



Rio Conventions Joint Capacity-building Programme

Enhancing the Role of Local and Indigenous Knowledge in Supporting Synergies Amongst the Rio Conventions

INFOBRIEF 4

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1. Context

Most indigenous communities have lived on the earth sustainably for centuries, using practices that conserve biodiversity, sequester carbon, and prevent desertification. For instance, in Ecuador, the Kichwa and Kijus communities have developed a polyculture cropping system that mimics the rainforest structure with various layers of trees. These communities have developed a connection with nature, and nature always works synergistically.[i] On the contrary, most human interventions involve designing projects to achieve specific, standalone objectives. There is an urgent need to change this standalone perspective and introduce a synergistic approach. The Indigenous communities can play a crucial role in this process with their deep understanding of nature, which has passed the test of time.

While the world is looking for a knowledge-driven solution for protecting our planet, indigenous communities have passed knowledge from generation to generation through their practices. This knowledge can significantly contribute to adopting a synergistic process in implementing the three Rio Conventions - CBD, UNFCCC, and UNCCD. By integrating local and indigenous knowledge, the Rio Conventions can better achieve the shared goals of climate change mitigation, biodiversity conservation, and land degradation neutrality. Indigenous knowledge can also provide flexible, adaptive management strategies well-suited to dealing with uncertainty and change.

2. Synergies in Practice

Considering the environmental challenges we are currently facing, the application of indigenous knowledge in nature needs to be properly studied.

2.1. The Indigenous Satoyama Landscape Management System of Japan

Satoyama is an indigenous Japanese land use system featuring integrated landscapes with diverse uses such as paddy fields, farmland, woodlands, grasslands, irrigation systems, and human settlements nearby. With their mosaic pattern of diverse land uses and associated plants, Satoyama landscapes provide habitats for various animals and insects, leading to high biodiversity.[ii] People have found ways to meet their needs in Satoyama landscapes while coexisting with different animals and native species. For instance, Coppicing, a traditional satoyama practice, involves cutting down trees like oaks every 10 to 20 years for charcoal production, then allowing them to regrow from old stumps instead of replanting through seeds or seedlings. This allows the tree to utilize energy from its root systems for faster regeneration.[iv]



Picture 1: Rice field and adjacent woodlands in a typical satoyama landscape

Within the Satoyama system, the resource collection process is sustainably managed by community rules. For instance, the wood collection process is closely guided, especially in communal woodlands and grasslands, to prevent the overexploitation of natural resources.[v] Thus, the Satoyama system contributes to climate change mitigation by conserving and enhancing carbon sinks and forest reservoirs.[vi] Sustainable resource management helps maintain soil fertility, thereby preventing land

degradation. Satoyama landscapes, like other systems based on indigenous knowledge around the world, have suffered a period of decline, especially after the second world war of Japan.[vii] Recently, Japan has been working to restore and preserve Satoyama systems, with international initiatives like the Satoyama Initiative disseminating its management techniques in other countries.[viii]

2.2 The Amazonian Chakra Agroforestry System of Indigenous Communities of Ecuador

In Ecuador's Amazonian Chakra Agroforestry, cocoa is cultivated together with timber, fruit, medicinal, handicraft, edible, and ornamental species.[ix] In this system, tall trees like cacao provide shade, while fruit trees, medicinal plants, and crops fill the lower layers.[x] This diversity creates habitats for many species, promoting a thriving ecosystem. Chakras often incorporate native plants that attract pollinators and beneficial insects, further enriching the biodiversity and promoting natural pest control. FAO recognizes the Chakra Agroforestry system practiced by Ecuador's Indigenous communities as a Globally Important Agricultural Heritage System (GIAHS).[xi]



Picture 2: Chakra agroforestry system of Ecuador

The diverse vegetation in a chakra, particularly the tall trees, acts as a carbon sink, absorbing and storing atmospheric carbon dioxide.[xii] This helps mitigate climate change. The multi-layered vegetation cover minimizes soil erosion from wind and rain.[xiii] Some chakras also incorporate raised planting beds and ditch systems to conserve precious soil and water to prevent land degradation.[xiv] The latter can serve as adaptation measure as it maintains soil health and water retention, enhances biodiversity, and supports sustainable agriculture [xv], thus creating more resilient communities. These examples demonstrate the significance of indigenous knowledge in addressing the challenges of our planet.

The Satoyama in Japan and the Amazonian Chakra model in Ecuador exemplify how indigenous knowledge can address major environmental issues. Despite the differences in their development/industrialization stages, both countries' indigenous practices show that valuable insights

can be gained from indigenous communities. Along with these two examples, there are numerous other initiatives where indigenous societies have implemented innovative environmental management systems. For instance, the Andean Chakra farming method of the Kichwa Indigenous People [xvi] and the sustainable grazing practice of the Maasai Mara of Kenya [xvii] also demonstrate how indigenous knowledge can be leveraged to mitigate biodiversity loss, ensure climate change adaptation, and minimize land degradation.

3. Entry Points to leverage and transfer indigenous knowledge for synergies

It's crucial to promote innovative indigenous practices to mitigate climate change, conserve biodiversity, and achieve land degradation neutrality. Having said that, it is also essential to recognize that indigenous knowledge can be tied to the local ecosystem, climate, and resources. Transferring these techniques to different locations may not yield the same results due to variations in these factors. Further research can identify the conditions under which these indigenous techniques are effective and the modifications needed to adapt them to other countries.

3.1 Integration of Indigenous Knowledge into Policy and Synergistic Project Design

Ensuring active consultation with indigenous communities is essential when developing policies under the three Rio Conventions. Their knowledge can be invaluable in designing synergistic projects. To ensure the community's active participation in synergistic project design, capacity-building support and other resources must be provided to the community leaders. This will ensure effective knowledge sharing and participation in policy discussions.

3.2 Importance of Research for Ensuring Synergies

Extensive location-specific research is necessary to explore the realistic transfer and replicability potential of different indigenous techniques between countries. It is essential to understand the underlying interactions of different ecosystem elements, like the native tree selection process in Chakra's multi-layered vegetation. Until now, the interaction of these elements has been viewed as a "Hidden Mechanism," and one potential entry point can be to decode many unique elements of the indigenous environment management system. This understanding can then be used to adopt a synergistic process in implementing the three Rio Conventions. These indigenous models have proven their resilience over time, and a deeper understanding of these indigenous systems can offer valuable insights for policymakers.

3.3 Incorporating Indigenous Knowledge in Project Monitoring

Depending on the project context, the result management process and monitoring tools for synergistic projects can vary from standalone projects. In a synergistic project's result management process, the indigenous knowledge of community members can be incorporated. This could involve using indigenous indicators alongside scientific indicators. For instance, native communities often track the abundance and presence/absence of specific bird species as an indicator of overall ecosystem health. A decline in bird sightings, particularly insectivores, could suggest a decrease in insect populations due to habitat loss. Scientific bird population surveys can complement this indigenous process during the M & E phase to confirm trends and identify potential causes.

3.4 Preserving Indigenous Knowledge and Facilitate Knowledge Exchange

Indigenous knowledge systems are under threat due to modernization, globalization, and other factors. The three Rio Conventions can jointly provide a platform for documenting and preserving this knowledge and promote its wider recognition and use. Subsequently, the conventions can jointly enable communication and knowledge exchange between indigenous communities, donors, and global climate funds. Along with development partners, different indigenous communities can also share knowledge among themselves and understand each other's best practices. This can foster knowledge sharing and bring innovative ideas for addressing biodiversity, climate change, and desertification issues.

4. Recommendations for policymakers and practitioners

It is essential to conduct extensive research on the different traditional practices of indigenous communities. Subsequently, it is essential to disseminate these indigenous approaches and good practices that foster synergies between Rio conventions to different development partners, global funds, government agencies, NGOs, and other stakeholders. Training support for indigenous community leaders can facilitate their engagement and knowledge sharing with global policymakers.

For synergistic project result management process, the indigenous knowledge of community members needs to be incorporated.

National policymakers must ensure active consultation with indigenous communities while developing different national policies, strategies, and action plans under the three Rio Conventions. Systematically incorporating indigenous and traditional knowledge into national policies ensures that these policies are comprehensive, culturally sensitive, and effective across various ecosystems.

Indigenous community members should be provided a key role in planning, implementing, operating, and maintaining different Nature-based Solution (NbS) projects. Having Indigenous community members' stewardship in the NbS project planning process is very important. Without that, these community members will not take ownership of NbS projects

Granting tenure rights empowers indigenous and local communities to manage their lands using traditional practices that are inherently sustainable and ecologically beneficial. For instance, the Australian government recently acknowledged the critical role of Aboriginal communities in land preservation by returning 160,000 hectares of rainforest within the Daintree National Park to the Eastern Kuku Yalanji community.[xviii]

Recognizing and protecting indigenous communities' cultural institutions and norms can ultimately facilitate a synergistic approach in natural resource management. In many indigenous communities, protecting nature is part of a cultural norm. So, formally recognizing this norm incentivizes indigenous communities to actively participate in natural resource conservation. Australia followed this strategy, and now indigenous Australians are returning to their lands to manage them for conservation.[xix]



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