Policy Report

Advancing Forest Landscape Restoration in the Tropics:

Experiences and Lessons for Socio-Ecological Resilience and Empowerment of Women in ITTO Projects

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Recommended Citation

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Foreword

The loss of biodiversity and of the integrity of ecosystems is increasingly prompting countries to rethink development strategies — seeking better alignment with sustainability principles and, more broadly, in harmony with nature. There is clear acknowledgment that sectoral interventions are insufficient to arrest the decline of nature, and that increased collaboration and joint implementation are necessary for success. Overlaying this challenge is climate change, the effects of which are exacerbated by large-scale degradation of ecosystems. The United Nations General Assembly has declared the Decade for Ecosystem Restoration (2021–2030) to accelerate synergized efforts to recover degraded ecosystems and revitalize others. It seeks to further plan and design use of land and sea in a manner that strengthens socio-ecological resilience.

In this context, restoring forest ecosystems is vital. It is encouraging that the concept has broadened to include an integrated landscape approach that focuses on ensuring sustainable use, conservation, and equity across the landscape, including forest ecosystems. In partnership with many organisations, the International Tropical Timber Organization (ITTO) has actively promoted Forest Landscape Restoration (FLR). This emphasizes the need to address the well-being and motivations of all actors in a landscape, and manage multiple uses to minimize adverse trade-offs. It should build on any potential synergies in overlapping interests such as livelihoods based on forest products and associated cultural values.

The United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS) has been promoting integrated landscape and seascape use and management for over a decade. Evidence of the benefits of such landscape approaches in communities across the globe is used to inform policy and advance the international biodiversity agenda. Linking local priorities with policy goals through research and analysis has helped to clarify the gaps and challenges that persist in socio-ecological systems and how they can be addressed.

This publication reflects the engagement and expertise of ITTO and UNU-IAS in advancing FLR, presenting empirical experiences from ITTO projects. It also spotlights the gaps that need to be addressed to integrate gender concerns and provide more agency to women as core partners in activities. We are pleased with the results of this collaboration and hope that the lessons identified will be informative for practitioners and policymakers involved in decisions related to forest ecosystem restoration. We believe that this report will be a useful contribution to ongoing and future efforts on crucial policy agendas in this sphere, including the Kunming–Montreal Global Biodiversity Framework, the SDGs, and the UN Decade on Ecosystem Restoration.

Photo: Y. Kamijo / ITTO

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Summary

Landscape restoration is focused on rejuvenating the ecological integrity of a landscape to benefit both its human and natural components economically, environmentally and socially. As an integrated strategy, it 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 spun from natural events, 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 and stakeholders in a landscape regarding multiple use priorities of the land and resources. It is also an exercise in identifying which ones could lead to sustainable outcomes and lower trade-offs.

Cibodas Biosphere Reserve, Indonesia: Management concept that balances conservation and development.
Photo: Anggia Ananda

Following this concept, Forest Landscape Restoration (FLR) represents an ongoing process aimed at restoring 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, are fully involved in the design and implementation of FLR related activities. This affirms that everyone in the landscape is engaged in practices aligned with sustainability that would minimise the risks of negative trade-offs and conflicts over potential land uses.

The International Tropical Timber Organization (ITTO) offers guidance on the principles of FLR, which were developed by the Global Partnership on Forest and Landscape Restoration (GPFLR). These six principles are: *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.* Using these principles, ITTO has been fostering FLR by supporting the implementation of FLR projects in different countries.

This report analyses project completion reports of 14 ITTO-funded projects across the tropics in Asia-Pacific, Africa and South America to draw lessons on the effectiveness of FLR towards achieving socio-ecological resilience and the challenges encountered in its design and implementation. This report also examines how well gender considerations are included in project activities.

Based on the reports of the projects (case studies), an assessment was conducted against the six FLR principles focusing on project design, implementation and outcomes. This revealed broad trends and gaps in FLR implementation. The main implementing agencies for these case studies were primarily forestry related institutions. Their primary interest was to conserve forest species and native germplasm, and maintain or enhance forest ecosystem integrity within the broader principle of forest restoration. Most projects 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, they placed emphasis on stakeholder consultations, training for 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.

Several common challenges across the case studies were identified as requiring attention in order to ensure successful FLR implementation. These 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 the consequent lack of trust between stakeholders in the landscape calling for 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.

Consultative and deliberative processes are essential to address these challenges and ensure that the intricate interdependencies between people and nature are adequately considered in the design of FLR interventions. This approach supports the broader pursuit of achieving socio-ecological resilience, which requires engagement and consultations with a diverse array of stakeholders in a given landscape. It involves mapping and assessing both 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), thereby minimising negative trade-offs between different types of decisions.

The analysis also pinpointed several critical areas that require attention to make FLR interventions effective. These include investments in education and awareness-raising on FLR related practices across stakeholder groups and meaningful community-level consultations to co-design interventions. Building trust and consensus among stakeholders is vital, as is identifying the issues that impact socio-ecological resilience and wellbeing in various operational contexts. Other areas of focus are the identification and support of alternative economic activities; establishment of joint monitoring and assessment teams involving both state and non-state actors; and the creation of a

reward and incentive system to encourage the execution and practice of FLR concepts. Additionally, it is crucial to ensure a stronger representation of marginalised groups, especially women and youth, to not only address their priorities but also ensure that the FLR process is equitable and just. Although many projects make it a point to engage youth, the meaningful inclusion of women still requires greater attention.

For a research and policy standpoint, the findings advocate for the promotion of transdisciplinary approaches and encourage multi-stakeholder discussions on socio-ecological resilience. Embedding FLR principles in all forestry-related implementation policies is recommended together with the design and implementation of appropriate capacity development programmes. These could be facilitated through innovative mechanisms like peer learning exchanges and social learning tools. Lastly, it is essential that principles of equity, including gender-sensitive plans, are deeply entrenched in policy plans and programmes.

Introduction:
Landscape Restoration and Forest Landscape Restoration

Landscape restoration aims to restore and enhance the ecological integrity of a landscape while benefiting people's livelihoods and wellbeing across economic, environmental and social dimensions. This integrated approach seeks to holistically address land degradation issues and establish clear connections between the underlying and direct drivers affecting the state of the landscape (Sabogal et al, 2015; UNEP and FAO, 2022).

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

These drivers can be natural, but several are linked to political, economic and socio-cultural decisions made by various actors operating within the landscape (Nishi and Subramanian, 2023). Therefore, landscape restoration serves as a means to deliberate between the different actors and stakeholders regarding the multiple use priorities of the land and resources and, furthermore, to identify which ones could lead to sustainable outcomes while minimising trade-offs.

Forest Landscape Restoration (FLR) is an ongoing process aimed at regaining ecological functionality while enhancing human wellbeing across degraded and deforested forest landscapes. Three key elements are central to this: participation, adaptive management and a consistent monitoring framework (ITTO, 2020; IUCN et al, 2023). These elements are crucial for the sustainability of restoration activities as it clearly identifies that socio-cultural-environmental contexts could change and that this requires an adaptive approach. Further, it also ensures a deeper sense of ownership across all actors—from local communities to big businesses and companies that operate in the landscape.

The International Tropical Timber Organization (ITTO) offers guidance on implementing FLR principles, developed by the Global Partnership on Forest and Landscape Restoration (GPFLR) (ITTO, *ibid*). This includes six principles with associated guiding elements that span multiple dimensions—economic, ecological and social.

These principles are:

Principle 1

Focus on Landscapes – FLR should extend its focus beyond individual sites to encompass entire landscapes. This would include non-forested areas as well, considering a variety of existing interacting land uses and tenure and governance arrangements in the landscape.

Principle 2

Engage Stakeholders and Support Participatory Governance – Active engagement with a diverse range of stakeholders is essential. This includes women as well as young and vulnerable groups, involving them throughout the entire planning and decision-making 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 – This principle emphasises the dual importance of ecological and social connectivity. It advocates for the restoration of dynamic forest processes which include elements such as species composition, structural diversity, productivity and biodiversity. Additionally, it stresses the significance of pollination and the genetic diversity of both flora and fauna. FLR interventions are expected to restore the productivity, ecosystem functionalities and carbon storage capacities of degraded tropical forests.

Principle 5

Tailor to the Local Context Using a Variety of Approaches – FLR planning and implementation should be responsive to the specific needs of local communities and ecosystems. Comprehensive involvement of local stakeholders in the development, implementation, monitoring, and assessment of various interventions ensures that FLR initiatives are well-adapted to local contexts.

Principle 6

Manage Adaptively for Long-term Resilience – This captures the long-term sustainability of FLR activities, which 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 align with other guidance on FLR advocated by organisations such as the FAO through their 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. This report specifically analyses 14 case studies backed by ITTO to scrutinise how successful the implementation of FLR has been. It also delves into the socio-ecological benefits accrued from these endeavours and examines the degree to which women's priorities have been incorporated into planning and implementation. The latter is a focus that, despite its significance in the international policy agenda, is often insufficiently addressed.

Case study analysis of 14 ITTO-funded projects was undertaken and synthesised with literature reviews on experiences relating to FLR in other contexts. The projects were assessed for each of the six principles of FLR and juxtaposed with similar landscape restoration efforts. This approach aims to identify common challenges in advancing such an integrated approach, factors for successful implementation and in particular, implications for women. Gender inclusive interventions have become an important implementation agenda, as highlighted by Target 23 of the Kunming-Montreal Global Biodiversity Framework (KMGBF) among other policy guidelines. ITTO has a clear stance on gender inclusivity, as outlined in their 2022 vision (ITTO, 2022). While FLR activities are expected to address the concerns of all stakeholders, the extent to which women's perspectives and agency are actually integrated is a subject that warrants closer examination. This is to ensure betterment of future project designs but more importantly, incorporating relevant indicators in the monitoring, assessment and review of projects ensures that gender issues are well embedded in project design and implementation.
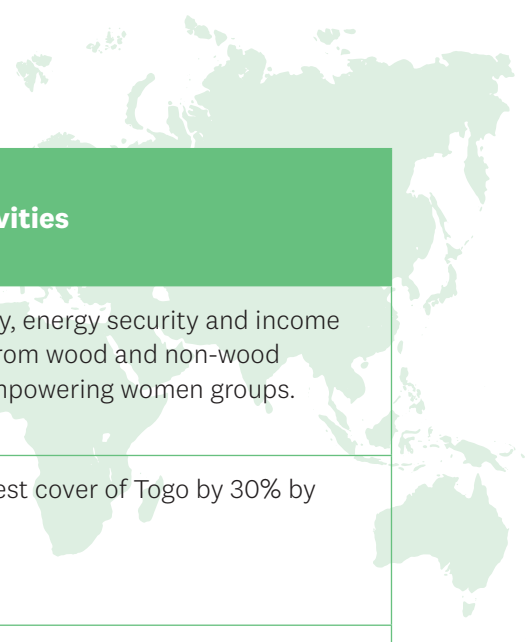
Methodology, Analysis and Synthesis

The 14 case studies were assessed based on their Project Completion Reports against the six 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 with regards to FLR. The analysis behind the findings in this report is therefore a post-facto assessment, with the intention of identifying broad trends in compliance with FLR principles and gaps 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 (abbreviated site code)	Focus activities
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.
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.
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.

Project title / Area	Country (abbreviated site code)	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.
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.
Capacity building on forest and land fire management in Indonesia	**Indonesia (IND-FM)**	Participatory approaches to prevent forest fires engaging multiple stakeholders.
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.
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.
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.

Project title / Area	Country (abbreviated site code)	Focus activities
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.
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.
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.

Operationalising FLR

In the different countries and contexts covered by the case studies, it is evident that FLR approaches are being adopted to address specific issues in the landscape. This often necessitates collaboration between different stakeholders, with the buy-in of the local community being critical. These include, for instance, ensuring conservation of native forest species in the Greater Mekong and Indonesia projects, preventing forest fires in Indonesia-Sumatra and Kalimantan, preventing the loss of important ecosystem services viz. shoreline protection in Fiji, water regulation, soil fertility, and more.

Sustainable production and conservation through forest management planning with Brazil's Instituto Floresta Tropical, Acre, Brazil. Photo: ITTO project PP-A/47-266

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 at ensuring the sustainability of the project by creating more awareness among the next generation and motivating 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 operationalisation. A narrative analysis of the project reports highlighted some critical challenges that need to be addressed for effective FLR programme implementation.

The most important challenges include:

- **Poverty**
  This has been recognised across multiple case studies as a primary reason that pushes local communities dwelling within, in transit and within buffer zones of forests to engage in over-exploitation and illegal extraction of wood and non-wood forest resources. Addressing poverty by leveraging 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 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 featured in the case studies have robust laws to regulate over-exploitation, strengthen forest conservation and protect against environmental degradation, the real challenge lies in effective implementation. However, often, the mechanisms of implementation fall short of achieving these goals. Inter-agency consultations, especially working in collaboration to synergise efforts and resources, is identified as a necessary condition in several of the case studies. This has also been well acknowledged in global assessments on implementation of environmental laws (see for instance UNEP, 2019).

- **Inadequate FLR Capacities, Skills and Awareness**
  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 stakeholders, from policymakers to local communities. Strong efforts to develop the 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 Among Stakeholders**
  Unresolved disputes, often concerning land ownership, jurisdictional boundaries or benefit distribution between local communities and other stakeholders, can make it hard for them to engage in FLR activities. 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 the analysis of existing land use information, its impacts on forests and vice versa, developing participatory spatial maps based on community and multistakeholder consultations, creating 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. This is creating severe human resource challenges to implement and maintain such approaches. Incentivising their production activities through assured markets, alternate value-added livelihood activities and enhancing a sense of place are some strategies being adopted in different contexts (see for instance UNU-IAS and IGES, 2017).

FLR and Socio-Ecological Resilience

The socio-ecological systems approach is a broader concept that encompasses landscape approaches, including forest landscapes, that acknowledges the complex interdependencies of people and nature. Improving one at the cost of other is not sustainable in the long term and will ultimately have adverse consequences for both (Sayer et al, 2013). This necessitates considering the varied uses and functions of ecosystems managed by multiple users with multiple priorities. Given that both social and ecological systems are susceptible to vulnerabilities, establishing robust coping mechanisms is a crucial objective of landscape approaches in order to ensure socio-ecological resilience.

To build resilience against socio-ecological vulnerabilities, multi-layered interventions are needed. Strategies range from engaging and consulting with diverse stakeholders to mapping and taking stock of resources and ecosystem integrity. These consultations and assessments lead to co-designed management plans that can guide land and seascape utilisation while taking into account the intricate nuances of socio-ecological contexts such as cultural norms, economic conditions, demographic factors, gender considerations and natural assets. Consequently, these plans aim to mitigate adverse trade-offs among various types of decisions (Mansourian et al, 2020; Sayer et al, ibid; UNU-IAS and IGES, 2023).

Farmers in North Sulawesi, Indonesia, receive training on nursery management as part of efforts under an ITTO project to revitalize cempaka-growing in the province. Photo: Muh. Farid / MEFRDI

FLR principles 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 FLR principles 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 – the high emphasis on involving multiple stakeholders to build consensus on sustainable practices in the landscape; the importance of multiple benefits, such as 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 the adaption of the principles to local contexts and specific priorities of project sites.

This is a key principle that is noteworthy—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, the engagement of communities and multiple sectoral agencies in jointly monitoring the progress of the projects should help build trust and foster more active deliberations towards desired objectives.

Table 2: Challenges encountered across the projects in FLR implementation as reported by the projects

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

An assessment of how well the projects were able to incorporate FLR principles was done based on their project reports (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 ITTO's commitment to make gender issues mainstream across all its projects, activities and reports. The main criteria used in this assessment was whether the project reports revealed deep engagement with women to raise awareness and build their agency in relevant FLR activities.

Table 3: Incorporation of FLR principles in the projects (assessment based on project reports) ✕ - Low; ✕✕ - medium; ✕✕✕ - high

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

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 the 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 projects. Sufficient evidence 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).

🌱 *The Nasilai women's group planted 5000 mangrove propagules along the foreshores of their village as part of the ITTO project.* Photo: Aporosa Ramulo Livani, Ministry of Forestry

- All projects expressly state that participatory and inclusive approaches that embrace the perspectives of local communities and their wellbeing are essential to ensure the successful implementation of forest restoration. Depending on the core issues to be addressed and access to communities, implementing agencies also established partnerships with various other agencies from different sectors and interest groups. Community consultations through focus group discussions, consultation meetings, and meetings involving youth and women have been explored, depending on what works in different contexts. The reports suggest that this has helped to achieve 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 marginalised communities, get is considered instrumental in ensuring a more equitable and fair decision-making process (IPBES, 2022 ibid). Ignoring community motivations could severely impair FLR outcomes (see for instance Hohl et al, 2020).

- Nearly every project aims 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) as well as socio-cultural functions (including food-energy-health-materials security, livelihoods, cultural aspects relating to landscapes such as 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 cognisance of the diverse benefits from the landscape. Several recent global assessments (IPBES, 2019; 2022) have been emphasising 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 aim to implement forest restoration practices. While some may specifically aim to conserve certain species like Teak or Cempaka, there is an unified emphasis on preserving native species to achieve better restoration outcomes. Furthermore, given FLR principles, they extend this concept of native germplasm maintenance to other practices followed by local communities, such as agriculture and fishing. Not all projects exhibit similar degrees of intent in this regard, but it is still a core component of all their work.

- All projects have made the effort 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 five countries, each with its own laws and socio-cultural contexts, but the project objectives were implemented successfully respecting each context.

- Several projects actively pursued the principle of adaptive management, recognising 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, the capacity and resources requirements for communities and different stakeholders towards this. All related activities—from afforestation and development of appropriate techniques and tools, to securing 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, recognising that this objective can be achieved only by fulfilling the wellbeing priorities of other stakeholders. This brings out, starkly, the different types of trade-offs that arise from different activities (for example, tourism, usage of wood for fuel, intensive agricultural practices, non-wood extraction) and how projects need to manage these various uses in a way that meets human needs without compromising conservation priorities. This resonates closely with previous project implementation findings (Thomson and Blaser, 2021).

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

Gender Mainstreaming

As previously noted, ITTO has a comprehensive policy for gender mainstreaming and women empowerment (ITTO, 2018 ibid). This aligns with international policy agendas including the recent Global Biodiversity Framework of the Convention on Biological Diversity (Target 23) and 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 overemphasised (see for instance OECD, 2021).

In a close examination of the 14 cases, only four demonstrate a deeper commitment to integrating gender-sensitive aspects into their project implementation. These efforts include offering training sessions on activities that women can be directly involved in, such as tree nursery development, identifying value added products to be developed, and involving them in monitoring activities related to FLR. In fact, the project from Togo 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. This implies some efforts are being made for the inclusion of gender aspects such as mandating that women are part of community consultations. This is an area that requires further careful thought. In the future, projects could be obligated to include gender aspects in their project designs and implementation plans and, further, in their reporting. This aligns with findings from other studies that identify inadequate attention to gender roles and governance capacities as hampering the realisation of FLR objectives (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 suggests the need to develop a variety of tools to help different types of stakeholders involved in FLR. This includes implementing agencies in the forestry sector and other sectors who need to be involved to ensure effective restoration as well as local communities and specific interest groups within them, such as women, youth, and marginalised groups, who need to embrace good and sustainable harvesting and production practices. Training materials to avoid forest degradation practices and capacity development interventions for all stakeholders on aspects that are important for them to understand, motivate and implement FLR activities in their contexts are important (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 a diverse set of activities both within and outside the forest landscape. Actively engaging communities is necessary to understand their perspectives and motivations that will trigger sustainable use and management of landscape. This involves extensive consultations, including focus group discussions and meetings involving specific groups within them. As seen in many of the examples, engagement with women and youth is believed to have brought 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.

Support for women's groups with the restoration of forest landscapes in the Prefectures of Blitta and Lacs, Togo. Photo: Cozi Adom Esso-Wazina

- **Consensus Building across Stakeholders:** This is required to get their full support and cooperation 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 programmes will be needed to ensure everyone fully adopts the concept (UNU-IAS and IGES, 2023; IPBES, 2022). Co-learning approaches, peer learning exchanges and social learning can be explored to build trust, confidence and collaborative attitude between the stakeholders. The creation of a safe space to air grievances and deliberate on potential solutions should be built into the design.

- **Identifying Socio-Ecological Resilience and Wellbeing Issues:** We can highlight the easier and harder-to-achieve opportunities in the process, for example, the integration of different knowledge systems, expertise and knowledge of characteristics of land, species, etc, as well as the familiarity between actors, sense of place and cultural values. It can also be helpful to identify to what extent can we ensure that the activities will be self-sustaining.

- **Support for Alternative or Value-Addition Economic Activities:** This will complement efforts to reduce degradation and overexploitation pressures on the forest landscapes because, 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

Land-use planning & monitoring: 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 survey forms are assisting the community to record land-use arrangements, development priorities and forest management practices, and the socio-economic monitoring forms are helping landowners to understand how their income generation activities are contributing towards their land-use objectives. Photo: D. Kenny

- **Joint Monitoring and Assessment Teams:** Comprising different stakeholders, these teams can be designed to distribute responsibilities and encourage a greater sense of agency among non-state actors to conserve and sustainably use their landscape and resources (UNU-IAS and IGES, 2023).

- **Reward, Recognition and Incentive Systems:** These can be set up to acknowledge and encourage good practices by different stakeholders in the landscape. For instance, such a system has been successfully implemented in the Indonesia Sumatra project with promising results.

- **Equity and Justice:** An underlying element essential to successful FLR implementation is the establishment of trust across different stakeholder groups, especially among less powerful ones such as indigenous people, 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 can go a long way towards achieving the goals of FLR. In Peru, for example, the project clearly spells out an objective of advancing equal opportunities for women and men as equitable partners in 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 specialisations, solutions are determined by working alongside local communities, citizens and other non-state actors. This allows for a more transparent analysis of issues, more robust prioritisation 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 surface their interconnectedness, identify potential trade-offs that may arise from interventions for human or environmental welfare, and thereby enhance coping, adaptation and mitigation strategies for different kinds of social and environmental vulnerabilities. This could include having more livelihood options, enhancing diversity of natural resources and ecosystem complexity, and creating natural barriers to events such as floods, fires, erosion, etc.

Embed FLR Principles in All Forestry Related Policies: 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 while being mindful of ecological connectivity and social priorities. Current biodiversity and environmental goals can only be achieved when we encourage areas beyond protected areas such as managed landscapes and seascapes to also engage in sustainable practices of production, use and consumption. In the case of the forestry sector, FLR principles provide a good tool to advance this agenda.

Women and head teacher at the Gomore Primary School, review training material on reforestation produced under the ITTO project. Photo: S. Rollinson

Design and Implement Capacity Development Programmes: Include policymakers, NGOs, academia and civil society including indigenous peoples and local communities in forest training programmes, outreach and awareness raising activities. It is important to recognise that, given the dynamic nature of socio-ecological systems, ensuring resiliency requires all parts of government and society to be engaged. However, this puts forth the challenge of integrating and raising awareness across different stakeholders as knowledge and expertise on processes, tools and approaches is often dispersed among them. To complement traditional capacity building efforts, co-learning, peer exchanges, social learning tools can be explored.

Embed Equity Principles in Policy Plans and Programmes: To ensure that principles of equity, including the empowerment of women and gender sensitive policy development, are embedded in policy plans and programmes, participatory planning and implementation approaches are needed. 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 reporting could help embed this dimension more effectively.

Conclusion

The concept of Forest Landscape Restoration (FLR) is in many ways idealistic. It embraces the complexity involved in governing and managing land use priorities within a landscape. While conventionally, forest managers are responsible for managing forests, there is widespread acknowledgement that activities outside forestry do influence the quality and integrity of forest ecosystems. Restoration of forests cannot be successful if those drivers–socio-economic, political, cultural and natural—are not addressed together.

This requires coordinating 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 for many reasons. It requires gaining the trust and buy-in of different stakeholders across different sectors to work collaboratively. Issues of poverty, disputes between stakeholders regarding tenure and land uses, and the 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 on adapting approaches that work in different contexts is also widely available.

Such experiences focus on deliberating across different perspectives, leveraging synergies, and prioritising between different imperatives with a focus on the long-term sustainability and 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 the promotion of FLR practices. ITTO is also advocating gender equality. While incorporation of gender equality in ITTO projects still needs to gather more traction, there are signals that this is gradually becoming mainstream. However, it would require greater and continued investments in awareness-raising and obligatory reporting on progress on a specific indicator of gender inclusiveness and equality to ensure that this goes beyond tokenism and is fully integrated in practice.

In totality, these experiences offer a good illustration to landscape planners and decision makers and offers lessons that can be incorporated into, and adapted for, similar contexts.

Bárbara Viguera (Spain) participates in a field trip during the International Intensive Course on Diversified Management of Tropical Natural Forests, which was held in Costa Rica and which she attended courtesy of an ITTO fellowship grant. Photo: B. Viguera

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