Assignment 4

Nature-based solutions case study

Hailey Nguyen

301384946

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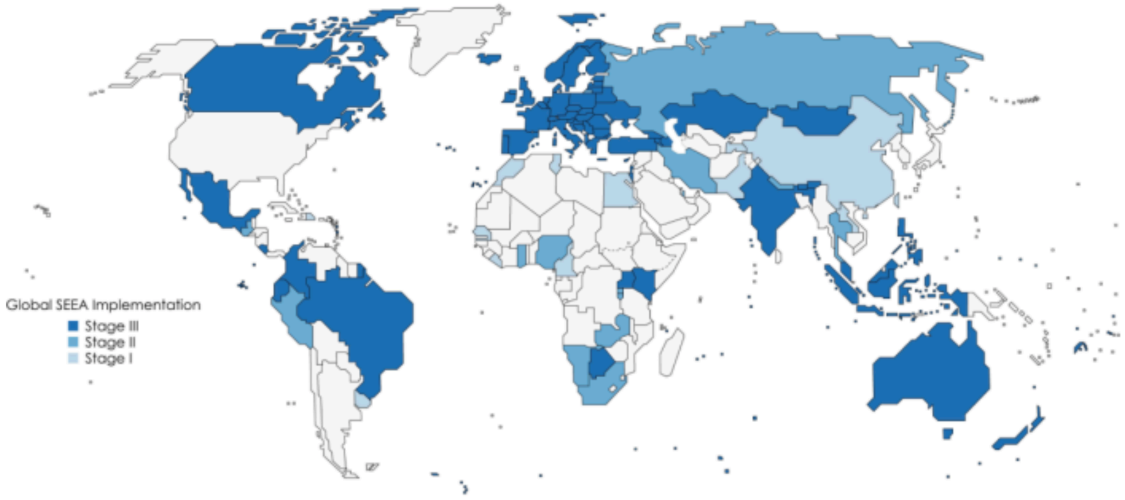
INTRODUCTION

In the race to minimize the impacts of climate change, sometimes the need to work against the damages caused by nature's worst outcomes is emphasized, such as how climate-induced damages slow Canada's projected GDP growth by 50% in 2025 (Canadian Climate Institute, 2022). However, working with nature is also an option, and nature-based solutions are rising as a key solution to tackle climate change. In order to internalize the value of ecosystems and measure national wealth beyond GDP, countries need credible and dependable data on the environment and economy in order to create effective, sustainable nature-based solutions for climate change. As a result, the System of Environmental-Economic Accounting (SEEA) was developed as a framework to create an information base that measure the links between the environment and the economy, mainstreaming natural capital accounting and valuation of ecosystem services in transition programs, infrastructure investment and climate policy (UNCEEA, n.d.).

So far, 90 countries has implemented SEEA as of 2021 (SEEA, 2021). The main developer of SEEA is the UN Committee of Experts on Environmental-Economic Accounting (UNCEEA, n.d.), and there have been collaborative processes between national statistical offices of UN member states and scientific, conservation, academic, geospatial and policy communities. In March 2021, the adoption of SEEA Ecosystem Accounting as an international statistical standard by the United Nations Statistical Commission (Obst & Alfieri, 2021).



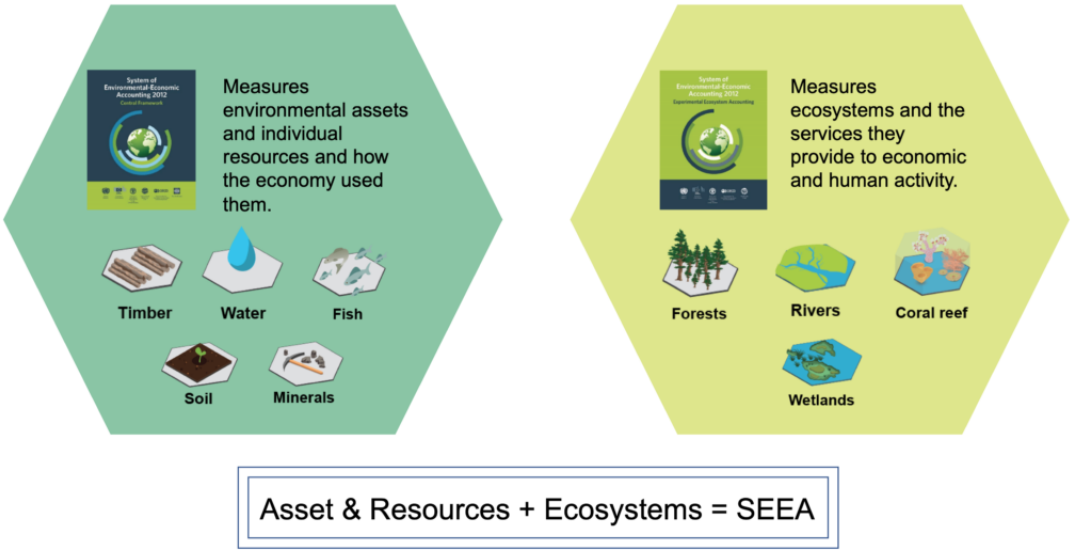
SEEA implementation, 2021 (SEEA, 2021).

CASE STUDY ANALYSIS

This analysis will be divided into three parts, guided by the definition of nature-based solutions by the International Union for Conservation of Nature as “actions to protect, sustainably manage and restore natural or modified ecosystems”, which then “address societal challenges effectively and adaptively”, while “simultaneously providing human well-being and biodiversity benefits” (Doyon, 2022). To shape the context, relevant ecological problems includes demand for a more accurate measurement for the wealth of nations beyond GDP (Obst & Afieri, 2021), the lack of natural capital accounting system while suggesting government to build climate impacts and adaptation policies into their own economic decision making (Canadian Climate Institute, 2022). As the nature-based solution of interest, SEEA - a statistical system - brings together economic and environmental information into a common framework to measure the condition of the environment, the contribution of the environment to the economy and the impact of the economy on the environment. Following a similar accounting structure to the System of National Accounts, SEEA contains an internationally agreed set of standard concepts, definitions, classifications, accounting rules and tables to produce internationally comparable statistics. (UNCEEA, n.d.). Based on the information by Doyon (2022), this nature-based solution falls under the ‘Use of natural ecosystem’ category, as the framework relies on measurement of ecosystems, ecosystem services and other environmental stocks and flows for official statistics.

First is to assess SEEA’s ability to protect, manage, or restore an ecosystem as nature-based solution. The SEEA is a flexible and modular framework which allows countries to compile accounts that address their policy priorities and needs, and is designed to be applicable across all countries on a landscape scale. According to SEEA (n.d.), the system consists of three parts: SEEA Central Framework, looks at individual environmental assets to see how those assets are extracted from the environment, used within the economy and returned back to the environment; SEEA Experimental Ecosystem Accounting, represents coherent accounting approach with ecosystem accounts enable the presentation of data and indicators of the level and value of

ecosystem extent, ecosystem condition and ecosystem services (such as soil retention) in both physical and monetary terms in a spatially explicit way; and SEEA Applications and Extensions, illustrates how the information can be used in decision making, policy review and formulation, analysis and research. The SEES framework does not directly protect, manage, or restore an ecosystem, it offers data on the relationships, value of the ecosystem services and a mean of monitoring. Therefore, SEEA can be used to inform, monitor or complement with numerous themes of nature-based solutions such as Scaling up preservation and restoration of forests, land and marine ecosystems; Conservation and restoration of wetlands; Prevention of desertification; Eco-corridors and protection of biodiversity; Climate compatible agriculture and food systems; (UNCEEA, n.d.).



SEEA Central Framework (on the left) and SEEA Experimental Ecosystem Accounting (Obst & Alfieri, 2021).

Next is to analyze SEEA's ability to address one or more societal challenges effectively and adaptively, as in where the framework can be seen in the bigger picture. Firstly, the SEEA is directly relevant to several key international initiatives including Agenda 2030 and the Sustainable Development Goals (SDGs), and can help inform forty indicators for nine SDGs, including SDG 2, 6, 7, 8, 9, 11, 12 14 and 15 (SEEA, n.d.). Secondly, towards biodiversity: SEEA's species accounts, condition and services accounts

can provide statistics for an informed understanding of biodiversity, including the drivers of biodiversity loss. Seventy-one of the current Aichi Biodiversity Target indicators are fully or partially aligned with the SEEA. Thirdly, by providing accounts for both individual environmental assets and ecosystems, the SEEA provides a wholistic picture of drivers and impacts climate change, and its connections to biodiversity, ecosystems and the economy. Finally, since SEEA is closely aligned with the System of National Accounts from which GDP is derived, it allows for indicators such environmentally adjusted GDP, which accounts for the depletion and degradation of the environment (UNCEEA, n.d.). In a word, the SEEA can be implemented alone or in an integrated and multidisciplinary manner with other solutions to societal challenges as it does not propose any single indicator or basket of indicators.

Finally, after addressing various societal challenges, as the most comprehensive statistical system that brings together economic and environmental information, recently acknowledged as an international statistical standard by the UN (UNCEEA, n.d.), the SEEA certainly can simultaneously provide human well-being and biodiversity benefits. On one hand, SEEA ensures human well-being by the identifying contribution of the environment to the economy to inform decision making, eliminating barriers of participation for countries, and offering a flexible accounting framework for regional differences. On the other hand, SEEA measures the state of the environment and the impact of the economy on the environment, captures the economic value of natural capital, and provide flexibility for ecosystem to evolve over time. By making an environmental-adjusted GDP possible, this nature-based solution is a great representative for one of the principles of nature-based solutions - “recognize and address the trade-offs between the production of a few immediate economic benefits for development, and future options for the production of the full range of ecosystem services” (Doyon, 2022). For example, World Bank’s WAVES initiative uses the SEEA Central Framework to implement Natural Capital Accounting (NCA) in countries as an important tool to inform economic decision making on natural resources like minerals, timber, and fisheries in numerous developing countries (WAVES, n.d.).

CONCLUSION

The case study analysis featuring the System of Environmental-Economic Accounting framework provides insights into each aspect of nature-based solutions, including “ability to protect, manage, or restore an ecosystem”, then “ability to address one or more societal challenges effectively and adaptively” while “simultaneously provide human well-being and biodiversity benefits”. The SEEA strategically tackles the lack of economic valuation for natural capital by organizing and presenting statistics on the environment and its relationship with the economy. Realizing the credibility, flexibility and versatile applications of the SEEA to other societal challenges such as climate change, sustainable development and biodiversity loss, more and more country are incorporating the SEEA framework for better informed decision-making.
(1,239 words)

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