



Module 2:

Objective



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



Learning objective:
Present the FLR process as a long-term intervention into a socio-ecological system based on project cycle management as a tool to address complexity of land use, allow for adaptive management of natural resources and monitoring of progress/impact on the ground.


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Module 2:

Outline

- TOPIC 1: Underlying causes of degradation
- TOPIC 2: Enabling environment for restoration
- TOPIC 3: Designing an FLR project
- TOPIC 4: Innovative technical restoration approaches
- TOPIC 5: Monitoring short- and long-term restoration progress and impact
- Credits



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Topic 1:

Underlying causes of degradation

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

Learning outcome:
By the end of Topic 1, students will have developed a basic understanding of landscape dynamics and the drivers of forest and land degradation representing a complex mix of interacting social, economic and ecological factors.

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Accelerated Erosion
Source: FAO/UNEP/WHO

Potential Acid Sulphate Soils
Source: FAO/UNEP/WHO

Livestock
Source: FAO/UNEP/WHO

Altered Fire Regime
Source: FAO/UNEP/WHO

Invasive Vegetation
Source: FAO/UNEP/WHO

Saline Soil
Source: FAO/UNEP/WHO

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Topic 1:

1.1 Landscape dynamics

Land use transition

proportion of landscape

stage in land use transition

pre-settlement frontier subsistence intensifying intensive

natural ecosystems protected recreational lands urban areas intensive agriculture

Drivers of land use transition

- Globalization
- Emerging social needs
- Demographic pressure
- Land degradation
- Climate change
- Government policy

Threats of land use transition

- Weakened land tenure
- Continued land degradation
- Loss of culture & traditions
- Growing inequality
- Increased vulnerability

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Source: Foley et al. 2005

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Topic 1:

1.2 Characterise landscape:
Landscape analysis

Driving forces

- Demography, incl. labour availability
- Historic development
- Economic factors – livelihood strategies
- Social change

Current situation

- Biodiversity
- Land parameters (productivity, erodibility, etc.)
- Land use types, incl. cover
- Associated problems

Projected situation

- Land use trajectory - likely land use scenario after 10 years

Internal driving forces

vs. ↓

External driving forces

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Topic 1:

1.3 Addressing drivers of degradation

Trends, conditions & response options

Pressure

- Demographic change
- Social change
- Economic change
- Climate change

State

- Degraded land
- Reduced biodiversity
- Migration
- Insecure land tenure
- Reduced resilience
- Low carbon stocks

Response

- Stakeholder engagement
- Planning approaches
- Restoration options
- Landscape connectivity
- Conflict resolution

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Topic 1:

References and resources

- DeFries, R.S., Rudel, T., Uriarte, M., Hansen, M., 2010. Deforestation driven by urban population growth and agricultural trade in the twenty-first century. *Nature Geoscience* 3, 178–181.
- Foley, J.A., et al. (2005) *Global Consequences of Land Use*. *Science*, 309, 570-574
- IPBES, 2018. *Summary for policymakers of the thematic assessment report on land degradation and restoration of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. In: Scholes, R., Montanarella, L., Brainich, A., Barger, M., Brink, B.J., Cantele, M., Erasmus, B., Fisher, J., Gardner, T., Holland, T.G., Kohler, F., Kotiaho, J.S., Maltitz, G.V., Nangendo, G., Pandit, R., Parrotta, J., Potts, M.D., Prince, S., Sankaran, M., Willemen, L. (Eds.). IPBES Secretariat, Bonn, Germany
- Robinson, B.E., Holland, M.B., Naughton-Treves, L., 2014. Does secure land tenure save forests? A meta-analysis of the relationship between land tenure and tropical deforestation. *Global Environmental Change* 29, 281–293.

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Topic 1: Small group questions

1. What other drivers of land degradation and deforestation are known to you?
2. In which stage of the land use transition is your landscape in?
3. What are the main drivers of land degradation in your landscape?
4. Analyse the current situation in your landscape!
5. What will your landscape look like in 10 years in case current trends do not change and no restoration takes place?



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Topic 1: Student assignments

Apply the landscape analysis for your landscape / a landscape well-known to you:

1. Analyse drivers responsible for changes at the landscape level, including degradation and deforestation.
2. Identify and describe the current status of land degradation.
3. Visualize expected future trends and possible trajectories of how your landscape will evolve.



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Topic 2: Enabling environment for restoration



Learning activities:

Class presentation, small group questions and student assignments.



Learning outcome:

By the end of Topic 2, students will be familiar with the various aspects of an enabling institutional, regulatory and policy environment for forest landscape restoration as well as behavioural characteristics such as motivation, shared visions and new ways of learning to initiate change.

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Topic 2:

2.1 Synthesized list of enabling conditions for FLR

with reference to FLR Module 1: Principles 1 to 6

Engagement for common interests

1. Shared motivation & vision (Principle 3)

2. Stakeholder engagement (Principle 3)

3. Economic viability (Principle 5)

Clear rules

4. Enabling policy & regulatory framework (Principle 3 and 4)

5. Clear and secure tenure (Principle 3 and 4)

6. Effective governance (Principle 3)

Focus on landscapes

7. Landscape approach (Principle 1)

8. Landscape suitability for FLR (Principle 2)

Available knowledge and capacities

9. Accessible & efficient knowledge base (Principle 4)

10. Adequate capacities (Principle 4)

Change management

11. Negotiated change logic (Principle 6)

12. Flexible approach incorporating new learning (Principle 6)

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Topic 2:

2.2 Shared motivation & vision

with reference to FLR Module 1: Principle 3



Shared motivation for restored landscapes





Common understanding of FLR





Common vision of the restored landscape



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Topic 2:

2.3 Stakeholder engagement

with reference to FLR Module 1: Principle 3

Stakeholder	Involvement category	Role in project	Type of engagement	Frequency of engagement
Forest Department	Primary stakeholder	Technical implementer	Implementation, technical advisory	Monthly team meetings, capacity building
FLR facilitators	Primary stakeholder	Lead coordination	Coordination, facilitation, planning, monitoring	Intensive engagement full time
Local farmers	Primary stakeholder	Main beneficiaries	Implementation, labour	Quarterly coordination meetings, awareness programmes
Land owners	Primary stakeholder	Main enablers	Implementation	Awareness campaigns
Timber industry	Secondary stakeholder	Investors	Provide funding	Inform regularly, conduct advocacy

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Topic 2:

2.4 Economic viability

with reference to FLR Module 1: Principle 5

- FLR needs to be economically attractive
- Need to ensure early flow of benefits to communities
- Public funding will remain insufficient to achieve global restoration targets
- Need to increasingly engage private sector

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Topic 2:

2.5 Enabling policy & regulatory framework

with reference to FLR Module 1: Principles 3 and 4

Regulatory instrument	Minimum contents to enable FLR
Policies	<ul style="list-style-type: none">• Specify FLR as a government priority, possibly linking it to international commitments• Define the country's policy on FLR
Laws	<ul style="list-style-type: none">• Define & enable FLR• Specify jurisdictional hierarchy responsible for FLR• Establish tenure rights• Enable benefit sharing and dispute resolution mechanisms• Incentives for restoration
Regulations	<ul style="list-style-type: none">• Rules & regulations for implementing FLR• Guidelines• Additional administrative requirements

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Topic 2:

2.6 Clear and secure tenure

with reference to FLR Module 1: Principles 3 and 4

- Basis for the sustainability of all land-based interventions, incl. FLR
- Unclear tenure:
 - Governance challenge
 - Conflicts over benefit distribution
 - Long-term investments unlikely
- Assess land-tenure and try to secure tenure, especially for local stakeholders, as a key issue to allow investments in FLR

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Topic 2:

2.7 Effective (landscape) governance

with reference to FLR Module 1: Principle 3

Multiple actors



Challenge engaging multiple diverse stakeholders

Multiple functions



Challenge of sectoral integration

Multiple scales



Challenge of crossing administrative boundaries

The concept of landscape governance tries to overcome these challenges by facilitating spatial and integrated decision-making which is multi-actor, multi-sector and multi-scale (GLF Landscape Academy).

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Topic 2:

2.8 Landscape suitability for FLR

with reference to FLR Module 1: Principle 2

Landscape suitable for restoration:

- Ecologically (climate, soils, hydrology, competing vegetation) suitable for restoration
- Indigenous planting material available
- Empowered local communities
- Market forces do not promote competing land use
- Existing markets for products from restored areas



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Topic 2:

2.9 Negotiated change logic

with reference to FLR Module 1: Principle 6

- FLR needs to be tailored to local conditions
- Discuss trade-offs & compensation
- Refer international best practice guidelines (e.g. IUFRO FLR Practitioner's Guide)
- Landscape-level FLR planning (e.g. through land use planning)
 - Determine availability of land for FLR
 - Zoning to define spatial location of FLR activities
 - Action planning to define roles and responsibilities, resources and timelines
 - By-laws to define rules



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Topic 2: References and resources

- Mansourian, S., 2017. *Governance and forest landscape restoration: A framework to support decision-making*. Journal for Nature Conservation 37, 21–30.
- Mansourian, S. (2021). *Disciplines, Sectors, Motivations and Power Relations in Forest Landscape Restoration*. Ecological Restoration 39(1), 16-26. <https://www.muse.jhu.edu/article/793656>
- Stanturf J.A., Kleine M., Mansourian S. et al. (2017/2019/2020). *Implementing Forest Landscape Restoration: A Practitioner's Guide* (EN, FR, SP). Available at: <https://www.iufro.org/science/special/spdc/netw/flr/flr-pract-guide/>



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Topic 2: Small group questions

1. Which enabling conditions proved to be crucial in your FLR project / an FLR project known to you?
2. Do all enabling conditions need to be present for FLR to be successful?
3. Analyse your FLR situation in the context of the different enabling conditions!
4. Can you initiate FLR in case of insecure land tenure?



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Topic 2: Student assignments

Analyse your FLR project / an FLR project well-known to you in terms of the 12 enabling conditions:

1. To what extent do local conditions for each of the 12 categories enable / hamper the FLR intervention?
2. Are there any knock-out conditions which must be in place for your FLR intervention to be successful?
3. How can you overcome weaknesses in certain enabling conditions in your FLR project?




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Topic 3:

Designing an FLR project



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



Learning outcome:
By the end of Topic 3, students will be able to understand and design an FLR project applying the project cycle management approach involving phases such as visioning, conceptualising, acting and sustaining. In this way, FLR as an intervention into a social-ecological system becomes more transparent and manageable.

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Topic 3:

Designing an FLR project

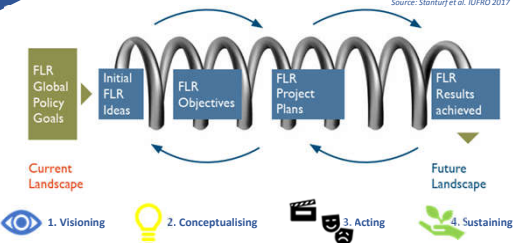
- FLR is a cyclic process with constant feedback loops between:
 - Conceptualization
 - Implementation and
 - Impact assessment of an FLR process
- This cycle may be pursued at various scales

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Topic 3:

Designing an FLR project



Source: Stanturj et al. IUFRO 2017

1. Visioning

2. Conceptualising

3. Acting

4. Sustaining

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Topic 3:

Designing an FLR project

FLR and the project cycle management framework:

- The project cycle management approach provides a useful framework for FLR to account for a constantly evolving socio-economic, political and natural environment
- FLR requires constant stakeholder engagement for planning, coordination, and adaptive management

Source: Stantur et al. IUFRO 2017

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Topic 3:

3.1 Visioning FLR

Key points to consider for an FLR vision:

- Scale
 - national or landscape
- National commitments
 - Bonn Challenge, LDN Targets, etc.
- Context
 - e.g. tenure
- Baseline conditions
 - landscape "suitability"
- Social & Ecological Goals
 - national or landscape

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Topic 3:

3.1 Visioning FLR

- Job Creation
- Alternative Livelihoods
- Ecosystem Services

Source: journal.kugapaharian.org

- Tenure
- Governance

Source: www.loveagriculture.org

- Free Prior Informed Consent
- Participatory Planning
- Co-Management

Source: FIS Peru

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Topic 3:

3.2 Conceptualising FLR

Key points to consider for conceptualizing FLR:

- Prioritize landscapes & units within landscapes
- Turn goals into objectives
- Connect starting point with the ending point
- Define the causal connection “how to get from point A to B”



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Topic 3:

3.2 Conceptualising FLR

Defining objectives for FLR:

- What is the ecosystem baseline and what are the social characteristics?
- What needs to be repaired or improved?
- What needs to be maintained or preserved?
- What are feasible interventions?

Focus on two questions:

- Do we have the conditions we want?
- Do we want a given condition?

Do we have it?	NO	Achieve	Avoid
	YES	Preserve	Eliminate
	YES	NO	
	Do we want it?		

Answering these two questions leads to four possible objectives of preserving or eliminating current conditions, or achieving or avoiding certain future conditions.

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Topic 3:

3.2 Conceptualising FLR

Example of defining project goals & objectives in the overall project context – South Pacific

	Goal	Objective	Activity
Meaning	Purpose of FLR project	Accomplishment	Activities that result in accomplishment
Measure	Not measurable/tangible	Measurable	Sequenced list of what, where, when, by whom, at what cost
Timeframe	Long-term	Short to mid-term	Short to mid-term
FLR example	Secure the unique biodiversity of Gau Island, continued provision of ecosystem goods and services from forest ecosystems and build climate change resilience	Restore 20 ha of key riparian and coastal areas around Sawaleke and Navukallagi villages	Activity.1.1 Conduct feasibility study on sites for reforestation (with communities involving Conservation officers, Provincial Office and Ministry of Forestry)

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Topic 3:

3.3 Acting FLR

Develop a detailed plan for FLR:

• What will be done

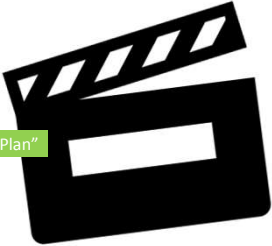
• Where will it be done?

• When will it be done?

• By whom will it be done?

• At what cost and from whose resources will it be done?

"Action Plan"




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Topic 3:

3.3 Acting FLR



Example of an action plan


Sl. No.	Action	Lead implementer	External assistance	Timeframe
1	Establish Multi Purpose Tree Nursery for 10000 seedlings	Local community	Forestry Department	December 2020
2	Carry out contour bunding on 20 ha against soil erosion	Local community	Department of Horticulture Department of Soil and Water Conservation	February 2021
3	Carry out afforestation on 150 ha	Forest Department Local community Land owners	Department of Soil and Water Conservation NGO	June 2021
4	Plant leguminous trees in shifting cultivation fallows on 15 ha	Land owners Department of Horticulture	Forest Department	June 2021
5	Establish horticulture plantation for income generation on 30 ha	Land owners Department of Horticulture	Private investors	June 2022
6	Avenue Plantation and Landscaping along 5 km of roads	Department of Roads	Forest Department Community Council	June 2021

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Topic 3:

3.3 Acting FLR



Example of defining project activities in the overall project context – South Pacific

	Goal	Objective	Activity
Meaning	Purpose of FLR project	Accomplishment	Activities that result in accomplishment
Measure	Not measurable/tangible	Measurable	Sequenced list of what, where, when, by whom, at what cost
Timeframe	Long-term	Short to mid-term	Short to mid-term
FLR example	Secure the unique biodiversity of Gau Island, continued provision of ecosystem goods and services from forest ecosystems and build climate change resilience	Restore 20 ha of key riparian and coastal areas around Sawaleke and Navukailagi villages	Activity.1.1 Conduct feasibility study on sites for reforestation (with communities involving Conservation officers, Provincial Office and Ministry of Forestry)

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Topic 3: 3.4 Sustaining FLR

Key aspects of sustaining FLR:

- Monitoring
- Adaptive management
- Evaluation
- Knowledge management
- Capacity development



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Topic 3: 3.4 Sustaining FLR



Example of sustaining in the overall project context – South Pacific

	Goal	Objective	Activity
Meaning	Purpose of FLR project	Accomplishment	Activities that result in accomplishment
Measure	Not measurable/tangible	Measurable	Sequenced list of what, where, when, by whom, at what cost
Timeframe	Long-term	Short to mid-term	Short to mid-term
FLR example	Secure the unique biodiversity of Gau Island, continued provision of ecosystem goods and services from forest ecosystems and build climate change resilience	Restore 20 ha of key riparian and coastal areas around Sawaleke and Navukailagi villages	Activity.1.1 Conduct feasibility study on sites for reforestation (with communities involving Conservation officers, Provincial Office and Ministry of Forestry)
FLR monitoring	Impact monitoring	Output monitoring	Process monitoring

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Topic 3: References and resources

- European Commission, 2004. *Project Cycle Management Guidelines*. Europe Aid Cooperation Office. 158 p. (available online at https://ec.europa.eu/international-partnerships/system/files/methodology-aid-delivery-methods-project-cycle-management-200403_en.pdf) [accessed on 27 June 2021]
- Stanturf J.A., Kleine M., Mansourian S. et al. (2017/2019/2020). *Implementing Forest Landscape Restoration: A Practitioner's Guide* (EN, FR, SP). Available at: <https://www.iufro.org/science/special/spdc/netw/flr/flr-pract-guide/>
- Stanturf J. A., Mansourian S., Darabant A. et al. (2020). Occasional Paper No. 33 - *Forest Landscape Restoration Implementation: Lessons learned from selected landscapes in Africa, Asia and Latin America*, pp 63. Available at: <https://www.iufro.org/publications/series/occasional-papers/article/2020/02/14/occasional-paper-no-33-forest-landscape-restoration-implementation-lessons-learned-from-selected/>

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Topic 3: References and resources

Example for **visioning** from Peru titled „Sustained water supply for Apurimac Region“

- <https://www.youtube.com/watch?v=T152nbRYGcM&feature=youtu.be>

• Example for **sustaining** from Ghana:

- <https://www.youtube.com/watch?v=1kcVIDEN31Q>



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Topic 3: Small group questions

1. What capacities / skills are needed for successful implementation of each of the four phases of designing and implementing FLR?
2. How would you develop an action plan for implementing your FLR project and what specifically would it contain?
3. At what stage and in which form do you need to design the monitoring component of your FLR project?
4. How can you use monitoring in adjusting the actions you implement in your FLR project?



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Topic 3: Student assignments

Design a hypothetical FLR project for your landscape along the four phases of FLR:

- Identify a vision for your restored landscape
- Define goals and objectives and think of the theory of change for your landscape
- Prepare an FLR action plan, taking into account the actions necessary to achieve the targeted objectives
- Define monitoring procedures to keep track of progress and impacts



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Topic 4:

Innovative technical restoration approaches



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



Learning outcome:
By the end of Topic 4, students will have obtained a good overview about the spectrum of technical approaches, methods and tools available to support forest landscape restoration in tropical regions.

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Topic 4:

4.1 Context: *Alternative Future Land Use for Restoring Mosaic Landscapes*

- Productive agriculture
- Mixed agroforestry with woody perennials integrated into crop and livestock systems
- Actively managed, productive forests
- Passively managed, protected forests



Source: www.globehop.org

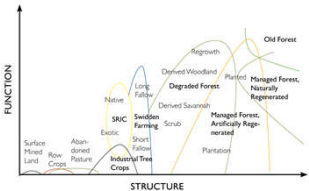
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Topic 4:

4.2 Starting Point: *Where to Begin, What to Restore?*

- Soil/site degradation
- % cover
- Species composition
- Stand or landscape structure
- Function



Source: Stanturf et al. IUFRO 2017

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Topic 4:

4.3 Passive vs. active techniques

Passive Approaches:

- Natural Regeneration
- Farmer Assisted Natural Regeneration



Source: Forest Landscape Restoration (FLR) Project Design and Implementation.

Active Approaches:


- Artificial Regeneration (planting)
 - No forest cover
 - Agroforestation
 - Afforestation
 - Degraded cover
 - Manipulate structure
 - Manipulate composition
- How much of the landscape to be treated
- Planting designs vary

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Topic 4:

4.4 Manipulating Vegetation

- Remove unwanted vegetation
- Add vegetation by passive means
 - Natural regeneration/native recolonization
- Add vegetation by active means
 - Direct seeding
 - Planting
 - Combination



Source: Forest Landscape Restoration (FLR) Project Design and Implementation.

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Topic 4:

4.5 Natural Regeneration

Positives:

- Minimizes restoration costs
- Secures locally adapted genotypes
- Promotes development of natural biodiversity

Negatives:

- Source of desired species has been eliminated or too far away
- Altered edaphic, hydrologic or climatic conditions can prevent natural establishment of regeneration
- Local genotypes may not be adapted to future climate
- Lack of activity may be misinterpreted

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Topic 4: References and resources

- Stanturf J.A., Kleine M., Mansourian S. (Eds.), (2017/2019/2020). *Implementing Forest Landscape Restoration: A Practitioner's Guide* (EN, FR, SP). Available at: <https://www.iufro.org/science/special/spdc/netw/flr/flr-pract-guide/>
- Stanturf, J.A., Kleine, M., Mansourian, S., Parrotta, J., Madsen, P., Kant, P., Burns, J., Bolte, A., 2019. *Implementing forest landscape restoration under the Bonn Challenge: A systematic approach*. *Annals of Forest Science* 76.



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Topic 4: Small group questions

1. What restoration techniques are you familiar with in your landscape context?
2. What land use / land cover types exist across your landscape and what restoration techniques can be applied on them?
3. Please analyse the financial and economic costs and benefits of natural versus artificial regeneration in your FLR context!
4. What ecosystem functions would you like to restore in your landscape and what technologies are most appropriate to achieve these?



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Topic 4: Student assignments

1. Building on the landscape analysis exercise conducted under Topic 1, and the hypothetical FLR implementation plan prepared under Topic 4, identify the best suited restoration approaches and tools for each landscape element in your landscape
2. For each restoration approach / tool, list opportunities and challenges
3. Identify how to overcome the challenges for successful implementation of each of the approaches




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Topic 5:

Monitoring short- and long-term restoration progress and impact



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



Learning outcome:
By the end of Topic 5, students will understand the rationale for monitoring FLR and be familiar with the methods and tools of cost effective monitoring. In addition, the role of monitoring in adaptive management as a means to gradually shift to more sustainable land use has been clarified.

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Topic 5:

5.1 Purpose of monitoring

- Need to keep track of progress to show success / failure
- To determine whether further action is needed
- Keep track of risks & negative impacts for mitigation
- Build on knowledge for upscaling
- Jointly generate information to build transparency & trust
- Report to investors
- Communicate results

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Topic 5:

5.2 Monitoring in FLR

Forest Landscape Restoration:

- Slow – long-term
- Dispersed – trees in pockets of landscape
- Diverse goals – complex social-ecological systems

Need innovative approaches for monitoring, conventional forest monitoring won't do

Source: Stanturf et al. 2019; WWF 2019

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Topic 5:

5.2 Monitoring in FLR

FLR monitoring scales

National / regional level FLR monitoring

FLR project monitoring

- Bonn Challenge commitment reporting
- National strategic priorities tracking
- Strategic allocation of resources
- Strategic spatial planning

- Achievement of local priorities
- Process monitoring
- Impact monitoring
- Accountability towards funders
- Tool for adaptive management

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Topic 5:

5.3 National level in FLR monitoring

Example: IUCN Bonn Challenge Barometer

Monitors progress in terms of:

- Policies & institutions
- Financial flow
- Technical planning
- Restoration monitoring
- Capacity assessment
- Hectares under restoration
- Climate mitigation
- Biodiversity impacts
- Socio-economic impacts

1

Policies and legal frameworks that help create an enabling environment for FLR and mobilise funding to support and scale-up restoration

2

Technical capacities to plan, implement, and monitor restoration

3

On-the-ground progress in restoring degraded land

Source: IUCN 2017

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Topic 5:

5.4 Project monitoring in FLR

Capture results at different spatial and temporal scales:

Type	Contents
Impact Monitoring	Achievement of social, economic & ecological goals & objectives, including changes of biophysical conditions frequently based on surveys
Process Monitoring	Keeping track of implementing on-going project activities e.g. of implementing annual work plan

Goal

Objectives

Outcomes

Outputs

Inputs / activities

1

Results Chain

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Topic 5:

5.5 FLR Project Monitoring & RBM

- Monitoring integral part of project implementation
- Takes place continuously throughout project management cycle
- Informs adaptive management

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Topic 5:

5.5 FLR Project Monitoring & RBM

	Goal	Objective	Plan
Definition	Purpose of FLR project; not measurable; long-term	Accomplishment; measurable; mid-term	Activities; list of actions; short-term
FLR Example 1	Restore degraded land along river basin	20 m buffer along rivers	Plant 100 ha of native species along rivers in Kigali province by end of 2022 by local farmers
FLR Example 2	Increased forest cover	3000 ha of new forest established	Plant 100 ha <i>Entandophragma excelsum</i> in block mixture in Kigali province by 2023
FLR monitoring type	Impact monitoring	Impact monitoring	Process monitoring

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Topic 5:

5.6 Monitoring of FLR projects

Strategic monitoring integral part of FLR - informs adaptive management:

- Agree on goods and services that forests should provide (impacts)
- Identify what to monitor (develop criteria related to objectives)
- Define indicators / metrics
- Establish baseline & define targets
- Establish threshold points where further intervention is needed (e.g. seedling survival)
- Develop a sampling design (measure indicators of the selected criteria)
- Collect data and analyze
- Evaluate results and communicate to stakeholders
- Re-evaluate the process for guiding future efforts – adaptive management

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Topic 5:

5.7 Operationalization of monitoring

Steps to identify priorities & indicators for FLR monitoring:

1
Why Restoration?

2
Which Land Use?

3
Which Barriers to Sustainability?

4
Which Constraints & Priorities?

5
Which Data?

6
Which Indicators and metrics?

7
What Index?

DETERMINE Goals, Land Use, and Barriers

FILTER by Constraints, Priorities, and Data Availability

SET UP system based on Indicators, Metrics and Optional Index

- Goals & objectives must be clear
- Data availability, costs, human & technological constraints must be assessed
- Indicators to be defined – need to be “SMART”

Specificity

Measurability

Attainability

Realism

Time Bound

S

M

A

R

T

Source: WRI 2019

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Topic 5:

5.8 Key FLR monitoring lessons

- Explicitly state the objectives of monitoring
- Engage stakeholders in design & implementation of monitoring
- Provide adequate funding
- Collect only as much data as needed and will be used for analysis
- Use results to influence management decisions (i.e., adaptive management framework)
- Don't get confused with the many proposed frameworks out there – learn from them and devise the best for your situation!

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Topic 5:

References and resources

- *Restoration Opportunities Assessment Methodology (ROAM)*. Available at: <https://www.iucn.org/theme/forests/our-work/forest-landscape-restoration/restoration-opportunities-assessment-methodology-roam>
- *Forest Landscape Assessment Tool (FLAT)*, a set of tools for determining ecological conditions and potential threats to forest ecosystems. Available at: <https://www.treeseearch.fs.fed.us/pubs/53245>
- Stanturf J.A., Kant P., Lillesø J.-P.B., Mansourian S., Kleine M., Graudal L. and Madsen P., 2015. *Forest landscape restoration as a key component of climate change mitigation and adaptation*. Vienna: IUFRO World Series Volume 34. 72 p.
- <https://files.wri.org/d8/s3fs-public/mapping-together.pdf>

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Topic 5:

Small group questions

1. Can you list a few examples of SMART indicators?

2. How would you approach designing the monitoring framework for your FLR project?

3. What are examples for impact indicators in your FLR project?

4. What are examples for process indicators in your FLR project?



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Topic 5:

Student assignments

1. For your hypothetical FLR implementation plan prepared under Topic 4, define a list of SMART indicators to keep track of the achievement of objectives.

2. For each indicator, define the mode and frequency of their measurement



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Module 2:

Credits

Module 2 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.

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