Module 1 |
Principles and guiding elements for forest landscape restoration (FLR) in the tropics.

ITTO-IUFRO: FLR Learning Modules

Module 1:   Objective

Learning level:
Students at high schools, training centres and universities.

Learning objective:
By the end of Module 1, students will be able to name the 6 globally recognized principles of FLR in the tropics, as well as describe the conceptual basis and guiding elements for each principle.

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.   2 of 72

Module 1:   Outline

- Overview
- TOPIC 1:   Focus on landscapes.
- TOPIC 2:   Engage stakeholders, and support participatory governance.
- TOPIC 3:   Restore multiple functions for multiple benefits.
- TOPIC 4:   Maintain and enhance natural forest ecosystems within landscapes.
- TOPIC 5:   Tailor to the local context using a variety of approaches.
- TOPIC 6:   Manage adaptively for long-term resilience
- Summary
- Credits

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.   3 of 72

Module 1: Overview

The Guidelines for Forest Landscape Restoration (FLR) in the Tropics (ITTO, 2020):

- Support FLR interventions.
- Contain **6 principles and 32 guiding elements** (GEs) with recommended actions for each phase of FLR (from visioning to sustaining).
- Define FLR as **an ongoing process** that requires participation, adaptive management, and monitoring & learning.

Source: ITTO (2020)

FLR process based on six principles

Principles described in 32 guiding elements

Year 1 — Visioning → Conceptualizing → Implementing → Sustaining — Year X

Source: ITTO (2020)

Baseline for FLR: analysis, stakeholder platforms, governance

FLR interventions leading to sustainable forest and land management systems

Monitoring and adaptive management, financial and investment approaches

FLR results: sustainable production and protection forests and functional mosaic landscapes

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.
4 of 72

Topic 1: Focus on landscapes

Learning activities:
Class presentation, small group questions and student assignments.

Learning outcome:
By the end of Topic 1, students will be able to describe the conceptual basis for focussing on landscapes, as well as the 4 essential conditions for a successful FLR project.

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.
5 of 72

Topic 1: Focus on landscapes

WHY should we focus on landscapes?

A landscape scale allows us to:

- **Balance** environmental, social and economic priorities.
- **Restore** functional forest ecosystems within a mosaic of land uses.
- **Create** a mosaic of forest types for different purposes.
- **Secure** international support.

Source: ITTO (2020)

Source: IUCN & WRI (2014)

WIDE-SCALE RESTORATION

MOSAIC RESTORATION

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.
6 of 72

Topic 1: Focus on landscapes

HOW should we focus on landscapes?

GE 4: We should address tenure and access rights through:

- **Visioning:** Map land tenure and access rights.
- **Conceptualising:** Develop transparent and equitable processes for conflict resolution.
- **Implementing:** Address gender equity, and strengthen the access rights of forest dwellers and indigenous peoples.
- **Sustaining:** Ensure the long-term security of FLR investments.

Source: ITTO (2020)

VISIONING: Mapping clan land in Toma Valley, Papua New Guinea.
Photo: S. Rollinson

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.

10 of 72

Topic 1: References and resources

These **helpful guidelines** are freely available online:

- ITTO. 2002. *ITTO guidelines for the restoration, management and rehabilitation of degraded and secondary tropical forests.* Yokohama, Japan.
- ITTO. 2015. *Voluntary guidelines for the sustainable management of natural tropical forests.* Yokohama, Japan.
- ITTO. 2020. *Guidelines for forest landscape restoration in the tropics.* Yokohama, Japan.
- IUCN & WRI. 2014. *A guide to the restoration opportunities assessment methodology.* Gland, Switzerland.

This **interesting report** is freely available online:

- FAO and RECOFTC. 2016. *Forest landscape restoration in Asia-Pacific forests.* Bangkok, Thailand.

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.

11 of 72

Topic 1: References and resources

Watch this **14 minute video** about forest landscape restoration in Lombok, Indonesia:

- https://youtu.be/1UitUemB_h4

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.

12 of 72

Principles and guiding elements for forest landscape restoration (FLR) in the tropics   4

Topic 1: Small group questions

Each group should **discuss one of the questions** below with reference to their local context, and then **present their findings** to the class:

1. Why does FLR take place within and across entire landscapes?
2. Where are the best places to undertake FLR?
3. How should we undertake landscape level planning?
4. How should we promote a multi-sectoral approach?
5. How should we determine the most appropriate scale for FLR?
6. How should we tackle land tenure and land access issues?

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.

13 of 72

Topic 1: Student assignments

Each student should **research one of the questions** below with reference to local case-studies, and then **present their findings** in a written report.

1. Explain why nearly a billion hectares of tropical forest landscapes have recently become degraded, and require urgent restoration.
2. Explain which communication strategies can be used to build understanding and consensus among all sectors and stakeholder groups.
3. Explain how FLR helps to balance the environmental, social and economic priorities of different stakeholders.

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.

14 of 72

Topic 2: Engage stakeholders, and support participatory governance

Learning activities:
Class presentation, small group questions and student assignments.

Learning outcome:
By the end of Topic 2, students will be able to describe the conceptual basis for engaging stakeholders and supporting participatory governance, as well as the 8 essential conditions for a successful FLR project.

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.

15 of 72

Principles and guiding elements for forest landscape restoration (FLR) in the tropics

Topic 2: Engage stakeholders, and support participatory governance

WHY should we engage all stakeholders?
Active stakeholder engagement allows us to:
- **Understand** how stakeholders interact in a landscape.
- **Balance** the diverse requirements, values and perspectives of stakeholders.
- **Benefit** from the diverse knowledge and experience of stakeholders.
Source: ITTO (2020)

Source: IUCN & WRI (2014)

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.   16 of 72

Topic 2: Engage stakeholders, and support participatory governance

HOW should we engage stakeholders, and support participatory governance?
GE 5: We should build adequate governance capacity for decentralized FLR through:
- **Visioning & conceptualising:** Identify, inform and entrust responsibility for FLR management at the landscape level.
- **Implementing & sustaining:** Support regular inter-agency meetings, as well as provide strategic guidance on FLR management.

GE 6: We should obtain strong stakeholder engagement through:
- **Visioning & conceptualising:** Develop a shared vision for the future with stakeholders.
- **Implementing & sustaining:** Increase understanding of the factors that influence stakeholder engagement in FLR, and build productive partnerships at all levels.
Source: ITTO (2020)

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.   17 of 72

Topic 2: Engage stakeholders, and support participatory governance

VISIONING & CONCEPTUALISING: A group discussion between Forestry Administration officials, community forestry management committee members and local authorities about land use in Veal Okdey, Santuk district, Kampong Thom province, Cambodia.
Source: ITTO, TFU 29/2 2020. Photo: Chhom Vireak.   18 of 72

Principles and guiding elements for forest landscape restoration (FLR) in the tropics   6

Topic 2: Engage stakeholders, and support participatory governance

HOW should we engage stakeholders, and support participatory governance?

GE 7: We should conduct joint stakeholder analysis of the drivers of degradation through:

- **Visioning & conceptualising:** Define the underlying causes of land-use change and forest degradation, and assess the potential for FLR.
- **Implementing & sustaining:** Reduce or remove degradation pressures, and ensure all additional interventions are suitable for the site.

GE 8: We should strive for social equity and benefit sharing through:

- **Visioning & conceptualising:** Promote the equitable sharing of FLR costs & benefits.
- **Implementing & sustaining:** Utilise effective mechanisms for resolving conflicts.

Source: ITTO (2020)

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.

19 of 72

Topic 2: Engage stakeholders, and support participatory governance

IMPLEMENTING & SUSTAINING: Local women show their newly acquired fuel-efficient wood stoves, which have helped reduce wood fuel consumption in the forest communities of Kampong Thom province, Cambodia.

Source: ITTO, TFU 29/2 2020. Photo: S. Sineth/Forestry Administration.

20 of 72

Topic 2: Engage stakeholders, and support participatory governance

HOW should we engage stakeholders, and support participatory governance?

GE 9: We should conduct participatory FLR planning, decision-making & monitoring through:

- **Visioning & conceptualising:** Develop participatory planning & monitoring framework with reference to desired outcomes and indicators of success.
- **Implementing & sustaining:** Engage stakeholders in participatory planning and monitoring activities.

GE 10: We should build stakeholder capacity for sharing responsibility for FLR through:

- **Visioning & conceptualising:** Engage stakeholders in FLR through decision-support tools, and the formulation of scenarios, maps and restoration plans.
- **Implementing & sustaining:** Deliver relevant capacity building programs for all stakeholder groups.

Source: ITTO (2020)

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.

21 of 72

Topic 2: Engage stakeholders, and support participatory governance

IMPLEMENTING & SUSTAINING: National Forest Service field workers inspect teak seedlings growing in ploughed soil, intercropped with pineapple in Rigo district, Central province, Papua New Guinea.
Source: ITTO; TFU 29/2 2020. Photo: S. Rollinson.
22 of 72

Topic 2: Engage stakeholders, and support participatory governance

HOW should we engage stakeholders, and support participatory governance?

GE 11: We should address long-term financing for FLR interventions through:
- **Visioning & conceptualising:** Develop a financing strategy for each phase of FLR, and formulate proposals in consultation with selected funding agencies.
- **Implementing & sustaining:** Broaden the funding portfolio to sustain FLR.

GE 12: We should establish a favourable investment environment for FLR through:
- **Visioning & conceptualising:** Establish the required enabling conditions to attract investments.
- **Implementing & sustaining:** Assess the expectations and concerns of potential investors, and promote workable processes that address their needs.

Source: ITTO (2020)

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.
23 of 72

Topic 2: Engage stakeholders, and support participatory governance

Distribution of current and future FLR investment: a rough estimate

- Traditional investors
- Corporate social responsibility
- Non-governmental funding
- Crowdfunding
- Development cooperation (technical assistance and financial cooperation) and climate finance
- Private equity impact funds
- National environmental funds and State budgets

USD 5–10 billion per year?   USD 35–300 billion per year?

2015: 45%, 45%, 5%

2030: 20%, 20%, 5%, 15%, 5%, 5%, 30%

Source: FAO & UNCCD. 2015.
Principles and guiding elements for forest landscape restoration (FLR) in the tropics.
24 of 72

Topic 2: References and resources

These **helpful guidelines** are freely available online:
- Hanson et al. 2015. *The restoration diagnostic.* WRI, Washington, DC.
- ITTO. 2020. *Guidelines for forest landscape restoration in the tropics*. Yokohama, Japan.
- Stanturf, J., Mansourian, S. & Kleine, M., eds. 2017. *Implementing forest landscape restoration: a practitioner's guide*. IUFRO, Vienna, Austria.

These **interesting reports** are freely available online:
- Evans, K. & Guariguata, M.R. 2019. *A diagnostic for collaborative monitoring in forest landscape restoration*. CIFOR, Bogor, Indonesia.
- FAO & UNCCD. *2015. Sustainable financing for forest and landscape restoration*. Rome.

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.   25 of 72

Topic 2: References and resources

Watch this **8 minute video** about strengthening the governance of community forests in Java and Nusa Tenggara, Indonesia:
- https://youtu.be/QNV8TfNUHao

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.   26 of 72

Topic 2: Small group questions

Each group should **discuss one of the questions** below with reference to their local context, and then **present their findings** to the class:
1. Why is stakeholder participation and collaboration essential for FLR?
2. How should we decentralize control and engage stakeholders?
3. How should we remove the drivers of degradation, and share the associated costs and benefits?
4. How should we involve stakeholders in FLR planning, monitoring and decision-making?
5. How should we ensure there are always sufficient resources for FLR interventions?

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.   27 of 72

Principles and guiding elements for forest landscape restoration (FLR) in the tropics   9

Topic 2: Student assignments

Each student should **research one of the questions** below with reference to local case-studies, and then **present their findings** in a written report.

1. Explain why stakeholder participation and collaboration is essential for FLR.
2. Explain which stakeholder groups should participate in FLR interventions.
3. Explain how FLR balances the diverse requirements, values and perspectives of stakeholders.

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.   28 of 72

Topic 3: Restore multiple functions for multiple benefits

Learning activities:
Class presentation, small group questions and student assignments.

Learning outcome:
By the end of Topic 3, students will be able to describe the conceptual basis for restoring multiple functions for multiple benefits, as well as the 4 essential conditions for a successful FLR project.
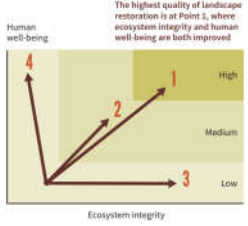
Principles and guiding elements for forest landscape restoration (FLR) in the tropics.   29 of 72

Topic 3: Restore multiple functions for multiple benefits

WHY should we focus on multiple outcomes?
A multi-purpose approach allows us to:
- **Maximise the multi-purpose role of forests** including restore soil fertility, increase carbon storage, reduce soil erosion, and generate forest products.
- **Develop forest management strategies** that deliver multiple benefits, such as create jobs, diversify livelihoods, and provide recreational areas.
Source: ITTO (2020)

The highest quality of landscape restoration is at Point 1, where ecosystem integrity and human well-being are both improved

Human well-being

4

1   High

2

3   Medium

Low

Ecosystem integrity
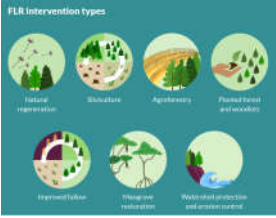
Source: FAO & UNCCD. 2015.

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.   30 of 72

Topic 3: Restore multiple functions for multiple benefits

HOW should we focus on multiple outcomes?

GE13: We should generate multiple functions and benefits through:

- **Visioning:** Identify high-value forest products and estimate their future potential.
- **Conceptualising:** Develop feasible strategies with stakeholders for generating multiple benefits from forest products and services.
- **Implementing:** Provide information about forests and trees, and promote their value at all levels of society.
- **Sustaining:** Provide incentives for farmers to diversify their agricultural production systems with multi-purpose tree species.

Source: ITTO (2020)

Source: IUCN. 2018.

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.   31 of 72

Topic 3: Restore multiple functions for multiple benefits

HOW should we focus on multiple outcomes?

GE14: We should conserve biodiversity, and restore ecological functions through:

- **Visioning:** Prioritise the restoration of degraded natural forests
- **Conceptualising:** Design FLR interventions that focus on the restoration of ecological functions.
- **Implementing:** Develop FLR strategies that improve conservation planning and impact monitoring in critical areas.
- **Sustaining:** Provide incentives for diversified agricultural practices that deliver multiple products and ecological services.

Source: ITTO (2020)

SUSTAINING: A healthy forest landscape in the Alto Vale do Itajaí region, Brazil.
Source: ITTO, TFU 29/3 2020. Photo: © Wigold Schäffer.

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.   32 of 72

Topic 3: Restore multiple functions for multiple benefits

HOW should we focus on multiple outcomes?

GE15: We should improve livelihoods through:

- **Visioning:** Determine and prioritise feasible strategies for improving livelihoods.
- **Conceptualising:** Design FLR interventions that have the potential to meet local needs.
- **Implementing:** Engage stakeholders in FLR interventions through incentive mechanisms, capacity building programs and institutional development.
- **Sustaining:** Diversify FLR strategies for improving livelihoods and long-term resource security.

Source: ITTO (2020)

IMPLEMENTING: Villagers restoring highly fragmented and degraded forest landscape in Nongbua, Lao People's Democratic Republic.
Source: ITTO, TFU 29/3 2020. Photo: Asian Forest Cooperation Organization.
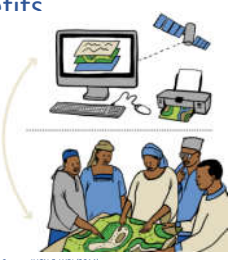
Principles and guiding elements for forest landscape restoration (FLR) in the tropics.   33 of 72

Topic 3: Restore multiple functions for multiple benefits

HOW should we focus on multiple outcomes?

GE16: We should make full use of locally based knowledge through:

- **Visioning:** Give equal weight to local knowledge when defining FLR outcomes and strategies.
- **Conceptualising:** Design FLR interventions that combine local knowledge with technological advances.
- **Implementing:** Document traditional land-use practices that enable local communities to obtain multiple benefits.
- **Sustaining:** Ensure FLR interventions enhance and sustain local cultural values associated with natural resources.

Source: ITTO (2020)

Source: IUCN & WRI (2014)

Principles and guiding elements for forest landscape restoration (FLR) in the tropics. 34 of 72

Topic 3: References and resources

These **helpful guidelines** are freely available online:
- ITTO. 2020. *Guidelines for forest landscape restoration in the tropics.* Yokohama, Japan.

These **interesting reports** are freely available online:
- FAO. 2015. *Global guidelines for the restoration of degraded forests and landscapes in drylands: building resilience and benefiting livelihoods.* Rome
- FAO. 2017. *Smallholder forest producer organizations in a changing climate.* Rome.
- Gann et al. 2019. *International principles and standards for the practice of ecological restoration.* In Restoration Ecology 27(S1).
- IUCN 2018. *The Bonn Challenge.* Gland, Switzerland
- Verdone, M. 2015. *A cost-benefit framework for analyzing forest landscape restoration decisions.* IUCN, Gland, Switzerland.

Principles and guiding elements for forest landscape restoration (FLR) in the tropics. 35 of 72

Topic 3: References and resources

Watch this **6 minute video** about forest landscape restoration in the Chimbo river basin, Ecuador:
- https://youtu.be/dEEDBDw9DAU

Principles and guiding elements for forest landscape restoration (FLR) in the tropics. 36 of 72

Topic 3: Small group questions

Each group should **discuss one of the questions** below with reference to their local context, and then **present their findings** to the class:

1. Why should we adopt a multi-purpose approach to FLR?
2. How should we deliver environmental, social and economic outcomes?
3. How should we create biodiverse landscapes?
4. How should we improve livelihoods and resource security?
5. How should we utilise the social capital in landscapes?

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.   37 of 72

Topic 3: Student assignments

Each student should **research one of the questions** below with reference to local case-studies, and then **present their findings** in a written report.

1. Explain why many forest-dependent communities adopt multi-purpose forest management strategies.
2. Explain which important ecological functions are protected by FLR.
3. Explain how FLR differs from conventional forest management.

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.   38 of 72

Topic 4: Maintain and enhance natural forest ecosystems within landscapes

Learning activities:
Class presentation, small group questions and student assignments.

Learning outcome:
By the end of Topic 4, students will be able to describe the conceptual basis for maintaining and enhancing natural forest ecosystems within landscapes, as well as the 4 essential conditions for a successful FLR project.

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.   39 of 72

Topic 4: Maintain and enhance natural forest ecosystems within landscapes

WHY should we maintain and enhance natural forest ecosystems?

Natural forest ecosystem processes are related to:

- Species composition
- Forest structure
- Forest productivity
- Biodiversity
- Pollination
- Floral and faunal genetic diversity.

Source: ITTO (2020)

PRISTINE: Guyana's vast tropical forests are attracting increasing numbers of tourists, and many Guyanese women are providing ecotourism services.
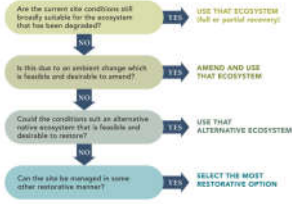*Source: ITTO, TFU 29/2 2020. Photo: GFC.*

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.
40 of 72

Topic 4: Maintain and enhance natural forest ecosystems within landscapes

HOW should we maintain and enhance natural forest ecosystems?

GE17: We should avoid the conversion of natural forests through:

- **Visioning:** Define the drivers of land-use change and forest degradation.
- **Conceptualising:** Develop strategies for addressing the causes of conversion using a cross-sectoral approach.
- **Implementing:** Define the permanent forest estate, and create incentives for local stakeholders to stabilise nearby landscapes.
- **Sustaining:** Prioritise sustainable forest management above other non-forest land-uses.
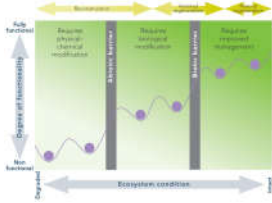
Source: ITTO (2020)

Source: Gann et al. (2019)

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.
41 of 72

Topic 4: Maintain and enhance natural forest ecosystems within landscapes

HOW should we maintain and enhance natural forest ecosystems?

GE18: We should restore degraded forests, and rehabilitate degraded forest land through:

- **Visioning:** Identify and prioritise degraded forest areas for FLR.
- **Conceptualising:** Develop cost-effective strategies for achieving desired outcomes.
- **Implementing:** Plan FLR interventions that address the drivers of forest degradation, and recognise the potential to restore full functionality.
- **Sustaining:** Encourage economic activities to increase the economic viability of FLR.

Source: ITTO (2020)

Source: McDonald et al. 2016

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.
42 of 72

Topic 4: Maintain and enhance natural forest ecosystems within landscapes

HOW should we maintain and enhance natural forest ecosystems?

GE19: We should avoid forest fragmentation through:

- **Visioning:** Assess the extent of forest fragmentation, and formulate strategies to increase connectivity.
- **Conceptualising:** Prepare/update thematic maps for cross-sectoral landscape planning.
- **Implementing:** Establish agreements with stakeholders that support forest landscape maintenance and connectivity.
- **Sustaining:** Monitor and adaptively manage forest fragmentation.

Source: ITTO (2020)

Source: IUCN & WRI (2014)

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.

43 of 72

Topic 4: Maintain and enhance natural forest ecosystems within landscapes

HOW should we maintain and enhance natural forest ecosystems?

GE20: We should conserve natural grasslands, savannas and wetlands through:

- **Visioning:** Identify areas that should be conserved (planted forests should not replace existing native ecosystems).
- **Conceptualising:** Assess the risks of natural areas being converted, and formulate mitigation measures.
- **Implementing:** Undertake conservation and management measures in natural areas.
- **Sustaining:** Monitor and adaptively manage the conservation of natural areas.

Source: ITTO (2020)

IMPLEMENTING: A communication campaign in Peru implemented close to the dry forest habitat of the white-winged guan helped reduce the threatened status of the species.
Source: ITTO, TFU (2020. Photo: CORBID)

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.

44 of 72

Topic 4: References and resources

These **helpful guidelines** are freely available online:

- ITTO. 2015. *Voluntary guidelines for the sustainable management of natural tropical forests.* Yokohama, Japan.
- ITTO. 2020. *Guidelines for forest landscape restoration in the tropics.* Yokohama, Japan.
- ITTO & IUCN. 2008. *Guidelines for the conservation and sustainable use of biodiversity in tropical timber production forests.* Yokohama, Japan.
- Willemen et al. 2014. *Spatial planning and monitoring of landscape interventions.* EcoAgriculture Partners, Washington, DC.

This **interesting report** is freely available online:

- McDonald et al. 2016. *International standards for the practice of ecological restoration.* Society for Ecological Restoration, Washington, DC.

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.

45 of 72

Principles and guiding elements for forest landscape restoration (FLR) in the tropics

15

Topic 4:   References and resources

Watch this **14 minute video** about restoring ecosystem service in the Gulf of Mexico:
- https://youtu.be/CxH5_-L83I4

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.   46 of 72

Topic 4:   Small group questions

Each group should **discuss one of the questions** below with reference to their local context, and then **present their findings** to the class:
1.   Why are natural forest ecosystems important?
2.   How should we address the drivers of land-use change and forest degradation?
3.   How should we go about restoring degraded forests?
4.   How should improve forest structure and dynamics in fragmented landscapes?
5.   How should we conserve natural grasslands, savannas and wetlands?

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.   47 of 72

Topic 4:   Student assignments

Each student should **research one of the questions** below with reference to local case-studies, and then **present their findings** in a written report.
1.   Explain why natural forest ecosystems are degraded.
2.   Explain which dynamic forest processes benefit from FLR.
3.   Explain how natural forest ecosystems are restored.

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.   48 of 72

Principles and guiding elements for forest landscape restoration (FLR) in the tropics   16

Topic 5:   **Tailor to the local context using a variety of approaches**

Learning activities:
Class presentation, small group questions and student assignments.

Learning outcome:
By the end of Topic 5, students will be able to describe the conceptual basis for tailoring FLR interventions to the local context, as well as the 6 essential conditions for a successful FLR project.

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.   49 of 72

Topic 5:   **Tailor to the local context using a variety of approaches**

WHY should we tailor interventions to the local context using a variety of approaches?

A tailor-made approach allows us to:

- **Respond** to the needs of local people and ecosystems when planning and implementing FLR interventions.
- **Undertake** a variety of FLR interventions adapted to different situations (e.g. local values & needs, and historical & legal context).

Source: ITTO (2020)

The women's association - MALEBI - in Dimbokro, Côte d'Ivoire realized they needed to restore the forest to ensure a sustainable supply of wood for their charcoal business.
Source: ITTO, TFU 28/1 2019. Photo: SODEFOR.

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.   50 of 72

Topic 5:   **Tailor to the local context using a variety of approaches**

HOW should we tailor interventions to the local context?

GE 21: We should assess local context and restrictions through:

- **Visioning & conceptualising:** Assess the local environmental conditions driving change in the landscape.
- **Implementing & sustaining:** Tailor FLR interventions for specific sites in response to local opportunities and threats.
- **GE 22:** We should allow for future changes in conditions through:
- **Visioning & conceptualising:** Assess future opportunities and emerging threats.
- **Implementing & sustaining:** Provide incentives for climate-smart technologies and land-uses adapted to climate change forecasts.

Source: ITTO (2020)

IMPLEMENTING: MALEBI now produces significant quantities of charcoal for sale in Abidjan, Côte d'Ivoire.
Source: ITTO, TFU 28/1 2019. Photo: R. Carrillo.

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.   51 of 72

Principles and guiding elements for forest landscape restoration (FLR) in the tropics   17

Topic 5: Tailor to the local context using a variety of approaches

HOW should we tailor interventions to the local context?

GE 23: We should generate local benefits through:

- **Visioning & conceptualising:** Define a vision for the future that benefits local stakeholders without compromising ecological stability.
- **Implementing & sustaining:** Maintain ongoing dialogue with local stakeholders to strive for the equitable sharing of benefits.

GE 24: We should achieve the financial and economic viability of FLR investments through:

- **Visioning & conceptualising:** Analyse the costs and benefits of FLR interventions, and develop attractive strategies for FLR investments.
- **Implementing & sustaining:** Explore opportunities for market-based incentives and adding value to goods and ecosystem services.

Source: ITTO (2020)

Source: IUCN & WRI (2014)

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.

52 of 72

Topic 5: Tailor to the local context using a variety of approaches

HOW should we tailor interventions to the local context?

GE25: We should identify opportunities to increase local incomes through:

- **Visioning:** Strengthen forest producer organizations and locally based enterprises.
- **Conceptualising:** Promote local value-adding and involvement of women.
- **Implementing:** Partner with public and private sector networks and explore options for community based forest management schemes.
- **Sustaining:** Monitor and adaptively manage interventions to increase local incomes.

Source: ITTO (2020)

CONCEPTUALISING: Gender equality is an issue that concerns both men & women.
Source: ITTO, TFU 28/1 2019. Photo: SODEFOR

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.

53 of 72

Topic 5: Tailor to the local context using a variety of approaches

HOW should we tailor interventions to the local context?

GE26: We should develop sustainable supply chains through:

- **Visioning:** Identify the potential to develop legal and sustainable supply chains for goods produced in restored forest landscapes.
- **Conceptualising:** Develop legal and sustainable supply chains in restored forest landscapes that are accessible to local communities.
- **Implementing:** Create enabling conditions for the supply of products from restored forests and agroforestry systems.
- **Sustaining:** Develop marketing opportunities and value chains for forest products and ecosystem services.

Source: ITTO (2020)

IMPLEMENTING: Members of MALEBI tend cuttings that will later be out planted as part of forest restoration efforts in Côte d'Ivoire.
Source: ITTO, TFU 28/1 2019. Photo: R. Carrillo.

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.

54 of 72

Topic 5: References and resources

These **helpful guidelines** are freely available online:

- Barnett et al. 2017. *Gender matters in forest landscape restoration*. CIFOR, Bogor, Indonesia.
- FAO. 2011. *Community-based tree and forest product enterprises: Market analysis and development*. Rome.
- ITTO. 2020. *Guidelines for forest landscape restoration in the tropics*. Yokohama, Japan.
- RECOFTC. 2020. *Introduction to forest landscape restoration in Southeast Asia*. Bangkok.

These **interesting reports** are freely available online:

- Chazdon, R.L & Guariguata, M.R. 2018. *Decision support tools for forest landscape restoration*. CIFOR, Bogor, Indonesia.
- Greijmans & Gritten. 2015. *Is community forestry open for* RECOFTC, Bangkok, Thailand.

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.

55 of 72

Topic 5: References and resources

Watch this **5 minute video** about the charcoal women from Côte d'Ivoire:

- https://youtu.be/Lckxy_jHBUo

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.

56 of 72

Topic 5: Small group questions

Each group should **discuss one of the questions** below with reference to their local context, and then **present their findings** to the class:

1. Why should we adopt a tailor-made approach?
2. How should we respond to external opportunities and threats?
3. How should we generate local benefits and long-term viability?
4. How should we increase local incomes?
5. How should we develop sustainable supply chains for goods produced in restored forests and landscapes?

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.

57 of 72

Topic 5: **Student assignments**

Each student should **research one of the questions** below with reference to local case-studies, and then **present their findings** in a written report.

1. Explain why some landscapes contain a variety of FLR interventions.
2. Explain which FLR investments are more likely to be financed.
3. Explain how FLR responds to the needs of local people and ecosystems.

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.   58 of 72

Topic 6: **Manage adaptively for long-term resilience**

Learning activities:
Class presentation, small group questions and student assignments.

Learning outcome:
By the end of Topic 6, students will be able to describe the conceptual basis for the adaptive management of FLR interventions, as well as the 6 essential conditions for a successful FLR project.

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.   59 of 72

Topic 6: **Manage adaptively for long-term resilience**

WHY should we manage adaptively for long-term resilience?

An adaptive approach allows us to:

- **Modify** FLR interventions over time to reflect changes in the landscape.
- **Improve** FLR management plans using lessons learnt from ongoing monitoring, research and stakeholder feedback.
- **Maintain** resilient and productive forest landscapes that deliver desired environmental, social and economic outcomes.

Source: Evans & Guariguata (2016)
Principles and guiding elements for forest landscape restoration (FLR) in the tropics.   60 of 72

Principles and guiding elements for forest landscape restoration (FLR) in the tropics   20

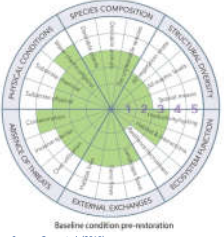Topic 6: **Manage adaptively for long-term resilience**

HOW should we manage adaptively for long-term resilience?

GE 27: We should take an adaptive management approach through:

- **Visioning & conceptualising:** Ensure stakeholders recognise the importance of adaptive management.
- **Implementing & sustaining:** Regularly improve plans with reference to monitoring and research reports.

GE 28: We should continually measure the biophysical dimensions of the landscape through:

- **Visioning & conceptualising:** Document and map the baseline situation.
- **Implementing & sustaining:** Analyse outcomes with reference to the baseline situation.

Source: ITTO (2020)

Source: Gann et al. (2019)

Baseline condition pre-restoration

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.

61 of 72

Topic 6: **Manage adaptively for long-term resilience**

HOW should we manage adaptively for long-term resilience?

GE29: We should periodically assess vulnerability to climate change through:

- **Visioning:** Evaluate the adaptive capacity of stakeholders, as well as encourage research aimed at maintaining ecological processes.
- **Conceptualising:** Assess the impact of unpredictable events and long-term global climate change processes on landscape dynamics and ecosystem functions.
- **Implementing:** Develop FLR interventions that increase the resilience of ecosystems and social systems to climate change.
- **Sustaining:** Explore the potential for FLR interventions within the United Nations Framework Convention on Climate Change (UNFCC).
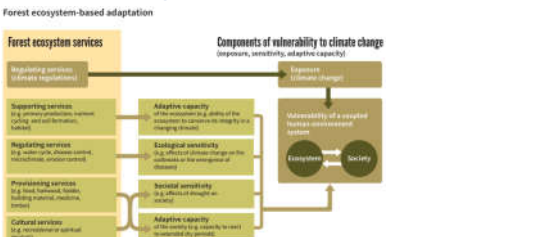
Source: ITTO (2020)

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.

62 of 72

Topic 6: **Manage adaptively for long-term resilience**

Forest ecosystem-based adaptation

Source: FAO & UNCCD. 2015.

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.

63 of 72

Principles and guiding elements for forest landscape restoration (FLR) in the tropics

Topic 6: Manage adaptively for long-term resilience

HOW should we manage adaptively for long-term resilience?

GE 30: We should develop participatory monitoring of FLR through:

- **Visioning:** Define outcomes and indicators of success through participatory processes.
- **Conceptualising:** Prepare participatory planning and monitoring framework with reference to desired outcomes and indicators of success.
- **Implementing:** Assist stakeholders to recognise the adaptations required to optimize outcomes.
- **Sustaining:** Incorporate participatory monitoring into local networks.

MEASUREMENT	GOAL-THEME	SUB-THEME	INDICATOR	METRIC	BASELINE	TARGET	WEIGHT (0–1)
1	Land use	Growth	Forest cover	ha	760,000 ha	Increase forest cover to 800,000 ha	0.5
2	Biodiversity	Connectivity	Biological corridors	ha	30,000 ha	Increase the area in corridors by 50,000 ha	0.25
3	Community	Income	Permanent jobs created	Jobs	250 jobs	Increase number of permanent jobs by 800	0.25

Source: Buckingham et al. (2019)

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.

64 of 72

Topic 6: Manage adaptively for long-term resilience

HOW should we manage adaptively for long-term resilience?

GE 31: We should encourage open access to, and the sharing of, information and knowledge through:

- **Visioning & conceptualising:** Develop communication strategies that ensure all stakeholders have continuous and easy access to information on all aspects of FLR.
- **Implementing & sustaining:** Build information networks for sharing experiences, and developing ideas and actions for FLR.

GE 32: We should report on FLR outcomes through:

- **Visioning & conceptualising:** Develop participatory planning and monitoring framework.
- **Implementing & sustaining:** Establish robust reporting processes to ensure all stakeholders are fully informed.

Source: ITTO (2020)

IMPLEMENTING: This boy from Veracruz in Mexico contributed a drawing to the Day of the Tree.

Source: ITTO, TFU 29/1 2019. Photo: Women of El Piñonal Nursery.

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.

65 of 72

Topic 6: References and resources

These **helpful guidelines** are freely available online:

- Buckingham et al. 2019. *A guide to identifying priorities and indicators for restoration monitoring.* WRI, Washington, DC.
- FAO. 2013. *Climate change guidelines for forest managers.* Rome.
- ITTO. 2020. *Guidelines for forest landscape restoration in the tropics.* Yokohama, Japan.

These **interesting reports** are freely available online:

- Evans, K. & Guariguata, M.R. 2016. *Success from the ground up: participatory monitoring and forest restoration.* CIFOR, Bogor, Indonesia.
- FAO. 2014. *Multi-sectoral platforms for planning and implementation.* Rome.

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.

66 of 72

Principles and guiding elements for forest landscape restoration (FLR) in the tropics

Topic 6: References and resources

Watch this **5 minute video** about forest management resources for Amazonia, Brazil:
- https://youtu.be/1ULJ6rWmb74

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.   67 of 72

Topic 6: Small group questions

Each group should **discuss one of the questions** below with reference to their local context, and then **present their findings** to the class:

1. Why do FLR interventions need to be adapted over time?
2. How should we improve FLR management plans over time?
3. How should we assess the vulnerability of ecosystems and social systems in a landscape?
4. How should we undertake participatory planning and monitoring?
5. How should we communicate FLR information and learning?

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.   68 of 72

Topic 6: Student assignments

Each student should **research one of the questions** below with reference to their local context, and then **present their findings** in a written report.

1. Explain why FLR interventions are modified over time.
2. Explain which parts of a landscape are more likely to change over time.
3. Explain how FLR maintains resilient and productive forest landscapes.

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.   69 of 72

Module 1: Summary

The **Guidelines for Forest Landscape Restoration in the Tropics** (ITTO, 2020) contain **6 principles and 32 guiding elements** (GEs) with recommended actions for each phase of FLR (from visioning to sustaining).

- PRINCIPLE 1: Focus on landscapes (4 GEs).
- PRINCIPLE 2: Engage stakeholders and support participatory governance (8 GEs).
- PRINCIPLE 3: Restore multiple functions for multiple benefits (4 GEs).
- PRINCIPLE 4: Maintain and enhance natural forest ecosystems within landscapes (4 GEs).
- PRINCIPLE 5: Tailor to the local context using a variety of approaches (6 GEs).
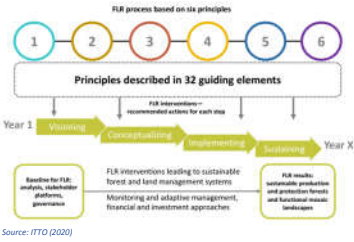- PRINCIPLE 6: Manage adaptively for long-term resilience (6 GEs).

Source: ITTO (2020)

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.

70 of 72

Module 1: Summary

FLR process based on six principles

1 2 3 4 5 6

Principles described in 32 guiding elements

FLR interventions – recommended actions for each step

Year 1 Visioning Conceptualising Implementing Sustaining Year X

Baseline for FLR: analysis, stakeholder platforms, governance

FLR interventions leading to sustainable forest and land management systems

Monitoring and adaptive management, financial and investment approaches

FLR results: sustainable production and protection forests and functional mosaic landscapes

Source: ITTO (2020)

Principles and guiding elements for forest landscape restoration (FLR) in the tropics.

71 of 72

Module 1: Credits

Module 1 was developed for ITTO and IUFRO under the GEF-approved project "Fostering Partnerships to Build Coherence and Support for FLR", which supports the Collaborative Partnership on Forests (CPF) Joint Initiative on FLR.

The following institutions and people collaborated on this module:

- **Institutions:** Pacific Island Projects, Papua New Guinea
- **Contributor:** Simon Rollinson
- **Layout supporter:** Shona Smith

Suggested citation: ITTO-IUFRO FLR learning modules (2021)

72 of 72

Principles and guiding elements for forest landscape restoration (FLR) in the tropics   24