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National Human Rights Commission

Minutes of the Meeting of the Core Advisory Group on Environment, Climate Change and Human Rights

on

"Impact of Climate Action on Employment"

26th October, 2023

A meeting of the Core Group on Environment, Climate Change and Human Rights on 'Impact of Climate Action on Employment' was held on 26th October 2023, at Manav Adhikar Bhavan, New Delhi in hybrid mode, under the Chairmanship of Justice Shri Arun Mishra, Hon'ble Chairperson, National Human Rights Commission. The list of participants is enclosed at **Annex – I**

2. **Shri Devendra Kumar Nim, NHRC Joint Secretary**, welcomed the Chair, senior officers of the Commission, NHRC Core Group Members, ex-officio members and the special invitees and highlighted the relevance of the agenda for the meeting, i.e. "Impact of Climate Action on Employment".

3. **Shri Bharat Lal, Secretary General and Chief Executive Officer, NHRC**, addressed the meeting, emphasizing the economic impact of climate action on livelihoods. Shri Bharat Lal highlighted the Commission's commitment to understanding the experts' insights and collaboratively developing solutions. Shri Bharat Lal referenced the Commission's ongoing work on climate change, acknowledging its diverse impacts across multiple sectors. This commitment reflects the Commission's proactive stance in addressing the challenges posed by climate action on employment and broader societal well-being.

4. **Justice Shri Arun Mishra, Chairperson, NHRC**, opened the meeting on the profound impact of climate change on employment and the associated challenges. He

highlighted global concerns such as global warming, melting ice, rising sea levels, and droughts, emphasizing their role in displacements and food insecurity. With an estimated 80 million people in India alone expected to be affected by 2030, the consequences extend to food supply, agriculture, and water scarcity, significantly impacting human rights and the fundamental aspects of life and survival. The Chairperson underlined the interconnectedness of climate change with shelter, energy, and forestry issues, emphasizing the inevitability of employment implications as sustainable development goals are pursued.

Justice Mishra acknowledged the ongoing shift away from coal usage leading to job losses in coal mines and anticipated broader impacts across various sectors due to efforts to achieve Sustainable Development Goals (SDGs) and reduce carbon emissions. The Chairperson commended India's leadership in climate-resilient energy, recycling, and the automotive industry, aiming for zero carbon energy by 2070.

He stressed the importance of proactive measures to adapt, mitigate, and prepare for the employment implications of climate action. The Chairperson highlighted the role of a circular economy in addressing carbon emissions. Justice Shri Arun Mishra commended individuals for their contributions in their respective fields, emphasizing the international scope of the issue and the imperative to act locally while thinking globally. He called for collective efforts in alignment with Fundamental Duties, Directive Principles of State Policy (DPSP), and the right to life and a clean environment. Lastly, the Chairperson highlighted that the ramifications of climate action on employment are a critical and intricate challenge, necessitating unified efforts at both societal and national levels.

Technical Session I: Identification of Vulnerable Sectors and Assessment of Employment Impact of Climate Change

5. **Shri Sundaram Verma, Environmentalist,** highlighted the significant reliance of 55% to 60% of the rural population on agriculture. Factors such as irregular rainfall,

increased mechanization, and rising temperatures have led to unemployment and adversely impacted crop production and income, while also causing forest fires and rising sea levels due to greenhouse gas emissions. Shri Verma proposed a groundbreaking solution which involves a water-efficient method to cultivate trees, requiring only one liter of water for their entire growth cycle. This innovative approach aims to revitalize barren landscapes, offering positive ecological outcomes including oxygen generation, CO_2 absorption, water preservation, animal welfare, and the creation of job opportunities. This afforestation approach contributes to food security, sustainable livelihoods, and ecological restoration.

Further, Shri Verma emphasized that these efforts have not only saved millions of liters of water but have also created employment. Each planted tree is estimated to generate Rs. 200 annually, benefiting food, fodder, and wood resources. It was asserted that these endeavors significantly boost employment opportunities while simultaneously converting arid lands into verdant environments, nurturing agroforestry, and alleviating land degradation, thereby ensuring sustainable livelihoods.

6. **Ms. Leena Srivastava, Director & Head, Ashoka Centre for a People Centric Energy Transition (ACPET),** underscores the intertwined nature of human rights and the Sustainable Development Goals (SDGs), particularly when examining their effects on employment. All sectors and aspects of biodiversity are vulnerable, posing challenges for humanity. To address these challenges, it is crucial to identify and prioritize sectors with the most significant impact. Vulnerability is apparent both onshore and offshore, notably among the 16 million vulnerable fisherfolk in India, as well as individuals within the associated value chain, encompassing tourism and shipping sectors.

Ms. Srivastava highlighted that the agricultural sector is another area of high vulnerability due to rising temperatures, making it exceedingly challenging for rural and agricultural communities. Vulnerability is not limited to rainfed regions; even irrigated areas will face challenges due to rainfall variations linked to energy provisions in rural areas. Urban areas also face exacerbated vulnerabilities, particularly for construction

workers and those exposed to the sun, as urban populations increasingly rely on air conditioning.

Ms. Srivastava emphasized the interconnected impact of climate change on food security, nutritional security, economic well-being, livelihoods, and employment, stemming from challenges faced by resources, infrastructure, mobility, and mortality.

It was further detailed the significant challenges non-agricultural sectors face, emphasizing the critical challenge of water resources, particularly in India's Himalayan region, where the rapid melting of glaciers jeopardizes dam structures and downstream areas. These impacts on both people and livelihoods are interconnected, necessitating an integrated approach for effective mitigation.

Regarding energy provision, Ms. Srivastava stressed the vulnerability of transitioning from fossil to renewable energy sources, underlining the significant impact on employment sectors. She highlighted the necessity for substantial investment in resources and time to shift workers' skill sets to align with future sustainable economic activities.

The recommendations put forth by Ms. Srivastava centered on information dissemination, transparency concerning likely impacts, education on rights and the protection of those rights, and the participatory approaches in areas requiring significant reinforcement. She emphasized that strengthening these aspects will better prepare citizens and the nation for the anticipated vulnerabilities and their impact on livelihoods.

Technical Session II: Impact of Mitigation & Adaptation on Employment

7. Ms. Gunjan Jhunjhunwala, Programme Lead, Council on Energy, Environment and Water (CEEW), expressed gratitude to the National Human Rights Commission (NHRC) for organizing a discussion on an issue of paramount importance concerning human rights. The speaker highlighted three key areas of focus:

Firstly, Ms. Jhunjhunwala highlighted the need for a comprehensive definition of green jobs in India that takes into consideration the unique challenges faced by the country in terms of climate adaptation and vulnerabilities. It was suggested that the definition should also encompass jobs related to climate adaptation, such as those created by nature-based solutions and the bio-economy, including bio-based fuels and products. Secondly, Ms. Jhunjhunwala emphasized the need to estimate how many green jobs can be created in India based on a wider definition in a circular economy. Thirdly, Ms. Jhunjhunwala underlined the importance of identifying green jobs in the urban and rural ecosystem and how they differ from one another. It was pointed out that by 2030, 40% of India's population will be residing in urban centers, and therefore, it is crucial to identify green jobs in the urban centers. The speaker suggested that a careful consideration of the nature of the jobs created is required, such as whether they will be full-time or additional jobs. The speaker believes that jobs in nature-based solutions, such as seasonal jobs, will provide additional or supplemental income.

Regarding implementation, the speaker suggested two approaches. Firstly, the speaker suggested the strengthening the existing schemes. For instance, the scheme, Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), has on-ground flexibility in identifying work opportunities and actively upskilling the workforce likewise. Secondly, the speaker emphasized the need for actively skilling the workforce through a comprehensive skill development framework that lays out clear guidelines on different aspects of skilling the workforce.

Lastly, the speaker discussed the role of the private sector and the importance of offering incentives to onboard certain populations into their skilling roles. Ms. Jhunjhunwala gave an example of the City Council of New York that offered incentives to the private sector to encourage underprivileged neighborhoods into offering green jobs.The speaker suggested that the involvement of the private sector can provide the necessary impetus to convert a skilled labor force into an active workforce and also benefit marginalized communities.

8. **Shri Niranjan Dev Bharadwaj, Distinguished Advisor, Global Foundation for Environmental Advancement and Human Wellness,** underscored the significant influence of climate mitigation and adaptation on employment. Citing an International Labour Organization (ILO) report, it was highlighted that approximately one-third of jobs in G20 nations are directly dependent on effective environmental management and sustainability. The report indicates a net negative impact of climate change on jobs and productivity, projecting potential increases in the future. Mitigation and adaptation efforts, however, can lead to a more sustainable future and generate employment opportunities.

The ILO anticipates that actions in the energy, transport, and construction sectors aimed at limiting global warming to 2°C will have an overall positive impact on employment. Adaptation strategies, focusing on building resilience in areas such as infrastructure, water, agriculture, biodiversity conservation, and health, are crucial in addressing the inevitable impacts of climate change. This point was also underscored in the submissions received from **Shri Faiz Ahmed Kidwai, IAS, Additional Secretary, Department of Agriculture and Farmers Welfare**, as enclosed in **Annex II**.

The concept of "green jobs," defined as those with positive environmental impact contributing to a low carbon economy. India's renewable energy sector including wind and solar energy initiatives, including the installation and maintenance of solar panels and manufacturing turbines, have created substantial job opportunities. India, committed to fulfilling 50% of its energy requirements through renewable sources by 2030, is poised to generate 2.8 million new jobs in the G20 countries.

Key areas contributing to positive employment impacts include promoting energy efficiency, sustainable construction practices, expanding sustainable transportation options, fostering eco-tourism, and investing in climate-resilient infrastructure. Challenges related to job losses, innovative skills demand, uneven distribution of transition costs and benefits, and governance issues must be addressed.

Addressing challenges related to climate change mitigation and adaptation is imperative, particularly in the realm of employment. The shift towards sustainable practices can result in job losses, affecting approximately 1% of the workforce in industrialized nations during the transition between economic sectors, as indicated by the International Labour Organization (ILO). In India, the impact is pronounced in the fossil fuel sector, necessitating careful consideration of human rights issues, such as facilitating alternative employment and managing migration to other regions. Furthermore, the evolving landscape demands a workforce with innovative and technical skills, creating a demand for enhanced skill sets in the low-carbon sector. However, challenges arise in the distribution of costs and benefits, varying significantly across regions, sectors, and income groups. The lack of consensus on goals, policies, and measures during this transition further complicates matters, highlighting the need for improved governance and coordination to ensure a smoother and more equitable adaptation to the changing economic landscape.

In conclusion, a human-centered approach is crucial, prioritizing the consideration of people's livelihoods and human rights in climate policies. Just transition plans, respecting workers' rights and providing retraining opportunities, should be developed. Inclusive decision-making involving communities and workers, accessible training and education for transitioning workers, and the establishment or enhancement of social safety nets during economic transitions are essential for a comprehensive and equitable approach.

9. **Dr. Promode Kant IFS (Retd), Adjunct Professor, Advanced Institute of Wildlife Conservation, Chennai,** underscored the escalating challenges posed by climate change. With global temperatures rising by 1.2 Celsius, the resulting shifts in rainfall patterns are leading to increased floods, more severe heatwaves, and heightened vulnerability to Glacial Lake Outburst Floods (GLOFs), exemplified by the recent event in Sikkim. Uttarakhand faces heightened susceptibility to such occurrences. Factors influencing vulnerability include the length, severity, and frequency of exposure,

manifesting in landslides affecting essential transport routes, housing, and crop production, as well as forest fires and insect infestations.

The agricultural sector bears a significant brunt, with climate change impacting crop cultivation, necessitating adaptive measures. Millets prove more resilient to droughts, but pest management becomes a critical concern, demanding increased use of pesticides and weedicides and resulting in pollution from Persistent Organic Pollutants. The repercussions extend to soil nutrient loss and compromised water quality, exacerbated by heavy precipitation causing soil erosion and agricultural runoff into water bodies, leading to hypoxia. Critical to agriculture is pollination, and climate-induced changes in temperature and precipitation can disrupt this process, potentially reducing crop yields. The health risks posed to agricultural workers and livestock include exposure to extreme weather conditions, increased pesticide exposure, and the proliferation of disease-carrying pests, exacerbated by limited healthcare access.

Forests, integral to climate regulation, face varied impacts, including changes in composition and susceptibility to disturbances such as wildfires and invasive species. While some forests may benefit from increased growth due to higher temperatures, others become more vulnerable. Carbon storage is reduced, affecting forest resilience.

In the context of job creation in India's forestry sector, potential opportunities arise in plantations, localized processing, and composite panels, with an estimated 2-2.5 million additional jobs across the forest value chain. Dr. Kant emphasizes the generally positive short-term employment effects resulting from increased emergency activities and heightened investments to address climate change challenges.

Notably, Dr. Kant highlights the United Nations Human Rights Council's landmark decision regarding the Torres Strait Islands. The UNHRC acknowledged the Australian government's failure to protect the islanders from climate change consequences, violating their "right to live with dignity." The ruling recognized damage to property, livelihoods, and culture due to rising sea levels and saline water ingression.

While the denial of the right to live was not explicitly stated, compensation was awarded, marking a significant development in addressing climate-related human rights concerns.

Technical Session III: Measures for Climate Resilient Economy

10. Shri R R Rashmi, IAS (Retd.),Distinguished Fellow and Programme Director, Earth Science and Climate Change, TERI, emphasized a dual-dimensional approach to address climate change. The first dimension involves addressing vulnerabilities through social and ecological responses, aiming to prevent the loss of productivity and contain economic losses from climate-induced disasters while protecting crucial ecological systems such as land, water, soil, forests, and biodiversity. The second dimension focuses on building a low-emission economic growth path, incorporating economic responses in production and consumption systems. This includes transitioning to non-fossil fuel-based economic activities across all sectors, ensuring social justice and a just transition in the energy system, diversifying economic opportunities, upgrading skills, and engaging states in the energy transition while providing effective compensation.

Highlighting India's progress towards climate goals, Shri Rashmi notes a 24% decline in emission intensity of GDP between 2005 and 2016, with renewable energy capacity reaching 41% of total electricity capacity in 2022. The forestry cover is growing at 0.6 million hectares annually, contributing to carbon stock additions.

He outlined three models for India's net-zero emission economy: the baseline scenario reflecting current and planned government policies, a net-zero by 2050 scenario assessing full decarbonization possibilities, and a "Towards Net Zero by 2050" ambitious scenario pushing all levers to the maximum. The government's long-term low-emission development strategy (LT-LEDS) spans critical areas, including low-carbon electricity systems, low-carbon transport, low-emission urbanization, low-carbon industrial systems, enhancing forest cover, and financial requirements for a low-carbon transition.

Shri Rashmi highlights challenges in the electricity sector, emphasizing the need for a balanced approach to all energy resources. He notes the continued reliance on oil and coal in heat-intensive industries unless alternatives like green hydrogen emerge. Challenges in agriculture, building greener habitats, and the necessity for finance and resources in each energy sector for cleaner energy are also discussed. Globally, Shri Rashmi emphasizes the need for substantial investments, highlighting the requirement of 4 trillion USD annually by 2030 for energy transition and 5.6 trillion USD annually for reaching Net Zero by 2050. India's additional investment needs include 380 billion USD by 2030 for energy transition alone and 10 trillion USD for reaching net zero. He suggests the use of blended finance, green bonds, and carbon markets as new financial instruments.

Addressing the challenges, Shri Rashmi underscores the importance of assessing social costs for a smooth transition to a low-carbon economy, requiring government intervention. States should be prepared for the transition, necessitating funds provision, policy formulation on resource efficiency, especially Extended Producer Responsibility (EPR), and preservation of informal sectors. Additionally, he advocates for the definition and rating of Environmental, Social, and Governance (ESG) investments as crucial criteria for corporate transparency and a smooth transition.

11. **Shri Varun Agarwal, Manager, World Resources Institute (WRI),** emphasizes the potential for job creation in various sectors such as electricity, construction, services, manufacturing, and mining, he underscores the importance of identifying areas where the workforce is most needed. However, Mr. Agarwal noted that certain industrial sub-sectors, including fabricated metal products, machinery, electrical and electronic equipment, oil and gas extraction, petroleum refining, coke production, cement and glass production, basic metals production, and coal mining, will experience significant job changes in the net-zero scenario. This highlights the necessity for developing new skills in specialized manufacturing to ensure workers are prepared for the transition.

Mr. Agarwal highlighted that India's low-carbon transition could disproportionately impact vulnerable workers and small businesses, with 108 million Indians employed in micro, small and medium enterprises (MSMEs), of which women own 20% and constitute 24% of the workforce. Additionally, 27-29 million MSMEs (44%) lack access to formal credit. Considering the transition impacts, he underscores the importance of preparing for the impacts of climate change, citing the example of the 2015 Chennai floods, which caused significant losses to MSMEs and jobs. Using the automotive sector as an example, Mr. Agarwal points out that the transition to electric vehicle (EV) manufacturing is crucial for India's climate goals and export markets. However, this shift may impact small businesses and workers in component manufacturing due to the reduction in the number of drivetrain components. He emphasizes the need for building resilience through transition risk mapping by sector, skilling programs, awareness building, and gap identification, including participatory approaches and knowledge exchange.

To illustrate, he suggests conducting workshops on climate action, resource efficiency, and the EV transition for MSMEs in the automotive sector. Additionally, upskilling programs for workers, particularly in collaboration with state governments, are proposed as a targeted sector management approach to building resilience. This reflects a comprehensive strategy to address the challenges and opportunities presented by the transition towards a low-carbon economy.

12. **Mr. Nilesh Kumar Saha, Joint Secretary, Ministry of Environment Forest and Climate Change (MoEFCC),** stated that in the context of international efforts, the Paris Agreement emphasizes the concept of a just transition, ensuring workforce considerations and the creation of quality jobs align with national development priorities. India significantly contributes to these discussions. The response measures' impact on the workforce and the economy is a crucial aspect referenced in the Paris Agreement. The Indian government outlines climate actions through three main elements in its Nationally Determined Contributions (NDC): a 45% reduction in emissions intensity below 2005

levels by 2030, a goal of 50% cumulative electric power capacity from non-fossil fuel sources by 2030, and the establishment of a carbon sink through increased forest and tree cover. India's low-carbon development strategy, aimed at achieving net-zero emissions by 2070, identifies specific vulnerable sectors such as water, glaciers, forests, biodiversity, agriculture, energy, health, and human settlements. This strategy is communicated to the UNCCC. On the domestic front, the National Action Plan on Climate Change outlines actions across various sectors, encompassing eight missions, including those focused on solar energy, energy efficiency, sustainable habitat, water, the Himalayan ecosystem, green initiatives, sustainable agriculture, and knowledge for climate change.

The agricultural mission includes initiatives such as the bamboo mission, soil rejuvenation, and the promotion of resilient seed varieties. The sustainable habitat mission addresses waste management and infrastructure. These sectors not only guide climate action but also offer employment opportunities, signaling a shift in the employment landscape. In response to concerns about potential job losses in the fossil fuel sector, India asserts on international forums, and the Paris Agreement acknowledges, that climate action plans aim to contribute to poverty eradication and sustainable development.

The Ministry of Coal projects a significant increase in coal production, emphasizing a billion-ton target, suggesting no imminent job losses in the sector for the next 15 to 20 years. Concurrently, efforts to enhance renewable energy capacity offer potential job creation. The transportation sector is transitioning towards electric vehicles, indicating opportunities for job growth. India is decentralizing its approach by encouraging State Governments to formulate state climate action plans, focusing on eight key sectors. Additionally, the Union Government is actively undertaking adaptation-related activities, emphasizing livelihood assurance.

Technical Session IV: International Established Practices

13. Dr. Padma S. Rao, Chief Scientist & Head Environmental Audit and Policy Implementation Division, Council of Scientific Industrial Research - National

Environmental Engineering Research Institute (CSIR-NEERI), emphasized the profound impact of climate change on rural productivity and livelihoods in India. Given that agriculture significantly contributes to the GDP and employs over half of the workforce, adverse ecological conditions have resulted in reduced rural demand, causing economic slowdowns and job cuts across various sectors. Dr. Rao highlighted the opportunity to address rural unemployment by improving agricultural productivity through climate-focused initiatives.

Challenges related to climate change and adaptation in employment are prevalent in sectors like transport, energy, telecom, urban development, and water. Globally, best practices include innovative projects such as Bangkok's conversion of an abandoned train track into a sky garden, Mexico City's revival of Aztec floating farms, and Victoria's large solar panel system. Dr. Rao emphasizes the need for adaptation measures in energy infrastructure, tailored to each ecosystem, and suggests involving NGOs to promote environmentally sound approaches through collaboration between local authorities and communities.

In India, the renewable energy sector has been a major job creator, with millions of jobs expected as the country aims for 175 GW of installed clean energy capacity by 2022. Environment conservation programs, integrated into schemes like the Mahatma Gandhi National Rural Employment Guarantee Act, have the potential to generate additional employment by focusing on soil and water conservation.

Key best practices in India include innovative waste management initiatives like bio-mining in Bhopal, the utilization of PM Kusum Yojana for solar energy generation in Rajasthan, and various waste recycling projects. Other notable practices involve desilting lakes in Salem, groundwater conservation efforts, afforestation, the LPG Ujwala Yojana for reducing biomass-based air pollution, and successful municipal solid waste management projects in Ambikapur, Chhattisgarh.

CSIR NEERI's environmental practices, such as bamboo diversity on Fly Ash Dump/Mine Spoil Dumps and air pollution mitigation for green crematoria amongst

others, are some sustainable solutions. Dr. Rao suggests involving IITs and focusing on individual sectors for livelihood generation as part of comprehensive efforts to address climate change challenges and promote sustainable employment opportunities.

Dr. Singh introduced the Restoration Opportunities Assessment Methodology (ROAM), a global tool adopted by 40 countries, facilitating participatory and inclusive planning. Using examples from Madhya Pradesh, she illustrated diverse restoration interventions and their potential socio-economic impacts. The research indicated that every $1 invested in restoration could yield $7-30 in benefits. Dr. Singh underscored the focus on agroforestry due to its myriad benefits, including improved water quality, sustainable timber, enhanced soil health, and job creation in rural areas.

Addressing the global funding gap for restoration, Dr. Singh highlighted the challenges faced by the "missing middle," requiring $25k to $1.5m USD to scale up, a range not adequately served by microfinance or commercial banking. To bridge this gap, she presented the Land Accelerator South Asia initiative in collaboration with Start-up India, focusing on sustainable agriculture, agri-tech systems, organic land amendment, and circular economy solutions. However, challenges such as industry fragmentation and risk aversion were acknowledged.

Dr. Singh concluded by showcasing tech interventions and novel business models, each with a notable socio-economic impact, even in the absence of substantial funds. The Land Accelerator model revealed abundant employment opportunities, highlighting the importance of a ready investable pipeline of restoration businesses. In response to the finance gap, she introduced the Harit Bharat Fund, developed in collaboration with the Office of the Principal Scientific Advisor to the Government of India, aiming to deploy capital through loans to startups, NGOs, and potential MGNREGA projects. Stressing the importance of blending finances, capacity building, and meticulous planning, Dr. Singh emphasized these as key components in achieving a just transition.

14. **Dr. Ruchika Singh, Executive Director, World Resources Institute (WRI), India,** emphasized the crucial role of landscape restoration in catalyzing a restoration

economy, emphasizing the need for meticulous planning informed by the best available science, social inclusivity, capacity building, and financial considerations. Highlighting the criticality of restoring India's landscapes, she outlined potential benefits such as improved affordability and accessibility to food, increased farmer incomes, healthier soils, and more productive farms, leading to reduced emissions. Agroforestry, identified as a prime opportunity, could sequester 3-4.3 gigatons of additional above-ground carbon in India by 2040, contributing significantly to global and national commitments.

15. Dr. Rajesh Sharma, Assistant Director General, Indian Council of Forestry Research and Education (ICFRE), Dehradun, highlighted ICFRE's efforts in providing valuable opportunities to communities, particularly farmers. Dr. Sharma acknowledged challenges faced by the forest department, citing an example of the adaptability issues encountered by the deodar tree species in its initial growth stage. With nine institutes across the country, ICFRE focuses on addressing the needs of farming communities, promoting bamboo cultivation, conserving biodiversity, and encouraging the use of indigenous species. Community involvement is central to their programs, including capacity-building initiatives such as Kisan Mela programs. Dr. Sharma noted challenges related to insects affecting seed setting and emphasized the comprehensive consideration of various factors.

16. Mr. Justice Arun Mishra, Chairperson of the National Human Rights Commission (NHRC), concluded the impactful discussion on the climate action's influence on employment. He underscored the need for a comprehensive roadmap, emphasizing collaboration among all stakeholders to achieve common goals. The significant concern of underutilized funds, particularly the Campa Fund, allocated for afforestation by states, was highlighted. Mr. Mishra stressed the equal importance of land restoration for job creation, urging states to collaborate and plan with stakeholders for the next level of progress.

Addressing challenges such as the circular economy of batteries, manufacturing consensus, pesticide use, land fertility, and policy issues, he called for increased

investment and attention to energy costs and cost-effective practices, ensuring accessibility for the economically disadvantaged. The plight of small-scale industries, particularly MSMEs, facing challenges and suffering due to the transition in fuel, was acknowledged.

Justice Mishra emphasized the interconnectedness of sectors, noting that changes in one sector could impact many others and the broader market. He expressed gratitude for the enlightening discussion and presented it as a guiding path forward. Recognizing the imperative duty to keep the torch of climate action illuminated, he commended India's leadership in global summits, including the G20, and called for collaborative efforts to achieve Sustainable Development Goals (SDGs). The imperative to work together for the shared goal was highlighted as the meeting concluded.

The meeting ended with a vote of thanks by **Mr. Sudesh Kumar, Senior Research Officer, NHRC**.

17. Based on the deliberations and discussions, the following key recommendations have emanated from the meeting:

1. Prioritize water-efficient afforestation methods for sustainable employment in barren landscapes.
2. Promote agroforestry to sequester carbon, improve soil health, and create jobs in rural areas.
3. Integrate climate-focused initiatives into schemes like Mahatma Gandhi National Rural Employment Guarantee Act for rural job creation.
4. Strengthen existing schemes like MGNREGA for flexible work opportunities and upskilling of workers.
5. Define and prioritize green jobs, particularly in urban centers, with targeted skilling programs for a just transition to a low-carbon economy.
6. Adopt the Restoration Opportunities Assessment Methodology (ROAM) for inclusive planning, involving local authorities, communities, and NGOs.

7. Address the funding gap for landscape restoration, particularly for the "missing middle" range of $25k to $1.5m USD, through initiatives like the Land Accelerator and Harit Bharat Fund.
8. Assess social costs for a smooth transition to a low-carbon economy, emphasizing corporate transparency, governance improvements, and a human-centered approach.
9. Advocate for a comprehensive strategy addressing challenges and opportunities presented by the transition towards a low-carbon economy.
10. Develop comprehensive skill development frameworks for transitioning workers in the low-carbon sector.
11. Leverage India's renewable energy sector for job creation, emphasizing skill development and awareness-building for a smooth transition.
12. Encourage private sector involvement through incentives for green job creation, particularly in underprivileged neighborhoods.
13. Facilitate blending finances, capacity building, and meticulous planning for a just transition toward a low-carbon economy.
14. Conduct workshops on climate action, resource efficiency, and electric vehicle (EV) transition for MSMEs in the automotive sector.
15. Formulate upskilling programs for workers, particularly in collaboration with state governments, to prepare for the impacts of EV transition.
16. Map transition risks by sector, promote awareness-building, and identify gaps in the context of climate change and EV transition.
17. Initiate participatory approaches and knowledge exchange to build resilience through targeted sector management.

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Annex - I

List of Participants

NHRC Officials/ Staff

1. Mr. Justice Arun Mishra, Hon'ble Chairperson, NHRC (Chair)
2. Mr. Rajiv Jain, Hon'ble Member, NHRC
3. Mr. Bharat Lal, Secretary General, NHRC
4. Mr. Surajit Dey, Registrar (Law), NHRC
5. Shri Devendra Kumar Nim, Joint Secretary, NHRC
6. Smt. Anita Sinha, Joint Secretary, NHRC
7. Mr. Sudesh Kumar, Senior Research Officer, NHRC
8. Mr. Deepak Kumar, Section Officer, NHRC
9. Ms. Shrija Singh, Junior Research Consultant, NHRC

Members of Core Group

1. Shri Sundaram Verma, Padma Shri, Environmentalist
2. Shri Niranjan Dev Bharadwaj, Distinguished Advisor, Global Foundation for Environmental Advancement and Human Wellness
3. Dr. Promode Kant IFS (Retd), Adjunct Professor, Advanced Institute of Wildlife Conservation, Chennai
4. Shri R R Rashmi, IAS (Retd.),Distinguished Fellow and Programme Director, Earth Science and Climate Change, TERI
5. Mr. Nileesh Kumar Saha, Joint Secretary, Ministry of Environment Forest and Climate Change (MoEFCC)
6. Dr. Padma S. Rao, Chief Scientist & Head Environmental Audit and Policy Implementation Division, Council of Scientific Industrial Research - National Environmental Engineering Research Institute (CSIR-NEERI)
7. Dr. Rajesh Sharma, Assistant Director General Indian Council of Forestry Research and Education (ICFRE), Dehradun
8. Mr. Nazimuddin, Scientist 'F', Central Pollution Control Board
9. Mr. Sharath Pallerla, Scientist 'G', Ministry of Environment Forest and Climate Change (MoEFCC)

Special Invitees

1. Dr. Ruchika Singh, Executive Director, World Resources Institute (WRI)
2. Ms. Leena Srivastava, Director & Head, Ashoka Centre for a People Centric Energy Transition (ACPET)
3. Ms. Gunjan Jhunjhunwala, Programme Lead, Council on Energy, Environment and Water (CEEW)
4. Shri Varun Agarwal, Manager, World Resources Institute (WRI)