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Ex-post Evaluation Report

Assessment of Thematic Group on Forest Landscape Restoration (FLR) in Selected ITTO projects

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Summary

Landscape restoration involves restoring and enhancing the ecological integrity of a landscape in such a manner that it benefits both the people and natural components in economic, environmental and social benefits. It is therefore an integrated approach that aims to holistically address issues of land degradation, making clear linkages between underlying and direct drivers to the state of the landscape ((Sabogal et al, 2015) UNEP and FAO, 2022). These drivers are linked to natural factors, but several are linked to political, economic and socio-cultural decisions that are made by various actors who operate in the landscape (Nishi and Subramanian, 2023). Hence, the purpose of landscape restoration is also a means to deliberate between the different actors/ stakeholders in a landscape regarding multiple use priorities of the land and resources and furthermore, identify which ones could lead to sustainable outcomes and lower trade-offs.

Following this concept, Forest Landscape Restoration (FLR) represents an ongoing process of regaining ecological functionality and enhancing human wellbeing across degraded and deforested forest landscapes. It focuses on active participation, adaptive management and the establishment of a consistent monitoring framework (ITTO,2020; IUCN et al, 2023). It is also an effort to ensure that all relevant stakeholders, from local communities, to businesses and policymakers, get fully involved in the design and implementation of FLR related activities. This is to affirm that everyone in the landscape is engaged in practices aligned with sustainability that would minimize risks of negative trade-offs and conflicts over potential land uses.

The International Tropical Timber Organization (ITTO) has developed a guidance on the principles of Forest Landscape Restoration developed by the Global Partnership on Forest and Landscape Restoration (GPFLR). These six principles include *ensuring the focus is kept on landscapes and not merely on the forests; support participatory governance; restore multiple landscape functions for multiple benefits; maintain natural forest ecosystems; tailor interventions to local contexts and foster adaptive management for long term resilience.* ITTO has been fostering FLR through supporting implementation of FLR projects in different countries, using the above principles. Through an analysis of project completion reports of 14 projects funded by ITTO across the tropics in Asia-Pacific, Africa and South America, lessons on the effectiveness of FLR towards achieving socio-ecological resilience and what challenges are encountered in its design and implementation are identified in this Report. Furthermore, how well are gender considerations included in project activities is another dimension that is examined.

Based on the reports of the projects (case studies), they were assessed against the 6 FLR principles based on project design, implementation and outcomes. Broad trends and gaps in implementing FLR were identified. The main implementing agencies across all the case studies were forestry related institutions, and their main focus of interest was to conserve forest species, native germplasm, maintain or enhance forest ecosystem integrity all aligned within the broader principle of forest restoration. Most of them have adopted a landscape approach factoring in the necessity to involve other land uses around the forest ecosystem, and working with other stakeholders including local communities, academics and other departments to identify solutions that work for everyone. In the process, emphasis on stakeholder consultations, training to youth and women members of communities to address their motivations and importantly, co-designing augmenting livelihood options for local communities through better cropping practices and value addition opportunities are key components of these projects.

[1] This ex-post evaluation report will be published as a joint publication between ITTO and the United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS) in Tokyo, Japan. This publication is titled: “Advancing Forest Landscape Restoration in the Tropics: Experiences and Lessons for Socio-Ecological Resilience and Empowerment of Women in ITTO Projects.” The report can be downloaded at the DOI link: https://doi.org/10.53326/CGJY6327.

The most common challenges across the case studies that were identified as requiring attention in order to ensure successful FLR implementation include: poverty of communities in the landscapes that either results in overexploitation of forest resources, or unsustainable production practices that adversely impact forest ecosystems; poor enforcement of laws to check environmental degradation and enhance forest conservation; inadequate capacities, skills and awareness about FLR among a wide range of stakeholders from policymakers to local communities; disputes and consequent lack of trust between stakeholders in the landscape requiring confidence building measures and appropriate capacity building and awareness-raising activities; rural migration in search of better economic opportunities that deprives the landscape of much needed manpower and skills; and poor resources and infrastructure including human, technical and financial resources.

Addressing these challenges through consultative and deliberative processes is key to ensuring that the complex interdependencies between people and nature in the forest landscape are well factored in the design of FLR interventions. This enables achieving the broader goal of achieving socio-ecological resilience, a broader pursuit that calls for engagement and consultations with diverse stakeholders in a landscape, mapping and taking stock of resources and ecosystem integrity, co-designing management plans and land/ seascape use decisions that factor in the specificities within a socio-ecological context (culture, economy, demography, gender, natural assets, etc) and thereby minimize negative trade-offs between different types of decisions.

The analysis helped also identify critical areas to focus on to ensure FLR interventions can be effective including: investing in education and awareness-raising on FLR related practices across stakeholder groups; meaningful community level consultation to co-design interventions; building trust and consensus among stakeholders; identify issues that affect socio-ecological resilience and wellbeing in the operational contexts; identify and support development of alternative economic activities; establish joint monitoring and assessment teams between state and non-state actors; set up system of rewards and incentives for good practices to encourage uptake of concepts and practice of FLR; and ensure greater representation of marginalized groups, especially women, youth to address their priorities and further assure the process of FLR is equitable and just. While several of the projects expressly state youth engagement to ensure continuance of the project, meaningful inclusion of women is still not well entrenched.

For research and policy considerations, this implies that transdisciplinary approaches be promoted, encourage multistakeholder discussions on socio-ecological resilience, embed FLR principles in all forestry related implementation policies, design and implement appropriate capacity development programs for all actors involved in decisions related to forest landscapes and restoration activities through innovative mechanisms including peer learning exchanging and social learning tools, and finally ensure that principles of equity are incorporated in policy plans and programs including gender sensitive plans.

Introduction: Landscape Restoration and Forest Landscape Restoration

Forest restoration by local Togolese women in the village of Agouegan, Togo. Photo: Soka Gakkai

Landscape restoration involves restoring and enhancing the ecological integrity of a landscape in such a manner that it benefits the livelihoods and wellbeing of people in the landscape in economic, environmental and social dimensions. It is therefore an integrated approach that aims to holistically address issues of land degradation, making clear linkages between underlying and direct drivers to the state of the landscape ((Sabogal et al, 2015) UNEP and FAO, 2022). These drivers are linked to natural factors, but several are linked to political, economic and socio-cultural decisions that are made by various actors who operate in the landscape (Nishi and Subramanian, 2023). Hence, the purpose of landscape restoration is also a means to deliberate between the different actors/ stakeholders in a landscape regarding multiple use priorities of the land and resources and furthermore, identify which ones could lead to sustainable outcomes while minimizing trade-offs.

Forest Landscape Restoration is defined as an ongoing process of regaining ecological functionality and enhancing human wellbeing across degraded and deforested forest landscapes. It focuses on participation, adaptive management and a consistent monitoring framework (ITTO,2020; IUCN et al, 2023). These three elements are crucial to ensuring the sustainability of restoration activities as it clearly identifies that socio-cultural- environmental contexts could change requiring an adaptive approach, and further also ensuring a deeper sense of ownership across all actors from local communities to big businesses and companies who operate in the landscape.

The International Tropical Timber Organization (ITTO) has developed a guidance on the implementation of the FLR principles developed by the Global Partnership on Forest and Landscape Restoration (GPFLR) (ITTO, *ibid*). It comprises 6 principles with associated guiding elements that cut across multiple dimensions of economic, ecological and social aspects in a forest landscape. These include:

Principle 1: Focus on landscapes –FLR should focus not individual sites, but on entire landscapes. This would therefore include non-forested areas also, considering a variety of existing interacting land uses and tenure and governance arrangements in the landscape

Principle 2: Engage stakeholders and support participatory governance- actively engaging different stakeholders, including women, young and vulnerable groups across the entire planning and decision cycle related to use, restoration goals and strategies, implementation methods, benefit sharing, monitoring, assessment and review

Principle 3: Restore multiple functions for multiple benefits- aim to restore multiple economic, social and environmental functions in a landscape and generate a wide range of ecosystem goods and services that equitably benefit stakeholders

Principle 4: Maintain and enhance natural forest ecosystems within landscapes- speaking to ecological and social connectivity, this principle urges restoration of dynamic forest processes related to species composition, structure, productivity, biodiversity, pollination and floral and faunal genetic diversity. FLR interventions are expected to restore the productivity, ecosystem functions and carbon stocks of degraded tropical forests.

Principle 5: Tailor to the local context using a variety of approaches- urges that the planning and implementation of FLR responds to the needs of local people and ecosystems, focusing on contextual realities. A full involvement of local stakeholders in the development, implementation, monitoring and assessment of different interventions will help develop a well-adapted FLR.

Principle 6: Manage adaptively for long-term resilience – this captures the long-term sustainability of FLR activities, that need to be adaptive to changing dynamics of socio-ecological contexts from the time of commencement of activities. Achieving this principle requires that all other principles are adhered to

These principles are in line with other guidance on FLR advocated by organizations like the FAO such as the Forest and Landscape Restoration Mechanism (see for instance IUCN et al, 2023). ITTO has been fostering FLR by supporting projects in different countries to undertake forest restoration using these FLR principles. In this report, an analysis of 14 case studies supported by ITTO are analyzed to examine the extent to which they have been successful in implementing FLR, and further the additional benefits that such an approach has had to the socio-ecological system. It also examines the implications to inclusion of the priorities of women in the planning and implementation of the activities- an objective high on the international policy agenda but considered insufficiently addressed.

Case study analysis of 14 projects of ITTO was undertaken and synthesized with literature reviews on experiences relating to FLR in other contexts. The projects were assessed for each of the 6 principles of FLR and juxtaposed with similar landscape approaches, with the aim of understanding what challenges are commonly encountered in advancing such an integrated approach, what drives successful implementation and further, what implications does it have for women. Gender inclusive interventions has become an important

implementation agenda (see for instance Target 23 of the Kunming Montreal Global Biodiversity Framework and other such policy frameworks), and ITTO also has a clear vision on this (ITTO, 2022). Although technically FLR activities are expected to be inclusive of all stakeholder concerns, whether the perspectives and agency of women is well entrenched needs to be understood. This is to ensure better design of future projects and more importantly, including relevant indicators in the monitoring, assessment and review of projects to ensure that gender issues are well embedded in project design and implementation.

Methodology, Analysis and synthesis

The 14 case studies were assessed based on their Project Completion Reports against the 6 Principles of FLR. They were scored high (XXX), medium (XX), low (X) based on how they have reported the design, implementation and outcomes of their project w.r.t FLR. The analysis behind the findings in this report is therefore a post-facto assessment, with the intention to identify broad trends in compliance with FLR principles and to identify where any gaps lie for redressal. Wherever appropriate, comparisons with other literature are made to highlight broader trends in adoption of Landscape restoration efforts. The main areas of focus of each project are highlighted in Table 1

Table 1 highlighting the projects and their main focus areas

Project title/ Area	Country	Focus activities
Improving Forest Functions in Bengkulu Province through Community Participation in Rehabilitation of Degraded Forests by Using Local Prospective Commodities	Indonesia (IND-B)	Implement appropriate technology for production of quality planting materials, and improve stakeholder involvement and community wellbeing through forest and land rehabilitation
Encouraging customary landowners in the lowlands of Papua New Guinea's Central Province to reforest their grasslands with high value trees	Papua New Guinea (PNG)	Community reforestation through customised training, awareness raising and support that includes forestry using well suited species and food crop production.
Initiating the conservation of Cempaka species through plantation development with the local community participation in North Sulawesi	Indonesia IND (C)	Focus on enhancing Cempaka species restoration and production through community participation
Accelerating the Restoration of Cibodas Biosphere Reserve Functions through Proper Management of Landscapes involving local stakeholders	Indonesia IND (CBR)	Address inadequate conservation and sustainable management of biodiversity and ecosystems in the Biosphere Reserve through Integrated Strategic Management plans involving stakeholders in the landscape
Sustainable pure and mixed forest plantational development in the transitional zone of Ghana's Biakoye district assembly, employing poverty reduction strategies	Ghana (GHA)	Promote planting of mixed indigenous timber species of commercial value and support development of intercropping of staple food crops

Community based restoration and sustainable management of vulnerable forests of the Rewa Delta, Viti Levu	Fiji (FJI)	Tackle illegal trade in wood and non-wood products and strengthen governance framework for sustainable mangrove management
Support for Operational and Planning Capacity building for stakeholders in the private and community forestry sector in Togo	Togo (TGO-CF)	Enhance forest cover of Togo by 30% by 2050
Development of a regional strategy for the Restoration and Rehabilitation of Degraded Areas on the south coast of Peru	Peru (-PER)	Develop Land management tool to improve environmental and socio-economic conditions through restoration of degraded lands and sustainable forest and agroforestry systems
Capacity building on Forest and Land fire management in Indonesia	Indonesia (IND-FM)	Participatory approaches to prevent forest fires engaging multiple stakeholders
Sustainable management of production forests at the commercial scale in the Brazilian Amazon	Brazil (BRA)	Develop a software application and platform to monitor and manage sustainable forest management through integration of data and collaboration from multiple stakeholders
Increasing commercial reforestation competitiveness in Costa Rica	Costa Rica (CRA)	Community livelihood development, enhance competitiveness of commercial reforestation through effective financing system
Enhancing the implementation of landscape management of Giam-Siak Kecil-Bukit Batu Biosphere Reserve (GSK-BR) in Riao Province of Sumatra Island, Sumatra, Indonesia	Indonesia (IND-GSK)	Sustainable management and conservation of the Biosphere reserve, strengthen institutional capacity, enhance stakeholder partnerships
Enhancing conservation and sustainable management of Teak forests and legal and sustainable wood supply chains in the Greater Mekong Sub-region	Thailand, Myanmar, Lao PDR, Cambodia, Vietnam (MKG)	Conserving natural teak forests and enhancing teak plantation forests; strengthen community-based forestry and agroforestry activities and enhance regional and international collaboration for information sharing, networking and policy development
Support for women's groups with the restoration of forest landscapes in the Prefectures of Blitta and Lacs, Togo	Togo (TGO-BL)	Food security, energy security and income generation from wood and non-wood products; empowering women groups

Operationalizing FLR

Across the different countries and contexts covered by the case studies, it is evident that FLR approaches are pursued as a response to address some specific issues in the landscape, that requires collaboration between different stakeholders, specifically the buy-in of local communities. These range from for instance, ensuring conservation of native forest species (e.g.,Greater Mekong, Indonesia projects), preventing forest fires (e.g., Indonesia-Sumatra and Kalimantan), prevent loss of important ecosystem services (viz., shoreline protection (Fiji), water regulation, soil fertility, etc). Across all the case studies, the common refrain of enhancing economic alternatives for communities to ensure sustainable forest management, and establishing co-governance mechanisms for forest and buffer zones to ensure ecological integrity is noteworthy. The design of interventions to establish FLR includes participatory and inclusive consultations with local actors, including local communities, businesses, government bodies, academia, etc. In many projects, engagement with youth is a major component that is aimed to ensure sustainability of the project by creating more awareness among the next generation and motivate them to adopt and continue sustainable practices. Before assessing the operational success of FLR and factors that supported their success, it is pertinent to understand what challenges are encountered in FLR operationalization. A narrative analysis of the project reports highlighted some critical challenges that need to be addressed for effective FLR program implementation.

The most important challenges include

- **Poverty-** This has been recognized across multiple case studies as a primary reason why local communities dwelling within and in the transition and buffer zones of forests engage in over-exploitation and illegal extraction of forest resources (wood and non-wood). Addressing poverty by leveraging on the resources, skills, knowledge and preferred occupations of the communities is necessary. Poverty as a driver of environmental degradation has been acknowledged for a long time and is therefore considered a priority issue to be addressed for effective environmental management (see for instance Roe et al, 2012) Community engagement, a basic principle of FLR, seems to have helped initiate activities to address this challenge (see for instance Chaigneau et al, 2018).
- **Poor enforcement of laws** – Many countries in the contexts of the case studies have well established laws to regulate over-exploitation, strengthen forest conservation, and check environmental degradation. However, often the mechanisms of implementation fall short of achieving these goals. Inter-agency consultations especially to work in collaboration to synergize efforts and resources is identified as a necessary condition in several of the case studies. This has been well acknowledged in global assessments on implementation of environmental laws (see for instance UNEP, 2019)
- **Inadequate capacities, skills and awareness about FLR-** Implementing FLR requires a good understanding of the different principles and how to use them in different contexts, and during different phases of a project. Often, awareness about FLR is lacking or inadequate amongst several stakeholders (from policymakers to local communities). Strong efforts to developing capacities of relevant agencies and communities and other stakeholders in the landscape to work coherently has been identified as essential. (IPBES 2022; Kelemen et al, 2023)
- **Disputes between stakeholders-** Local communities and other stakeholders from a landscape often do not easily engage with FLR activities due to unresolved disputes between them, often linked to land and jurisdictions of influence and securing and distribution of benefits. Building trust and pursuing deliberative approaches to resolve territorial disputes are critical to implement FLR effectively. The utility of using deliberative approaches to valuing and assessing ecosystem resources has been well acknowledged and advocated for more equitable decision-making (Bunse et al, 2015)
- **Poor resources and infrastructure-** Ensuring that multiple activities within a landscape can co-exist harmoniously. requires investing in analysing existing land use information, its impacts on forests and vice versa, develop participatory spatial maps based on community and multistakeholder consultations, developing adaptive management plans and monitoring and review systems. This requires substantial financial and diversely skilled human resources and infrastructure (UNU-IAS and IGES, 2023).
- **Rural migration-**The success of multistakeholder initiatives like FLR require the full participation of proximate stakeholders such as local communities. With rising poverty and income disparity, many community members are moving away from such landscapes creating severe human resource challenges to implement and maintain such approaches. Incentivizing their production activities through assured markets, alternate value-added livelihood activities and enhancing sense of place are some strategies being adopted in different contexts. (see for instance UNU-IAS and IGES, 2017)

FLR and socio-ecological resilience

Socio-ecological systems approach is a broader concept that encompasses concepts like landscape approaches (including Forest landscapes) that acknowledges the complex interdependencies of people and nature. Improving one at the cost of other cannot be sustained over long term and ultimately has adverse consequences for both (Sayer *et al*, 2013). This calls for taking into account multiple uses and multiple functions of ecosystems managed by multiple users with multiple priorities. Both social and ecological systems are prone to vulnerabilities and ensuring that robust coping mechanisms are put in place is an important goal of Landscape approaches, to ensure socio-ecological resilience. Several points of related interventions are needed to achieve socio-ecological resilience. This ranges from engagement and consultations with diverse stakeholders in a landscape, mapping and taking stock of resources and ecosystem integrity, co-designing management plans and land/ seascape use decisions that factor in the specificities within a socio-ecological context (culture, economy, demography, gender, natural assets, etc) and thereby minimize negative trade-offs between different types of decisions (Mansourian et al, 2020; Sayer et al, ibid; UNU-IAS and IGES, 2023) . The FLR principles also follow the same line of thinking and a well-designed and implemented project therefore seeks to ensure a resilient forest landscape. Given the close alignment of the principles of FLR with socio-ecological resilience, we could examine if the projects are on track to be resilient. This is because most projects are being implemented and it would take a couple of years to determine if they are in a position to recover from or mitigate natural and economic vulnerabilities. Still, some early trends are obvious – such as the high emphasis on involving multiple stakeholders to build consensus on sustainable practices in the landscape; emphasizing on multiple benefits (such as for instance mangrove species diversity, shoreline protection, livelihood security and livelihood diversity, value addition from farming, and income from restoration related activities in addition to fostering cultural values); and adapting the principles to local contexts and specific priorities of project sites. This is a key principle that is noteworthy- that all project sites have not taken a one size fits all approach, but are adapting their core project objective of forest restoration and conservation of species to the socio-political and ecological contexts of landscapes. Furthermore, engagement of communities and multiple sectoral agencies in jointly monitoring the progress of the projects should help build trust and more active deliberations towards desired objectives.

A group of women work in the Women of El Piñonal Nursery in Veracruz, Mexico. Photo: Gerardo Sánchez Vigil

Table 2 : Challenges encountered across the projects to implement FLR (as reported by the Projects)

Challenges identified	IND-B	PNG	IND-C	IND-CBR	GHA	FJI	TGO-CF	PER	IND-FW	BRA	CRA	IND-GSK	MKG	TGO-BL
Poverty	X	X	X		X	X	X	X			X		X	X
Poor enforcement	X					X						X		
Lack of capacity and awareness, information	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Poor resources, infrastructure	X	X							X					
Disputes between stakeholders				X		X						X	X	
Rural migration linked to poverty on site					X									X

An assessment of how well the projects were able to incorporate the principles of FLR was done, based on their project reports (see Table 3). The Table also highlights if attempts to incorporate gender aspects were made in the projects, and if so, the extent to which it was engaging and effective. This is in line with the commitment of ITTO that gender issues need to be mainstreamed across all its projects, activities and reports. The main criteria used for this assessment again was if the project reports reported deep engagement with women to raise awareness and build their agency in relevant activities of FLR.

Table 3: Incorporation of FLR principles in the projects (assessment based on Project Reports) X-Low; XX-medium; XXX-high

Principle	IND-B	PNG	IND-C	IND-CBR	GHA	FJI	TGO-CF	PER	IND-FW	BRA	CRA	IND-GSK	MKG	TGO-BL
Focus on landscapes	X	X	X	XXX	XXX	XXX	XX	XXX	XXX	XXX	XX	XX	XXX	XXX
Engage SH and Participatory governance	XXX	XX	XX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Restore multiple functions for multiple benefits	XXX	XXX	X	XXX	XXX	XXX	XX	XXX	XX	XX	XX	XX	XX	XXX
Maintain and enhance natural forest ecosystems within landscapes	XXX	XX	X	XXX	XXX	XXX	XXX	XXX	XXX	XX	XX	XXX	XX	XXX
Tailor to the local context using variety of approaches	XX	XX	X	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XX	XXX	XXX	XXX
Manage adaptively for long-term resilience	XX	XX	XX	XXX	XXX	XXX	XXX	XXX	XXX	XX	XX	XX	XXX	XX
Gender priorities					XX	XXX	XXX	XXX			X	X		XXX

Margarita Loel, a member of the board of Sacalá, a growing small forest enterprise in Guatemala that benefited from an ITTO project. Photo: R. Carrillo/ITTO

From the analysis, a couple of points are noteworthy:

- Almost all projects have attempted to have a broader landscape approach in their project framing, design and implementation. Some projects have undertaken only in model scales or are looking to afforest grasslands, the consequences of which are unclear. Most project proponents are from the forestry sector, and it is notable that they have acknowledged that forest restoration is dependent on activities in the wider landscape or seascape. Spillover effects from production activities including use of agrochemicals, types of land use and related conversions and impacts on the forest species and conversely the impact of forestry activities on the wellbeing of populations and ecosystem integrity around is well factored into the project. There is sufficient evidence that points to the merits and advantages of undertaking such integrated landscape approaches to advance sustainable use and conservation of resources, ecosystems and further equity among actors who interact within the system (Sayer et al, 2013; Mansourian et al, 2020; Nishi and Subramanian, 2023)

- All projects expressly state that participatory and inclusive approaches to include perspectives of local communities and their wellbeing are essential to ensure successful implementation of forest restoration. Depending on the core issues to be addressed, and access to communities, implementing agencies also establish partnerships with various other agencies from different sectors and interest groups. Community consultations through focus group discussions, consultation meetings, meetings involving youth and women have been explored, depending on what works in different contexts. The reports suggest that this has helped to do a better assessment of native species assessments and conservation activities, enhance community ownership over forest resources and deter from practices that degrade and overexploit (sometimes, illegally) resources, adopt better forest management practices, and further identify livelihood activities that augments income of the communities, as identified by them. This sense of agency that different stakeholders, especially the marginalized communities get is considered instrumental in ensuring a more equitable and fair decision-making process (IPBES, 2022 *ibid*). Ignoring community motivations could severely impair achieving FLR objectives (see for instance Hohl et al, 2020)

- Almost all projects seek to maintain and restore multiple ecosystem functions for multiple benefits. This includes natural functions such as regulatory and supporting (water regulation, soil fertility and erosion decrease) and socio-cultural functions (including food-energy-health-materials security, livelihoods, cultural aspects relating to landscapes (e.g., respecting knowledge and practices like taboos and others linked to conservation and sustainable use practices). This is linked to the above point on integrating multiple values of diverse stakeholders that allows designing land-use related decisions that take cognizance of the diverse benefits from the landscape. Several recent global assessments (IPBES, 2019; 2022) have been emphasizing the need to adopt plural approaches in the design interventions related to nature to ensure better adoption of the principles of sustainability across multiple actors.

- All projects are targeted towards forest restoration practices. Even while they may be specific to conserving certain species (such as Teak or Cempaka), they emphasize the need to maintain native species for higher restoration outcomes. Furthermore, given the FLR principles, they extend this concept of native germplasm maintenance to other practices followed by local communities, such as agriculture, fishing etc. Not all projects exhibit similar degrees of intent in this regard, but it is still a core component of all their works.

- All projects have endeavoured to tailor their interventions such that they are acceptable and adoptable to local contexts. This is evident from the wider set of consultations with different stakeholder groups across administrative bodies, community groups and business interests. The project of the Greater Mekong Sub region is a case in point. It involves 5 countries, each having its own laws and socio-cultural contexts, but the project objectives were implemented successfully respecting each context.

- Several of the projects actively pursued the principle of adaptive management. recognizing that contexts and preferences might change in the future and a dynamic process that allows assessing, review and 'course correction' depending on emerging situations is required.

- Related to the above point, most projects started to address resource supply constraints in forestry, and further, capacity and resources requirements for communities and different stakeholders towards this. All related activities from afforestation and development of appropriate techniques and tools, getting the buy in of different stakeholders and developing value added products to ensure sustainable use are linked to this priority of the project initiators. It is noteworthy that some earnest attempts are being made recognizing that this objective can be fulfilled only by fulfilling the wellbeing priorities of other stakeholders. This brings out starkly the different types of trade-offs that arise between different activities (say for instance, tourism, usage of wood for fuel, intensive agricultural practices, non-wood extraction) and how to manage between these various uses such that both human needs can be met and conservation priorities are not compromised. This resonates closely with previous project implementation findings (Thomson and Blaser, 2021)

These experiences of the different case studies provide us with some key pointers to keep in mind while designing comprehensive, integrated restoration practices such as FLR. The most critical elements are highlighted below.

Gender mainstreaming: As mentioned earlier, ITTO has a robust gender mainstreaming and women empowerment policy (ITTO, 2018 *ibid).* This is a goal high on the agenda of international policy forums including the recent Global Biodiversity Framework of the Convention on Biological Diversity (Target 23) and of course, within the Sustainable Development Goals (Goal 5). The importance of women in environmental management, biodiversity conservation, and the need to enhance their agency for better control of their economies cannot be overemphasized (see for instance OECD, 2021). Of the 14 cases analyzed, only 4 show a deeper level of commitment to include gender sensitive aspects in their implementation plans- these include having training sessions on activities that women can directly involve in such as tree nursery development, identifying value added products to be developed and further also be involved in monitoring activities related to FLR. The project from Togo in fact specifies the need to include women as active stakeholders during the entire activity period and chain of decisions. Three others show low to medium levels of activities implying some efforts being made for inclusion of gender aspects such as women mandatorily being part of community consultations. This is an area that requires further careful thought in the future that projects could be obligated to include gender aspects in their project designs and implementation plans and further, in their reporting. This aligns with findings in other studies that identify inadequate attention to gender roles and governance capacities as hampering the realization of the objectives of FLR (see for instance Chazdon et al, 2021; Mansourian et al, 2020)

Crucial elements to consider while designing FLR

- **Education and awareness raising on FLR- related practices:** This implies developing a variety of tools to help different types of actors – from implementing agencies in the forestry sector and other sectors who need to be involved to ensure effective restoration; for local communities and specific interest groups within them (e.g., women, youth, marginalized groups) who need to embrace good and sustainable harvesting and production practices; training materials to avoid forest degradation practices. This includes capacity development interventions to all stakeholders on aspects that are important for them to understand, motivate and implement FLR activities in their contexts (IPBES, 2022)

- **Community level consultations:** The success of implementing sustainability-aligned activities across the forest landscape depends on the buy-in of local communities who are engaged in diverse activities within and outside the forest area. Actively engaging communities is necessary to understand their perspectives and motivations that will trigger sustainable use and management of landscape. This would require extensive consultations with the different communities within the landscape and furthermore, special groups within them. As seen in many of the examples, engagement with women and youth is believed to have brought more benefits through more active involvement in specific activities (for example,, women were more involved in seedling selection and development for forest tree species and in value-added products; while youth were active in restoration activities) in a sustained manner.

Forest researcher Adi Estela Lazos Ruíz speaks at a forest restoration workshop in Jamapa, Mexico. Photo: Gerardo Sanchez Vigil

- **Consensus building across stakeholders** is required to get their co-operation and support in undertaking FLR. The complexity of addressing socio-ecological systems is not fully entrenched in mainstream planning exercises, and hence sufficient pre-design consultations and awareness and training programs will be needed to ensure everyone fully adopts the concept (UNU-IAS and IGES, 2023; IPBES, 2022). Investing in co-learning approaches, peer learning exchanges and social learning can be explored to build trust, confidence and collaborative attitude between the stakeholders. A safe space to air grievances and deliberate on potential solutions should be built in to the design.

- Id**entify socio-ecological resilience and wellbeing issues.** Highlight in the process easy and harder to achieve opportunities (e.g., integration of different knowledge systems, expertise and knowledge of characteristics of land, species, etc), familiarity between actors, sense of place and cultural values. Furthermore, identify to what extent can we assure the activities will be self-sustaining

- **Support development of alternative economic activities or value addition to existing ones:** this will complement efforts to reduce degradation and overexploitation pressures on the forest landscapes, as in addition to providing better income streams to communities, it also reduces the likelihood of unsustainable land-use practices. (UNU-IAS and IGES, 2017)

Balinese women prepare and weave strips of bamboo to make culturally important products for domestic use and export. Photo: FOERDIA

- **Establish Joint monitoring and assessment teams** involving different stakeholders to ensure that responsibilities are distributed and there is a greater sense of agency to different non-state actors to conserve and sustainably use their landscape and resources. (UNU-IAS and IGES, 2023)

The *ITTO Community Forest Management Project is helping the Ainbul Community in West New Britain Province, Papua New Guinea, to manage their Land Use Plan for 23,000 hectares of customary land using participatory data collection technology. The land-use s*

- **Set up reward, recognition and incentive Systems** for good practices by different stakeholders in the landscape (for instance such a system was set up in the Indonesia Sumatra project with promising results)

- **Equity and Justice** – an underlining element essential to the successful implementation of FLR is the establishment of trust across the different stakeholder groups- especially the less powerful groups including indigenous peoples and local communities and special groups within them (women, youth, others). Ensuring equitable access to necessary resources, opportunities and distribution of benefits and co-designed interventions go a long way towards achieving the goals of FLR (e.g. in Peru, the project clearly spells the objective of advancing equal opportunities for women and men as they are equal partners of the solution)

Recommendations for Research and Policy

Promote Transdisciplinary research and practice – this involves solutions focused research and implementation where in addition to working with different specializations, solutions are determined by working alongside local communities, citizens and other non-state actors. This allows more transparent analysis of issues, more robust prioritization of interventions and land uses and importantly, more effective outcomes.

ITTO Fellow Thais Almeida Lima gathers information in a felling gap in a licensed SFM unit, Amazonas, Brazil. Photo: R.S. de Andrade/IPAAM

Encourage multistakeholder discussions on socio-ecological resilience – addressing social and ecological issues as a system helps to see their interconnectedness better, identify potential trade-offs that arise from interventions for human welfare or for environment and thereby enhance coping, adaptation and mitigation strategies to different kinds of social and environmental vulnerabilities (e.g., having more livelihood options, enhancing diversity of natural resources and ecosystem complexity, creating natural barriers to events such as floods, fires, erosion, etc)

Embed FLR principles in all forestry related policies – the FLR principles speak directly to enhancing socio-ecological resilience in a participatory and inclusive manner. Targets 1,2 and 3 of the KMGBF require addressing conservation on a spatial scale, mindful of ecological connectivity and of social priorities. Current biodiversity and environmental goals can be achieved only by encouraging that areas beyond protected areas that includes managed landscapes and seascapes also engage in sustainable practices of production, use and consumption. In the case of the forestry sector, the FLR principles provide a good tool to advance this agenda.

Design and implement appropriate capacity development programs for policymakers, NGOs, academia and civil society including indigenous peoples and local communities – include in forest training programs, outreach and awareness raising activities. It is important to recognize that given the dynamic nature of the socio-ecological systems, ensuring they are resilient requires all parts of government and society in a context to be engaged. However, this raises the challenge of integrating and raising the awareness of different stakeholders on knowledge and expertise on processes, tools and approaches that is often dispersed among them. Co-learning, peer exchanges, social learning tools are some methods, in addition to traditional capacity building efforts, that can be explored in this context.

Women-led mahogany nursery in the Yucatan Peninsula, Mexico. Photo: INIFAP

Ensure principles of equity are incorporated in policy plans and programs, that includes empowerment of women, and gender sensitive policy development -requires participatory planning and implementation approaches. This is still not sufficiently addressed in the projects, although attempts are being made. Inclusion of gender related activities in project plans, implementation activities, monitoring teams and in reporting could help embed this dimension more effectively.

Conclusions

The concept of Forest Landscape Restoration is in many ways idealistic, and embraces the complexity involved in governing and managing land use priorities within a landscape. While conventionally, forest managers were responsible to manage forests, there is widespread acknowledgement that activities outside forestry influence the quality and integrity of forests ecosystems. Restoration of forests therefore cannot be successful if those drivers – socio-economic, political, cultural and natural are not addressed together. This requires co-ordinating and consequently, collaborating with different agencies responsible for different sectors (viz., agriculture, rural development, environment, infrastructure development) and with different stakeholders operating in the landscape (viz., local communities, businesses, academia, policymakers) in order to design appropriate interventions that enhance ecological integrity and societal wellbeing.

However, implementing such an approach is challenging as it requires gaining the trust of different stakeholders to work collaboratively, of identifying and getting the buy-in of different sectors to work together. Issues of poverty, disputes between stakeholders regarding tenure and land uses, and lack of information, awareness and capacities to undertake such an integrated approach need to be addressed systemically to ensure effective implementation of FLR. That being said, integrated approaches have been practised around the world in various contexts, and practical guidance to adapt approaches that work in different contexts are also widely available. Such experiences focus on deliberating across different perspectives, leveraging on areas of synergies, prioritizing between different imperatives focusing on long term sustainability of the resilience of the socio-ecological system. The principles of the FLR aim to achieve this goal of socio-ecological resilience. The IPBES Values Assessment noted that different stakeholders can advance transformative changes towards sustainability within their spheres of influence. It is noteworthy that ITTO is nudging their members in this direction through promotion of FLR practices. ITTO is also actively promoting gender equality. While incorporation of gender equality in the ITTO projects is still to gather traction, there are signals that this is beginning to be gradually mainstreamed. However, it would require more investments in awareness raising and obligatory reporting on progress on a specific indicator on gender inclusiveness and equality to ensure that it goes beyond tokenism and is fully integrated in practice. That said, these experiences offer a good illustration to landscape planners and decision makers of lessons that can be incorporated and adapted into similar contexts.

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