



P O L I C Y B R I E F

Nature-Based Solutions: A Synopsis of Indigenous Peoples' Experiences, Gaps in Practice and Potential Actions

*Lessons from Regional Case Studies:
Africa, Latin America and Asia*



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I. Executive Summary

Nature Based Solutions (NBS) is increasingly becoming a common feature in reference to a bundle of possible responses to the need for mitigation of and adaptation to climate change and enhancement of biodiversity conservation. NBS is broadly associated with “actions to protect, sustainably manage and restore natural or modified ecosystems that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits”.

The growing interest on NBS arises out of an apparent ‘Climate Crisis’ in which around one million species already face extinction, many within decades, and the realization that only radical changes in the immediate future could help mitigate the crisis.¹ In addition, by 2030, the world is projected to face a 40% global water deficit under the business-as-usual (BAU) scenario and it is expected that climate change will exacerbate these conditions.²

The discourse on NBS raises broader fundamental questions around how humanity perceives nature and how it chooses to relate to it. Nature is generally accepted to be the cradle of life and that all life forms exhibit interdependence in complex ways. Beyond this utilitarian view of nature, nature is also associated with identity, spirituality, and sacredness particularly among indigenous peoples.

Indigenous peoples’ knowledge and community-based monitoring systems, traditional occupations, indigenous food systems, and basic survival are all grounded in nature-based solutions, regulated through customary systems of governance. Indigenous peoples’ NBS strategies are founded on key principles such as reciprocity (“returning the gift”) and mutuality; cultural identity and customary law; context-based relationality and local economies; community-based governance; and social justice inclusivity.

These sustainable uses and responses to climate change strategies by indigenous peoples constitute a missed opportunity in efforts to sustainable utilization and nature-based solutions to climate change. The recognition of indigenous peoples’ rights, the security of their lands and territories, the promotion of indigenous knowledge including CBMIS and Customary governance, their full and effective participation, their direct access to resources and capacity building are all critical in ensuring indigenous peoples’ contribution to NBS initiatives.

II. THE CONTEXT

The study explored the question, Is the approach of nature-based solutions to address climate change and environmental related challenges a new invention by a section of environmental non-government organizations (NGOs) and their collaborators or is it actually a vibrant intergenerational undertaking practiced and refined by indigenous societies of the world? It also amplifies reflections on dynamics around people-nature relations such as the interdependence of cultural and biological diversity—Is human existence separable from nature or is coexistence, harmony, unity, sustainable resource use, and good living the desired goals and how would this, then, be achieved?

¹ Indigenous environmental justice and sustainability, Deborah McGregor¹, Steven Whitaker² and Mahisha Sritharan² March 2020

² The United Nations World Water Development Reports (2014–2019)

The briefing paper draws from regional studies on Natures Based Solutions (NBS) conducted among Indigenous peoples' groups in six countries in Asia, Latin America and the Pacific, and Africa, specifically Nepal, Indonesia, Bolivia, Nicaragua, Kenya and Cameroon.

NBS discussions are gaining traction as the nexus for climate change resilience under the United Nations Framework on Climate Change (UNFCCC), biodiversity conservation under the Convention on Biological Diversity (CBD) and Sustainable Development Goals (SDGs) under the 2030 Agenda for Sustainable Development. The increasingly common discourses on NBS discussions are informed by several emerging trends on evidence and acknowledgement of the role of nature in sustainable development.

First, there is a growing recognition that climate is changing rapidly and biodiversity loss is accelerating towards imminent collapse, ultimately undermining the security of current and future generations. This recognition is grounded on the reality that healthy ecosystems are better able to cope with and adapt to shocks, have higher potential to absorb and store carbon, and enjoy higher and more sustainable yields.

Nature is a significant source of greenhouse gases yet also has the most feasible potential for mitigating further emissions and enhancing carbon sequestration. The land (forest and land use change) sector, for example, emits a quarter of greenhouse gas emissions globally; yet the same sector can deliver one-third of the mitigation required by 2030 to remain below a 2°C increase in average global temperatures in addition to conserving biodiversity, increasing food and water security, augmenting overall well-being of human societies, and help achieve sustainable development goals.³ NBS are therefore critical in supporting vital ecosystem services, biodiversity, access to fresh water, improved livelihoods, healthy diets, and food security from sustainable food systems.

Second, the alarming decline of the natural habitats, plants and animals, and the benefits that people derive from nature, is by a large part a direct result of the expansion of agribusiness and extractive industries fueled by prevailing flawed economic growth paradigms with relative slower decline in the lands, waters, and territories of Indigenous peoples.⁴

Despite evidence of sustainable conservation outcomes within indigenous peoples' ecosystems founded on nature-based solutions, the highly inequitable and unsustainable global systems of values, knowledge, governance, production, consumption, technology, economics, incentives, and trade continue to exert enormous pressure on Indigenous peoples' biological and cultural diversity.

The foundational cause of biodiversity loss is worldviews that separate nature and culture. Bringing Indigenous peoples to the NBS discussions and ultimate actions delivers a triple win, bringing together the fulfilment of human rights and wellbeing, the conservation and sustainable use of biodiversity, and the maintenance of natural ecosystems to manage climate change.

Third, Nature Based Solutions is framed as a "New Invention", often by the very same actors who have perpetuated unsustainable extractive industries' approaches that are hinged on maximization of profits. Prevailing notions on NBS as "new" climate solutions tend to place primacy on carbon as a commodity with diminished appreciation of the holistic view of nature and its provisioning services.

³ A submission by Natural Climate Solutions Alliance of Government to the UNSG Summit NBS Coalition, May 2019

⁴ Forest Peoples Programme (2020). Local Biodiversity Outlooks 2: The contributions of indigenous peoples and local communities to the implementation of the Strategic Plan for Biodiversity 2011–2020 and to renewing nature and cultures. A complement to the fifth edition of the Global Biodiversity Outlook (ISBN 978-0- 9955991-9-2)

These narratives ignore the fact that nature-based solutions are the daily rhythm and practices of Indigenous peoples livelihood and production systems.

Fourth, while the Covid-19 pandemic has complicated the pre-existing layered vulnerabilities for Indigenous peoples including climate change, historical marginalization, and violation of their rights, NBS emerged as a potential contributor to building back better in the context of Covid-19, especially among Indigenous peoples.

III. INDIGENOUS PEOPLES: THE DISREGARDED AND UNRECOGNIZED CHAMPIONS OF NATURE BASED SOLUTIONS

Globally, groups that self-identify as Indigenous Peoples⁵ number about 370 million individuals and they represent a significant portion of the world's cultural diversity, including about 7,000 languages. Indigenous peoples occupy and use 22% of the world's land, harbouring 80% of the world's biological diversity (UNDP 2011: 54).⁶ Indigenous peoples' ecosystems are estimated to store forest carbon stocks in tropical forested countries equivalent to a quarter of global 2020 emissions.⁷ Despite their enormous contribution to nature conservation, including that of low carbon footprints, Indigenous peoples suffer systemic repression and deprivation to the extent that their demographic survival is threatened. They are most likely to be excluded from schools and girls from rural areas are doubly disadvantaged in terms of education access.

Indigenous peoples' knowledge and community-based monitoring systems, traditional occupations, indigenous food systems, and basic survival are grounded in nature based solutions, regulated through customary systems of governance.

Indigenous, traditional, and local knowledge systems, institutions and practices are dynamic, intergenerational, collective, and founded on reciprocity, sustainable growth and development—principles which are ultimately reflected in the local wisdom on forest and biodiversity conservation in Asia, Africa, Latin America, and the Caribbean, and, in mobile pastoralism and seasonal calendars in Africa.

a) Indigenous peoples' knowledge systems and practices is the heartbeat of nature-based solutions: Indigenous communities have accumulated indigenous knowledge about their natural resource base, which has enabled them to survive the often-harsh environmental conditions (Barrow, 1990). Knowledge is connected to the well-being of the people such as food from hunting, gathering, pastoralism or subsistence agriculture, as well as healthcare, clothing, shelter and strategies for coping with environmental fluctuations and external forces of exchange (Warren et al., 1995; Nakashima and Roue, 2002; Siltoe et al., 2002).

Indigenous knowledge embodies a wealth of wisdom and information gained over centuries from empirical observations and transmitted over generations. It includes multiple environmental practices, which are linked to cultural norms and social protocols, and contributes to shaping Indigenous identity.

⁵ Native, aboriginal or tribal peoples, ethnic minorities, hill tribes, scheduled tribes, sea gypsies, bushmen, Indians/First Nations, Vulnerable and Marginalized Groups (VMGs)

⁶ Indigenous knowledge for Climate Change Assessment and Adaptation: Introduction, Edited by Douglas Nakashima, Jennifer T. Rubis and Igor Krupnik. Cambridge, United Kingdom; New York: NY: Cambridge University Press, 2018

⁷ Rights and Resources Initiative (RRI) report

Indigenous, local, and traditional knowledge systems and practices, including indigenous peoples' holistic view of the community and the environment, are major sources of adaptation to climate change. However, these have not been acknowledged and accounted for in the context of NBS. Customary natural resource management systems based on indigenous or traditional knowledge have sustainably contributed to lower rates of deforestation and forest carbon emissions and allowed them to maintain higher levels of biodiversity, resulting in more resilient landscapes within Indigenous peoples' territories.⁸

In terms of application, the knowledge integrates a landscape-based approach geared towards achieving an ecological equilibrium responsive to people, livelihoods, and climate concerns through highly adaptive and resilient practices.

Indigenous knowledge systems and practices honor the complex interdependence of all life forms, are practical and highly adaptive, and remains the foundation upon which nature-based solutions for indigenous peoples are grounded.

b) Security of collective/communal land tenure is the foundation for nature-based solutions: Evidence abounds to the effect that communal land tenure is the most viable tenure system that is well suited for areas of climatic variability. There is also empirical evidence suggesting an inextricable link between securing the rights of Indigenous peoples to their lands, territories and resources with ecosystems integrity, enhanced carbon stocks, sustainable food production, and harmonious living with nature. Despite Indigenous peoples and local communities (IPLCs) stewarding at least 22% of the forest carbon found in tropical and subtropical countries, a third of this carbon lies in forestlands where IPLCs lack legal recognition of their tenure rights.

Land tenure insecurity negatively impacts efforts towards sustainable management and restoration of ecosystems essential to the realization of climate and sustainable development goals. Security of land tenure underpins the ability of Indigenous peoples to exercise self-governance, adapt to their changing environment, and steward the ecosystems they depend on by incentivizing maintenance and restoration, and by mediating the risk of conflict and illegal appropriation by others. Securing community land rights is therefore vital to meeting the goals of the Paris Agreement, the 2030 Sustainable Development Agenda, global biodiversity, and conservation targets especially through nature-based solutions.

Trends in land ownership, control and access among Indigenous Peoples tend to lean towards landlessness. First, land ownership is shifting from communal or collective to private ownership. Second, once privatized pressure is exerted on governance and use arrangements triggering land use change(s) through conversion, fragmentation, sale, fencing, market or profit oriented extractive resource use, it ultimately leads to shrinking Indigenous peoples' resource base, degradation, overuse, deforestation, and other negative outcomes.

Recognizing Indigenous peoples' rights to their traditional lands, territories and resources is therefore crucial in the sustenance of their cultural identities and their long-term environmental stewardship founded on NBS.

⁸ Forest Peoples Programme (2020). Local Biodiversity Outlooks 2: The contributions of indigenous peoples and local communities to the implementation of the Strategic Plan for Biodiversity 2011–2020 and to renewing nature and cultures. A complement to the fifth edition of the Global Biodiversity Outlook (ISBN 978-0- 9955991-9-2)

c) **Proactive Community Based Monitoring Information Systems (CBMIS) enlivens NBS strategies:** Indigenous peoples observe and monitor climate variability, ecosystems integrity and develop knowledge and requisite strategies for responding to climate change (adaptation and mitigation). Monitoring, observation and reporting of weather forecasting indicators among Indigenous peoples, is a collective affairs embedded in the individual's and community's traditional livelihoods and occupations enforced through social norms and sanctions.

Broadly, among Maasai pastoralists of East Africa, climate- and weather-related data generation and monitoring encompass i) astronomical observations including the appearance and relative position of the sun, moon and stars, ii) biophysical observations such as 'reading' of goats intestines; iii) observation of plant attributes such as morphological and physiological responses to events in which leaf color, flowering/bloom/blossoms, fruiting, specific plant/tree species; iv) animal behavior— both domestic and wildlife including birds and insects; and v) observation, monitoring and interpretation of cloud formation, patterns, relative location and intensity to inform subsequent actions.

CBMIS is the fulcrum of nature-based solutions among pastoralist Indigenous communities in East Africa. The ecological approach to disease control, the practice of ethno-veterinary medicine in the treatment of livestock diseases; mobility; *Enaidurra* (people and livestock) and rotational grazing, including grazing reserves *olokeri/olopololi* strategies to manage climate variability and drought (*olameyu*); herd accumulation; keeping of multispecies herds; and livestock distribution through intra-community mechanisms have all been recognized as some of the most effective means for restoring ecosystem health and reversing degradation in drylands.

In a nutshell, monitoring of the ecosystem is a lifestyle for Indigenous peoples and is not merely an activity or event. CBMIS is deeply embedded in Indigenous peoples' cultural, spiritual, and economic value systems and practices, and remains vibrant, elaborate, and robust despite the numerous external pressures exerted on it.

d) **NBS strategies: The lifeline of traditional occupations and basic survival for Indigenous peoples of the world:** Under this section we highlight some stories of Indigenous peoples' experiences on NBS from across the globe. Indigenous peoples (as hunters, food gatherers, farmers, fishers, pastoralists) directly derive their sustenance from the lands, waters, and other natural resources. Their wellbeing is inextricably linked to biodiversity and the diverse ecosystems within their territories.

The story of pastoralism and pastoralists eking a living within harsh climatic conditions and rangelands in disequilibrium clearly demonstrates the dynamics of NBS practices. Pastoralism is the main livelihood production system in arid and semi-arid lands (ASALs) of the world. Pastoralism relies on the availability of water, pastures, and labor to thrive, with water as the determining factor.⁹ Arising from historical, environmental, ecological, and political negative pressures, ASALs exhibit the lowest development indicators and the highest incidence of poverty in the world.¹⁰

⁹ National Climate Change Action Plan (NCCAP) 2013 – 2017

¹⁰ GoK, National Climate Change Action Plan (NCCAP) 2013 – 2017

The defining feature of the ASALs is their aridity with annual rainfall ranging between 150mm and 850mm per year, high temperatures and rates of evapotranspiration throughout the year, ultimately making drought and famine some of the main environmental threats intermittently experienced by pastoralists.

Pastoralism is more than just a means of production; it is a way of life intrinsically linked to the identity of the individuals and communities that practice it. Nature and all its provisioning services are at the centre of the Maasai social and cultural identity evidenced by the fact that all rites of passage from birth to death utilize some aspects of the forests or plants. Nature is therefore their main source of food, fodder, medicine, and construction materials while the Maasai way of life assists in the maintenance of catchments, soil fertility, and soil protection. Nature also plays a symbolic and ritual function for pastoralist Indigenous peoples.

In Kenya, for example, forests and areas of the highest biodiversity conservation coincide with areas occupied by Indigenous forest peoples and pastoralist communities. Over 75% of wildlife exists outside of national parks and protected area boundaries with 92% of the country's protected areas overlapping with Indigenous pastoral territories.¹¹ Forests on community land encompasses approximately 58 percent of the country's forest area, most of which are found in Indigenous peoples' territories.¹²

In addition, pastoralism provides most of the subsistence needs of dryland people—at least some 14m in the drylands of Kenya (GoK, 2007) alone and accounts for about 30% of total national agricultural production (GoK, 2005).¹³ The bulk of the meat, milk and other livestock products consumed in the Horn of Africa region comes from the drylands (Kirkbride and Grahn, 2008).

Dryland ecosystems are not only valuable in wildlife conservation, tourism and livestock keeping but equally in maintaining soil fertility, holding and maintaining water and air quality, and in carbon sequestration. Pastoralism is therefore key to the maintenance of these vital dryland ecosystem goods and services.¹⁴

It is the positive people-nature relation and grazing effects of pastoral livestock, that have contributed to the maintenance of significant levels of plant as well as animal biodiversity in these landscapes (Homewood, 2008). Pastoralism has contributed to the evolution of the many rangeland habitats that support wildlife-based tourism in the country through their indigenous knowledge systems and practices.

¹¹ Magda Nassef, Simon Anderson and Ced Hesse (2009). Pastoralism and climate change Enabling adaptive capacity.

¹² FAO Forest Resource Assessment 2010. Country Report for Kenya

¹³ Ibid

¹⁴ Magda Nassef, Simon Anderson and Ced Hesse (2009). Pastoralism and climate change Enabling adaptive capacity.

IV. KEY PRINCIPLES INFORMING INDIGENOUS PEOPLES' APPROACHES TO NBS

Indigenous peoples have survived as separate and distinct community groups within often-challenging natural, political, and economic environments precisely because they maintain cultural values that inform nature-based solutions that are consistent with sustainability aspirations. These include indigenous customary laws, knowledges, principles, belief systems and values, that are based on their long-standing and intergenerational presence within their territories. This “ethics of place” is deeply embedded within their cultures and social organization, ultimately reflected in generations of practices, governance structures and complex knowledge systems.¹⁵

Principles like interdependence, reciprocity, and caretaking are common among many indigenous cultures of the world. These principles are driven by a sense of intimacy and interconnectedness, and draw attention to the importance of giving back to nature as opposed to western cultures and market-oriented approaches which are infused with a sense of detachment from nature and are often focused on exploitation and extraction.

- **Interdependence and interconnectedness:** Most indigenous cosmologies perceive everything in the universe as interconnected and interdependent, and that no element has a real chance of existing by itself. Nature and the human realm do not constitute separate domains and, instead, they are experienced with a sense of unity and mutual belonging. Humans and non-humans are entangled in complex bundles of relations. Indigenous peoples' landscapes are envisioned as webs of domains of dependence, relationality, and reciprocal relations with other human communities, and also with animals, plants, and their spirits. This cosmovision underpins indigenous understandings of NBS, leading to the emergence of values for an indigenous conservation morality and ethics of responsibility in human-nature relations. *Njengi Sacred Forest*, one of the networks of sacred forests among Baka hunter-gatherers in Cameroon and *Naiminie Enkiyio forests* in Maasai land Kenya are cases in point. Maasai clans are reflected in nature through totems and nature is reflected in all rites of passage through the symbolic use of plants such as *emisigiyoioi*, *Ilatimi*, *Olartat*, among others.
- **Reciprocity (“returning the gift”) and mutuality:** This principle relates to the aspirations of ‘living well’ within a community that extends to the natural world. It conveys a deeper understanding of the relationships between human and non-human entities. This human-nature relationship is usually depicted as symbiotic and based on reciprocity—from the natural environment, indigenous peoples attain their subsistence and autonomy while, at the same time, contribute to its safeguarding. Hunting, for example, continues to be conceived as a process of reciprocal exchange between hunters and non-human beings. The principle of reciprocity entails, going beyond being focused on taking away from nature (even if in a regulated fashion) but also involved embracing an attitude of giving back to nature, thereby preserve the “gift”.
- **Culture, tradition, identity and customary law:** Cultural and spiritual values underpin land and natural resources management among Indigenous peoples. Most Indigenous peoples' groups have specific rules, restrictions, practices, and rituals to regulate people's behavior in their relationships with non-human spirit agencies and the resources they

¹⁵ Indigenous Peoples and Sustainability Policy: Exploring the Politics and Practice of “Indigenous Sustainability”. Source: <https://sustainability-innovation.asu.edu/news/archive/indigenous-peoples-sustainability-policy-exploring-politics-practice-indigenous-sustainability/>

protect.¹⁶ Traditionally, social taboos such as *Enturuj* among the Maasai prohibited the use of wildlife and other activities deemed destructive to environmental integrity. Harvesting of natural products is highly regulated. It is taboo to eat game meat as the owner and keeper of livestock.

- **Indigenous knowledge systems & practices:** Indigenous knowledge is central to supporting and enabling adaptive capacity, resilience, and sustainability in the face of the climate and biodiversity crisis. Indigenous ways of knowing are dynamic knowledge systems, with successive generations assessing and adapting ‘old’ knowledge to accumulate and create new knowledge. It is a shared system of knowledge that is collectively reshaped, enriched, and exchanged by and among a web of social actors. Indigenous knowledge is, therefore, continually called into question and refreshed. Knowledge holders do adjust and modify their actions in response to environmental change. Cultural attitudes and values of society are the foundations on which such knowledge is acquired, transformed, and deployed (Takano, 2004).
- **Context-based relationality & local economies:** Indigenous approaches to sustainability and development emphasize place and locality, relationships, and sacred exchanges where the quality of life is measured and adjusted to meet the needs of the human and non-human community and future generations.¹⁷ Indigenous peoples’ traditional local economies and livelihood systems, which are place-based or ecosystems-based, still exist. The persistence of these systems is directly linked with Indigenous peoples’ efforts to protect their territories and ecosystems. Traditional economies would have long disappeared if these ecosystems were destroyed or Indigenous peoples were displaced from their territories where these ecosystems are found.
- Indigenous peoples’ assessments of the world climate and environmental crisis, based on their own knowledge and understanding, have found global approaches thus far to be lacking. The understanding of community encompass present community and future generations—their ancestors, the seen, and the unseen, the yet-to-be-born generations. These sustainable uses and responses to climate change strategies by Indigenous peoples constitute a missed opportunity in the efforts toward sustainable utilization and nature-based solutions to climate change.
- **Community-based governance:** Sustainable resource use or stewardship is intrinsic to the customary governance systems of Indigenous peoples, grounded on strong internal regulatory mechanisms. Leadership structures and customary law include relationships and relationality with the environment and are crucial for place-based sustainability. Traditional or customary institutions deal with human-environment interactions, not only human-to-human relations. These institutions ensure the integrity of Indigenous peoples’ knowledge systems and their corresponding application and adaptability to context dynamics.¹⁸

¹⁶ Game masters and Amazonian Indigenous views on sustainability A´ lvaro Fern´andez-Llamazares^{1,2} and Pirjo Kristiina Virtanen, 2020

¹⁷ Introduction: toward more inclusive definitions of sustainability, Pirjo Kristiina Virtanen^{1,2}, Laura, iragusa^{1,2} and Hanna Guttorm¹, 2020

¹⁸ Working with Indigenous, local and scientific knowledge in assessments of nature and nature’s linkages with people Rosemary Hillet al. Current Opinion in Environmental Sustainability 2020, 43:8–20

- **Practices of care towards nature:** To sustain practices that benefit the well-being of both humans and non-humans also means engaging in practices of care, responsibility, and respect for the environment, land, and territory. It means preserving the biodiversity available in these territories. It means letting Indigenous peoples continue to engage in values, methods, and exercises that allow this biodiversity. Indigenous care towards the land, the environment, and other-than-human beings is often founded on respectful and sacred relations as well as shared responsibilities. It includes caring for and respecting designated spiritual sites associated with specific material and immaterial cultural heritage. People should therefore genuinely embrace, generation after generation, the responsibility of caring for the environment, willing to act as its guardians or stewards.
- **Social justice and inclusivity:** Equality and justice is another principle promoted by Indigenous peoples reflected in the premium placed on the equal treatment of humans and the environment. Justice refers to how the use of natural resources is free for all without jeopardizing the need of future generations. Values, knowledges, practices associated with NBS are embedded in social actors societal ascribed roles designated for various social actors who, in turn, include the youth, women, and elders.

V. CONSTRAINTS AND CHALLENGES

- **Diminishing collective land tenure:** Indigenous peoples face multiple threats and challenges over their lands, forests, territories and resources from internal and external actors as well as from nature. These include land fragmentation and privatization, modernization, climate change, as well as socio-political and economic pressures. Indigenous peoples, productive and strategic lands, such as wetlands and forests, continue to be annexed for uses, which are perceived as more productive—conservation, commercial agriculture, ranching, tourism, and mining of natural resources and much more is being individuated and privatized.¹⁹ This ultimately constraints and weakens Indigenous peoples' sustainable NBS strategies that are useful in adapting to and mitigating changes within the landscape.
- **Disregard for and devaluation of indigenous knowledge systems and practices:** Indigenous ways of knowing and associated practices are often misunderstood, perceived to be a static set of information, handed down with little change from one generation to another which are then ultimately disregarded and devalued by policymakers and development practitioners. Yet, among Indigenous peoples, indigenous knowledge is continually called into question and accordingly refreshed.²⁰ Indigenous knowledge is a shared system that is collectively reshaped, enriched and exchanged by a web of social actors.²¹
- Although indigenous knowledge is evoked in biodiversity conservation and climate change discourse and planning processes, Indigenous peoples' actual participation as knowledge- holders and actors and the integration of such knowledges in research work and

¹⁹ Ibid

²⁰ Indigenous, local and traditional knowledge systems and practices, including indigenous peoples holistic view of community and environment, are major source of adaption to climate change, but these have not been used consistently in existing adaption efforts. Integrating such forms of knowledge with existing practices increases the effectiveness of adaptation (IPCC, 2014:27)

²¹ Ibid

intervention activities on the ground remain incongruent with these gains in text. This is often related to the reluctance by scientists, state agencies and development practitioners to relinquish power and devolve decision-making and knowledge creation processes to Indigenous peoples.

- **In-optimal representation and participation in relevant engagement spaces:** NBS related dialogues, visioning and actions happen at diverse scales and levels such as multilateral processes including the United Nations Framework Convention on Climate change (UNFCCC), United Nations Convention on Biological Diversity (UNCBD), Sustainable Development Goals (SDGs), United Nations Food and Agricultural Organization (FAO), Global Environmental Facility (GEF), the Green Climate Fund (GCF), and Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), among others. At national level strategies and approaches with a bearing on NBS such as nationally determined contributions (NDCs), national adaptation and mitigation plans, National Biodiversity Action plans, green economy', Reducing Emissions from Deforestation and Forest Degradation (REDD+), the 'natural capital' approach, and the shift towards sustainable energies sources—are critical spaces for which Indigenous peoples' experiences on NBS should be incorporated. Indigenous voices remain on the margins of global, regional and national discussions on the collective future of humanity and the planet.
- **Unsafeguarded climate change and biodiversity loss response measures:** Nationalization and privatization of natural resources and associated payment for ecosystem services under the nature-based climate solution narratives, such as REDD+ and Climate Smart agriculture, must be reported under Nationally Determined Contributions (NDCs) highlighting also the potent serious entrenchment of historical exclusion, marginalization, and violation of Indigenous peoples' rights. Despite growing and elaborate Indigenous peoples' targeted policy safeguards, including Cancun safeguards on REDD+ and other intervention specific safeguards, there is negligible evidence on the ground to suggest effective respect of Indigenous peoples' rights and interests.
- **In-optimal and incoherent policy imperatives on NBS:** Increasingly, new policies and laws have been promulgated across levels to ensure the recognition, respect, protection, and fulfilment of Indigenous peoples' rights. While the legislative and policy environment with respect to Indigenous people' rights and contributions to NBS is generally improving, particularly in the context of climate change with the Local Communities and Indigenous Peoples (LCIP) platform, article 8(j) of the Convention on Biological Diversity, the eleven-operating principle of Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), and positive development in national legislation such as in Kenya and Democratic Republic of Congo (DRC), among others, challenges still persist. These challenges include the non-recognition of Indigenous peoples' identity, land tenure rights, customary governance and indigenous and traditional knowledge as well as the non-coherence, weak enforcement and implementation of policies—the gap in understanding policy context among policymakers, among others.
- **In-optimal access to resources to support NBS:** Many Indigenous communities live in environments that are vulnerable to changes in climate, and, as a consequence face significant challenges to their territorial and cultural survival. Although these communities may have historically been able to adapt, the sudden rise in sea levels, shifts in growing seasons, and erratic weather have created problems that require both technical and financial assistance. Indigenous peoples in all regions are already feeling the impacts of climate change and are among those most vulnerable to its impacts due to their high dependence on natural resources for livelihood. Indigenous peoples are not only faced with direct adverse impacts of climate change, but they also suffer from the effects of unsafeguarded mitigation measures and actions which are taken in response to climate change.

- Despite this positive development, however, there is still no fully independent Indigenous peoples'-owned and -managed global funding mechanism. In addition, much of the assistance is still too new and of insufficient amounts to address this identified need.
- There is a need to establish dedicated financial mechanisms for Indigenous peoples and local communities for scaling up natural resource management to halt the drivers of deforestation, increase resiliency and advance adaptation action on the ground.
- First, negligible amounts of climate and nature-based solution financing reach Indigenous peoples. Second, climate finance architecture is complex with finance channeled through national, bilateral, and multilateral funding arrangements with minimal opportunities afforded to Indigenous peoples. Third, most existing Indigenous peoples grant facilities are small in size, narrow in scope of activities eligible for support, landscape specific (mostly forests), and far apart. Indigenous peoples therefore need scaled-up, dedicated financing to enable a sustainable application of NBS in areas such as security of land tenure, enabling direct representation and participation including free, prior and informed consent (FPIC), support for research and documentation of indigenous knowledge and associated practices, capacity building on policy, and affirmative action in gender, among others.

VI. PROPOSED POLICY RECOMMENDATIONS AND WAYS FORWARD

a) States and governments, multilateral bodies and other practitioners

- Recognize, respect, promote Indigenous peoples' rights: Recognize and promote human rights-based development and policy approaches that support Indigenous peoples' ways of life founded on NBS and positive people-nature relations – identity, culture, land and territories, self-governance, self-determined development, social justice, and access to benefits - consistent with the United Nations Declaration of the Rights of Indigenous Peoples (UNDRIP), integrating robust and effective safeguards, both to do good and prevent adverse impacts.
- Land tenure security: Support land tenure transitions towards securing customary land tenure for Indigenous peoples
- Ensuring effective voice of Indigenous peoples and responsive institutional arrangements: Strengthen direct representation, full and effective engagement of Indigenous peoples in decision making and development processes on NBS including through the operationalization of FPIC principles and processes. Establish and operationalize enabling legislations, policies and relevant institutional arrangements to facilitate good governance and Indigenous peoples' responsive institutions.
- Support, respect promote indigenous knowledge: Pro-actively support documentation of indigenous knowledge and traditional practices relevant in NBS approaches, including developing and expanding partnerships in generating knowledge, especially identifying relevant indicators on traditional knowledge and wellbeing of Indigenous peoples.
- Promote and respect customary governance: Recognize and strengthen customary governance systems and Community-Based Monitoring Systems, including the role of community elders who are custodians of indigenous knowledge systems and practices, so as to ensure Indigenous peoples' worldviews, including notions of reciprocity and relationality, are integrated in NBS strategies.
- Access to financial resources: Establish policy mechanisms towards enhanced direct access of Indigenous peoples to upscaled, accessible, equitable, long-term financial resources in the context of NBS.

- Capacity building: Support and empower Indigenous peoples through capacity-building programs that will enrich their knowledges and skills on NBS related policies, interventions and innovations. This should be enhanced through the promotion of disaggregated data on national and global statistics relevant to Indigenous peoples.
- Promote, support, enhance and sustain exchanges, reporting and knowledge sharing efforts on various documentation and reports on Indigenous peoples' initiatives and actions at various relevant levels and platforms—Intergovernmental Panel on Climate Change (IPCC), LCIP under the UNFCCC, Local Biodiversity Outlook (LBO) reports and art. 8(j) of the CBD, and National Biodiversity conservation, climate and sustainable development agendas. Integrate indigenous knowledge systems and practices (IKSPs) within NDCs, and national climate response strategies.
- Develop policy frameworks for sustainable production and consumption, enabling immediate upscaling of sustainable economies and revitalizing indigenous food systems.
- Research, publication, and reporting within institutions of higher learning or academia, should pro-actively engage with and include indigenous knowledge, practices, languages, and philosophies in their work. Promote knowledge pluralism—a practice where multiple cultural expertise and knowledge can establish meaningful relationships to inform climate change, biodiversity loss, and sustainable development response measures and aspirations.

b) Indigenous peoples

- Strategize and sustain their lobbying and advocacy efforts on their rights at various levels and spaces of engagement relevant to NBS. Sustain engagements on NBS, including in processes and mechanism such as IPCC, LCIP and the Paris Agreement under the UNFCCC, LBO reports and article 8(j) of the CBD, and National Biodiversity conservation, climate and sustainable development agendas. Also, expand partnerships and collaboration with other stakeholders who are committed to the advocacies of Indigenous peoples, climate action, NBS—artists and filmmakers, among others.
- Continue building capacities, knowledge and skills on documentation, development processes, monitoring, organizational development, and leadership, among others in the context of nature-based solutions.
- Civil Society Organizations (CSOs) to conduct sensitization, education, consultation in designing related projects and programs in Indigenous peoples' communities or close to their communities.
- Tebtebba and its partners to furnish copies of the research report to stakeholder country governments and other multilateral bodies as basis for policy inputs, academe, CSOs, Indigenous communities for information, reference, and capacity building.