laws:*

- Ensure transparent implementation of energy efficiency laws in Ukraine, focusing on effective enforcement mechanisms and regular monitoring of compliance.

17. *International Joint Commission Recommendations for Canada-US Cooperation:*

- Leverage the International Joint Commission for Canada-US cooperation in addressing mining contamination in the Elk–Kootenai River watershed, offering recommendations for both short-term and long-term solutions.

18. *Harmonized Legal Security in the EU:*

- Advocate for harmonized legal security in the European Union's energy sector, ensuring continued development, competition, and increased use of green energy while mitigating emissions.

Last but not least, in this insightful exploration of environmental law and policy, the book unfolds rich embroidery of themes, ranging from the historical evolution of ecosystem approaches to the intricate relationships between legal frameworks, environmental challenges, and societal well-being. Using Ukraine as a compelling case study, the narrative delves into crucial topics such as environmental justice, disaster management, and climate change, urging for robust legal frameworks and global collaboration. The book advocates for innovation and collaboration, emphasizing the integration of environmental considerations into legal structures to achieve sustainable development. Readers are invited on a journey to grasp the complex challenges associated with sustainable development, offering valuable insights that resonate globally and underscore the importance of achieving a harmonious balance between environmental conservation and human progress.

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The editor of this book, Dr. Hasrat Arjjumend is the *Founder President & CEO* of The Grassroots Institute (Canada). Additionally, as *Executive (Chief) Editor*, he manages and executes the Grassroots Journals (5 journals) published by The Grassroots Institute in partnership with different universities. He is involved with the International Year of Rangelands and Pastoralists (IYRP 2026) as *Co-Chair*, RISG – Central Asia & Mongolia, and as *Member*, RISG Europe. Educationally, he attained *Mitacs Elevate Postdoctorate* at Université de Montréal Faculté de Droit, Québec (Canada) in Agrarian/Environmental Law (laws of agri-biologicals in Canada, India, Ukraine and EU), PhD in International Studies (Biodiversity Law & Governance), PG Diploma in Environmental Law, MPhil in Natural Resource Management (MRM), MSc in Environmental Science, MA in Public Administration, MBA Human Resources, and BSc Hons in Botany. Additionally, he received advanced practical training from the Canada, UK, Sweden, Thailand, Russia, India, Netherlands and the USA.

His first significant study was his MPhil dissertation work in 1998-99. He wrote a comprehensive critique of nature conservation policies worldwide. It led to denotification of a wildlife sanctuary in India for the interests of farmers/people. It was the first incidence in the conservation history of the Indian subcontinent when a protected area was scrapped for undoing the displacement of local inhabitants. Furthermore, during the past two and half decades, he completed multiple landmark studies and significant fieldwork focused on Indigenous people and their issues in Asia, as well as comparative studies on a global basis, culminating in his PhD work, which encompassed the evaluation of the extent of space, recognition,

participation and involvement for/of Indigenous people not only in international law making (Nagoya Protocol), but also in domestic ABS (access and benefit sharing) law making & implementation processes. As the biocultural rights of Indigenous people are key to conservation and sustainable use of biodiversity, the domestic ABS laws require reorientation to be sufficiently effective in translating the spirit of international ABS laws. As a result, benefit-sharing processes (as per 3rd objective of CBD) and biopiracy of traditional knowledge and bioresources of Indigenous people cannot be checked effectively. He discerned and amplified that adequate participation and involvement, which had been lacking across the processes, of Indigenous peoples and local communities during the crafting of both the Nagoya Protocol and its corresponding domestic ABS legislation. His work brought this serious issue to the fore and debates have started within and outside CBD forums. Such a success added to progressive discourses towards advocating and asserting for Indigenous rights, dignity and self-determination. Among his current research orientations is the work on “rangeland governance and pastoralism” involving legal, policy, and social-ecological dimensions. Additionally, he has been trying to discover the utility of modern technologies by mobile pastoralists in managing their livestock across the changing environments and fragmented rangelands.

Along with the direct action with communities, he has carried out a significant quantum of training/teaching and writing/publishing. He has taught a variety of courses; to name but a few: Agriculture and Ecology, Organic Farming Systems, Governance of Land & Water Commons, Biodiversity Law, Pastureland Policies & Law, Development of Land Resources, Watershed Development in Arid Zones, Water Resources Management, Participatory Forest Management, Grasslands & Rangeland Management, Environmental Governance, Research Methods & Techniques, Natural Resource Management, and Urban Green Spaces. These courses constituted the milestones in the core ‘natural resource management’ syllabus. As an engaged scholar using interdisciplinary approaches, he seeks to provide experiential learning opportunities that not only encourage personal development of participants, but also the intercultural thinking that best informs global perspectives. To this end, being a trainer/teacher is the ultimate opportunity to inspire, empower, and provide transformative experiences for students. His teaching & training philosophy is

grounded in his life experiences; he is a self-made person with diverse life experiences in the developing world that he integrates into classroom content. As a trainer/teacher, he emphasizes the mutual benefits of engaged scholarship and the development of an individual's social, emotional, intellectual, and creative well-being. This includes taking risk, thinking outside-the-box, and providing a passionate and fulfilling learning experience. Additionally, as an educator and researcher, his career has been centered on being a change-agent, advocating for solutions. Through training/teaching, he considers that he is transferring to youths and students not only the knowledge, but also an energy that they may retain to transform their lives. Be it a science subject, policy topic or societal reality there is a lot to share by him with the students/participants. Using participatory learning methods, he considers training/teaching as a source of empowerment, transformation and leadership.

As a change agent, he set in a few exceptional model accomplishments. During 2008-11, in the capacity of Project Director of EU-funded IEUPC Education Project, not only he conceptualized and designed the project, but he also created unique procedures, processes, systems, institutions and leaderships that resulted in empowerment of urban poor families in 3 cities for educating girl children and female youths. The exemplary work received UNESCO recognition in 2011. Embedded in that EU project, the Young Citizens Leadership initiative was his exceptional endeavour. Later during 2013-16, he organized agro-pastoralist communities by using Pastureland Policies and Legal Provisions provided in Agrarian & Local Governance Laws in Rajasthan (West India). In the capacity of Dean/Sr. Manager at Foundation for Ecological Security, he nurtured 1017 community collectives (institutions) to liberate about 30,000 hectares of pasturelands (commons) from clutches of local powerful elites, and institutional ownership of pastoral communities had been restored. Liberating lands by him from land grabbers was life threatening work. It brought meaningful change in governance patterns of natural resources impacting livelihoods of poor mass in India's arid zone. In addition to these two most commendable works, he used to be People-Centred Advocacy Campaigner from 1996 till 2012, apart from a popular writer journalist in editorial columns for 10 years. His preferred array of interventions, especially from 2005 to 2016, revolved around building the Stewardship

among youths. He enabled thousands of youths who honed their leading capabilities with distinct vision and high-energy convictions.

Professionally, he possesses >30 years' experience of research, training, teaching, field action and organizational management, dealing with multidisciplinary areas of Environment, Natural Resources, Governance, Development, and Indigenous Rights. In the past he served, *inter alia*, as *Senior Agroecology Specialist* with Earth Alive Clean Technologies Inc. Canada, *Assistant Professor* (Natural Resources & Environmental Management) at Ethiopian Civil Service University Addis Ababa, *Dean/Sr. Manager* at FES Prakriti Karyashala Rural College (Rajasthan Campus, India), *Executive Director* of Grassroots India Trust, *Project Director* of EU-funded IEUPC Project, *Senior Program Officer* at Society for Participatory Research in Asia, *Research Officer* at National Centre for Human Settlement & Environment, *Biologist-I* at Wildlife Institute of India (Govt. of India). For over 18 years, he contributed as *Visiting/Guest Faculty* to several institutions in India and Europe, apart from being a *Consultant* to leading NGOs. Having inherent capacities of evolving, building and developing the institutions, he acted as a *leader* of several people-centred initiatives & forums (e.g., Madhya Pradesh Chapter of FIAN International – Germany), and later devolved the systems after completion of institutionalization process. Moreover, he was *Mitacs Elevate Fellow* 2017-20 in Canada, *Senior Legal Fellow* at Centre for International Sustainable Development Law (CISDL) affiliated to McGill University in Montreal/Canada, *Visiting Fellow* at Yaroslav Mudriy National Law University of Ukraine 2017-2020, *Commonwealth Professional Fellow* 2007 in England and *Social-Impact Fellow* 2008-10 in Mumbai, apart from being the recipient of the *Award of Excellence for International Partnership* 2021 from Valahia University of Targoviste Romania, CISDL Canada's *Legal Research Award* 2019, UNESCO-Wenhui Award for Educational Innovation 2010 (Asia-Pacific), *Chairman's Gold Medal* 1997-98 in MRM Natural Resource Management, USA's *Charles Evans Hughes Memorial Scholarship* 2007, and *S.J. Jindal Trust Scholarship* 1990-91. He has working exposure across half of India's geography (13 states), and working/study exposure to East Africa, South Asia, South-East Asia, Scandinavia, West Europe, East Europe and Canada. To his credit are about 192 publications of varied types (see Publications List), some of them published in WoS/Scopus indexed international journals. He is sitting in Editorial Boards of the European journals: EU Agrarian Law,

Journal of Legal Studies, and Environmental Economics & Sustainable Development.

As the *Founder President & CEO* of The Grassroots Institute Canada, his record of leadership is outstanding. Since the inception in 2018, he has developed a global capacity building program ‘Summer Field School on Mountain Ecosystems & Resources Management’ of which the 2020-21 version was highly successful. About 66 universities and organizations from 21 countries partnered/ collaborated (and nearly 630 people from 69 countries took part). Likewise, the Summer Field School 2023 www.grassrootsglobal.net/mer2023 was led by 9 Lead Partner universities/organizations from Italy, Romania, Ukraine, India, Kyrgyzstan and Hungary, with 30 General Partners and 7 Collaborators belonging to 18 countries. Nearly 600 people representing 60 countries took part in this program in 2023. To bridge the gaps between field practice/ action and the knowledge generated in academic or research institutions, he is developing ‘ggN - Grassroots Global Network’ [www.grassrootsglobal.net], which would be a massive networking platform on natural resources management, policy and practice. While imagining a global lectures bank, the Global Lectures | Local Impacts <https://www.grassrootsinstitute.ca/gli> is his new and unique initiative that allows “lecture pooling”, whereby multiple institutions can share the same virtual lecture simultaneously. This amplifies the reach of these valuable lectures to a wider audience across the world. To create space for leadership and skill development by the senior, mid-career and young scientists and professionals, he has successfully started the Grassroots Global Leadership Program <https://www.grassrootsinstitute.ca/glp>. Acting as publishing wing of TGI, the ‘Grassroots Journals’ www.grassrootsjournals.org was initiated by him in 2018 and currently, in the capacity of *Executive (Chief) Editor*, he is successfully operating 5 journals, namely ‘Grassroots Journal of Natural Resources’ [WoS indexed], ‘Agrobiodiversity & Agroecology’, ‘Journal of Environmental Law & Policy’ [HEIN indexed], ‘Journal of Policy & Governance’ [HEIN indexed] and ‘Pastures & Pastoralism’. In a new partnership model, he is initiating an Online Education portfolio of TGI on the website <https://www.grassrootsinstitute.ca>. It is envisaged to take the shape of an educational institution. A complete present and future map of TGI can be understood from the main website www.grassrootsinstitute.net. Finally, Dr. Arjjumend’s leadership is distinctly reflected in his networking and partnership building commitments and enthusiasms.

Globally, he has developed a large network with academic, research, action and policy institutions, to include signed partnerships with nearly 90 universities, institutes, national parks, city councils, NGOs and networks. He is instrumental in creating a pool of over 450 experts, professors, scientists and professionals associated with and voluntarily contributing to TGI's different initiatives.

His current areas of academic & action interests include *Rangeland Ecosystems and Pastoral Livelihoods*; *Laws & Governance of Grazing Commons*; *Governance of Natural Resources*; *Resource Rights of Indigenous People*; *Agrarian Laws & Policies*; *Water Policies and Management*; *Agroecology*.

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Read the Chapter 1 and 18 of this book, or the links:
https://grassrootsinstitute.net/hasrat_arjjumend.html
<https://grassrootsinstitute.ca/books/hasrat-arjjumend.php>



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Edited by : **Dr. Hasrat Arjjumend**

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