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The topic of presentation is

- Keynote presentation 3: UN Decade for Ecosystem Restoration 2021- 2030: Best Practice Approaches in Forest-related Ecosystem Restoration



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Best Practices Approaches in Forest-related Ecosystem Restoration

Key-Note Presentation 3

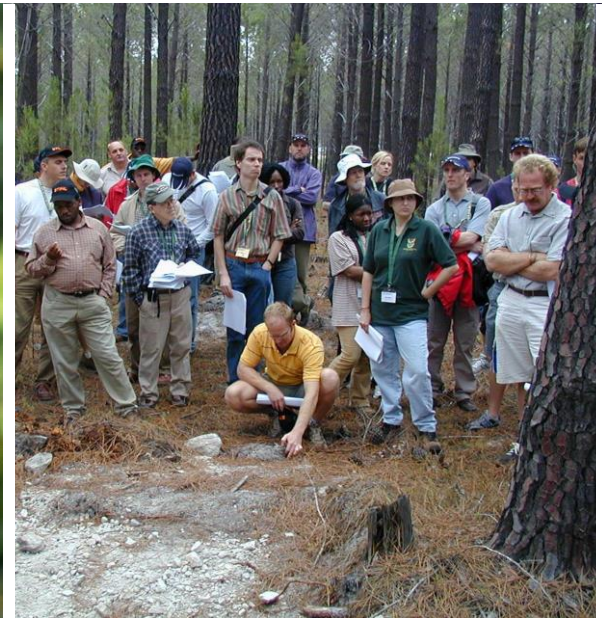
by Michael Kleine (IUFRO)

AFoCo-ITTO Capacity Building Workshop on Forest Landscape Restoration
in the Asia-Pacific Region

31 August 2021

IUFRO's Mission

IUFRO advances **research excellence** and **knowledge sharing**, and fosters development of **science-based solutions** to forest-related challenges for the benefit of forests and people worldwide.



What is IUFRO ?



IUFRO is a global, non-profit, non-governmental and non-discriminatory scientific organization.

~ 15,000 scientists

~ 600 member organizations

~ 120 countries

~ 600 voluntary officeholders

~ 250 research units

~ 70 meetings/year

IUFRO is open to all individuals and organizations dedicated to research related to forests and forest products.

IUFRO was founded in 1892 and is based in Vienna, Austria. It is a member of the International Science Council, ISC.

Land Degradation



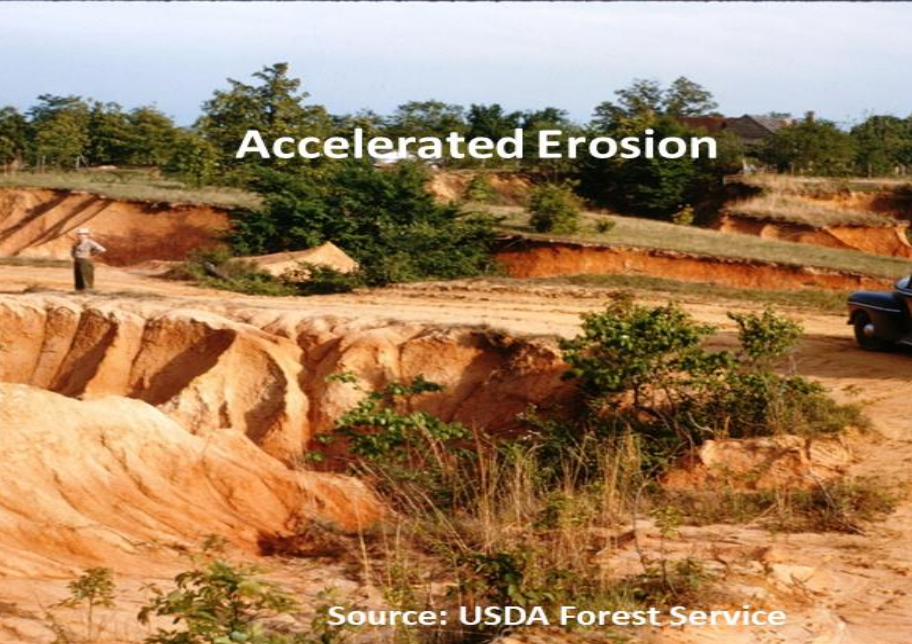
Altered Fire Regime

Source: Thomas Waldrop, USDA Forest Service



Livestock

Source: Doug Maguire, Oregon State University, BugWood.org



Accelerated Erosion

Source: USDA Forest Service

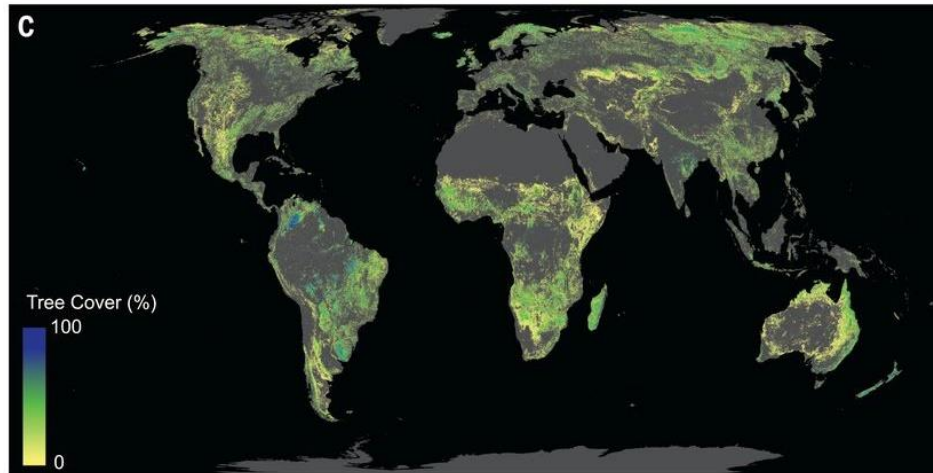


Invasive Vegetation

Source: John A. Stanturf

Rationale for Restoration

- Restoration as a global answer to address
 - Climate Change - Paris Agreement
 - Biodiversity loss - Aichi Target 15
 - Land degradation - LDN targets
 - Socio-economic impacts - SDGs
- Large areas theoretically available for restoration



Source: Robin Chazdon & Pedro Brancalion, Science 05 July 2019

Debate over Concepts

Ecosystem Approach

CBD describes this as a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way....it also recognises that humans with their cultural diversity are an integral part of many ecosystems

(<https://www.cbd.int/ecosystem/description.shtml>)

Nature-based Solutions (NbS)

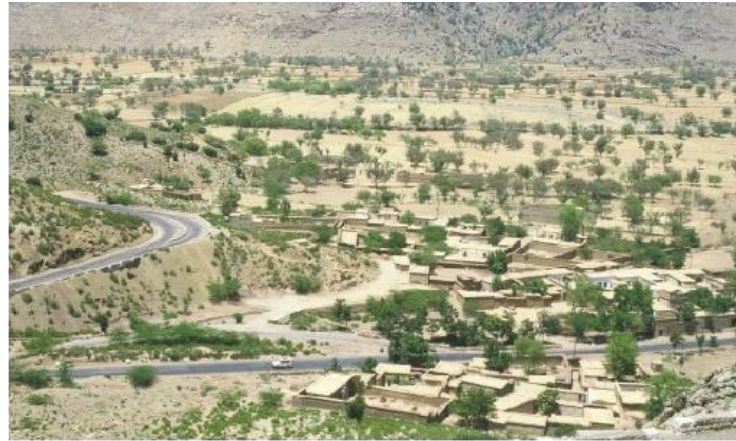
IUCN defines NbS actions to protect, sustainably manage and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human wellbeing and biodiversity benefits

(<https://portals.iucn.org/library/sites/library/files/documents/2016-036.pdf>)

Purpose

To ensure a socially just, climate neutral and nature-positive world

Forest Landscape Restoration



“Intervention into a social-ecological system”

FLR as a global movement

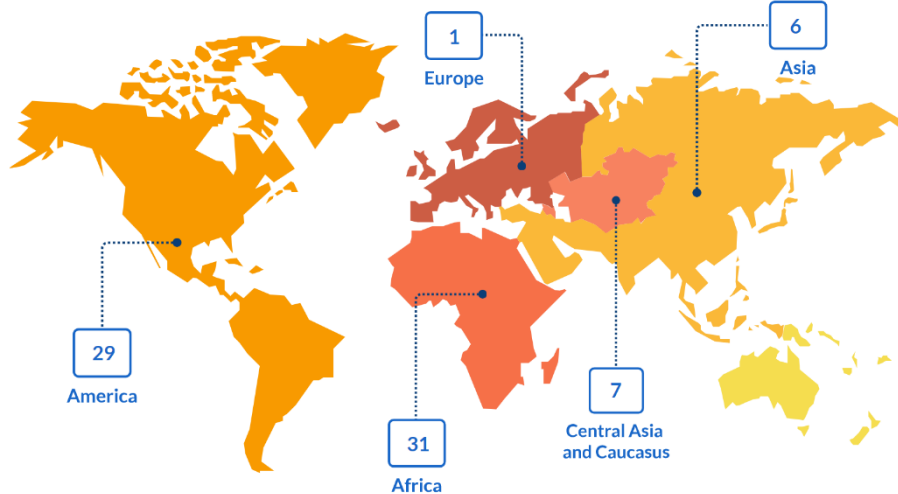
- Bonn Challenge: Global commitment to restore 150 million ha by 2020 and 350 million ha by 2030
- Regional offsprings in Africa & Asia
- IUCN Bonn Challenge Barometer lists 22 countries, identifying 45 Million hectares under restoration



Examples of Initiatives

Map of pledges

Countries involved **61** Pledges made **74**



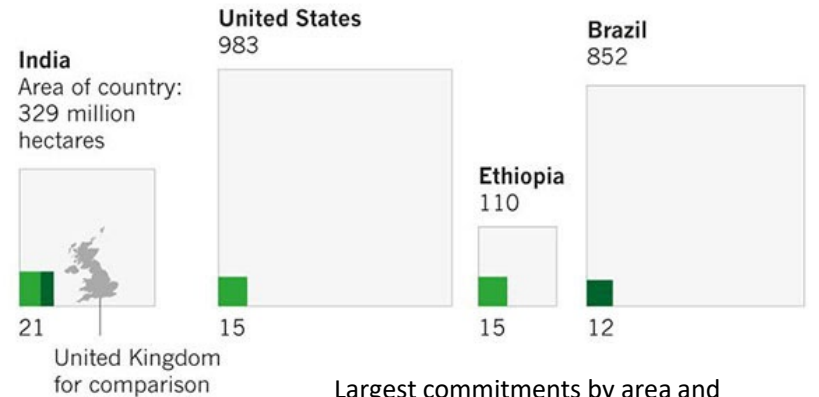
Source: bonnchallenge.org, accessed 20.10.2020

Regional Initiatives

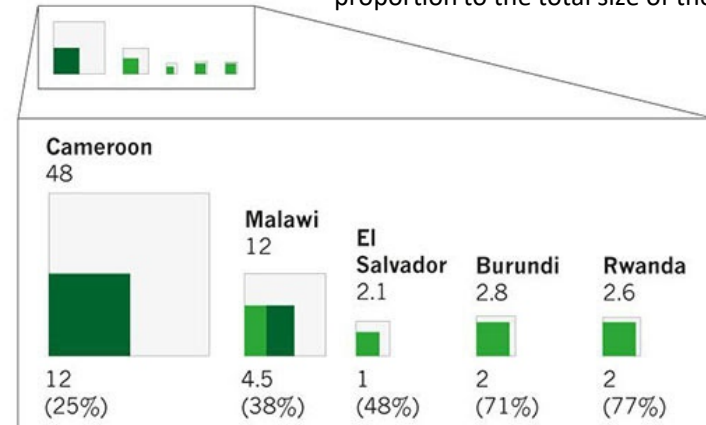
- LAC 20x20
- AFR 100
- Agadir
- Asia Pacific
- Astana

BONN CHALLENGE PLEDGE:

■ 2020 ■ 2030



Largest commitments by area and proportion to the total size of the country



Source: Rachel Cernansky, Nature (Sources: World Resources Institute and <http://www.bonnchallenge.org/commitments>), 2018

©nature

Forest Landscape Restoration



VIDEO

Landscape Academy

(Global Landscape Forum, Wageningen University & Research, UN Environment)

International Union of Forest Research Organizations • www.iufro.org

Forest Restoration



Source: Janice Burns, IUFRO

Forests

Increases forest/tree cover,
enriches structure &
composition and addresses
degradation

Landscape



Source: Echecopar, Global Comparative Study on Redd+,
cifor.org

Landscapes

captures watersheds &
jurisdictions incl. land use
mosaics



Source: Janice Burns, IUFRO

Restoration

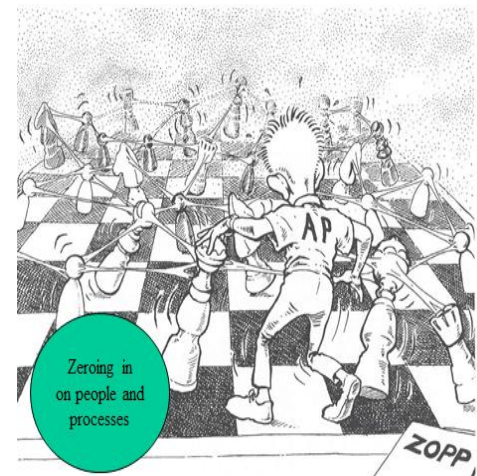
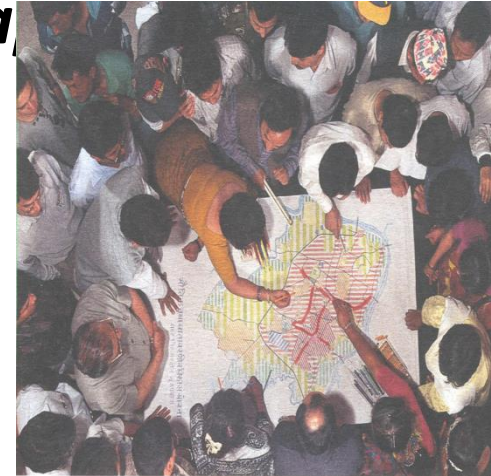
brings back the biological
productivity & sustains
ecosystem services

FLR:

A planned process that aims to regain ecological integrity and enhance human well-being in deforested or degraded landscapes

Principles of a landscape approach

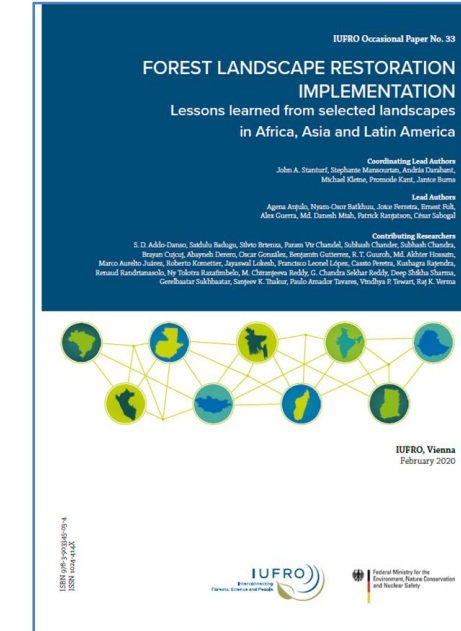
- Continual Learning and Adaptive Management
- Common Concern Entry-Point
- Multiple Scale
- Multi-Functionality
- Multi-Stakeholder
- Negotiated and Transparent Change Logic
- Clarification of Rights and Responsibilities
- Participatory and User-Friendly Monitoring
- Resilience
- Strengthened Stakeholder Capability



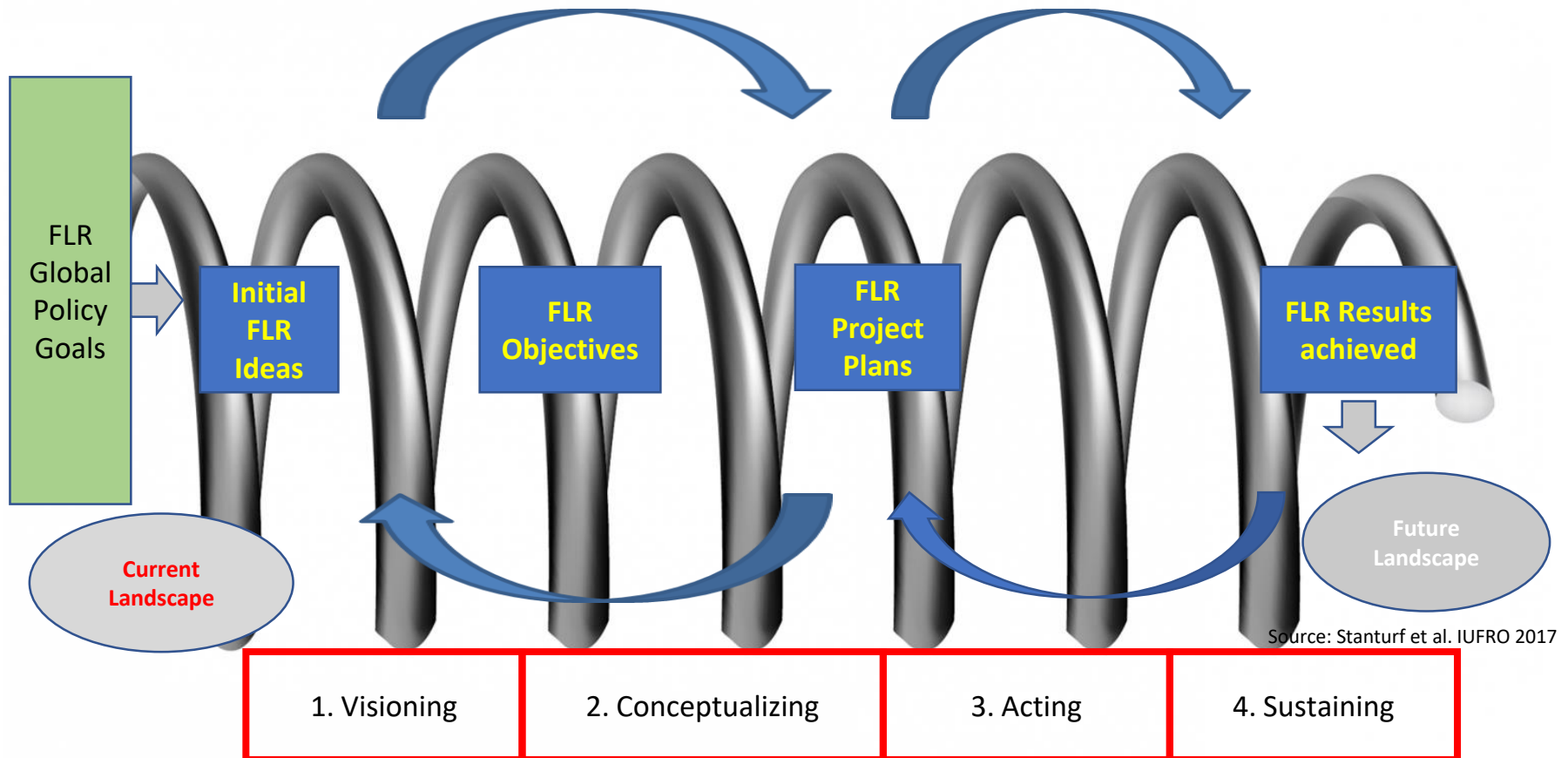


Source: Michael Kleine

FLR is more than just planting trees – it is restoring a whole landscape to meet present and future needs and to offer multiple benefits and land uses over time



The FLR Process

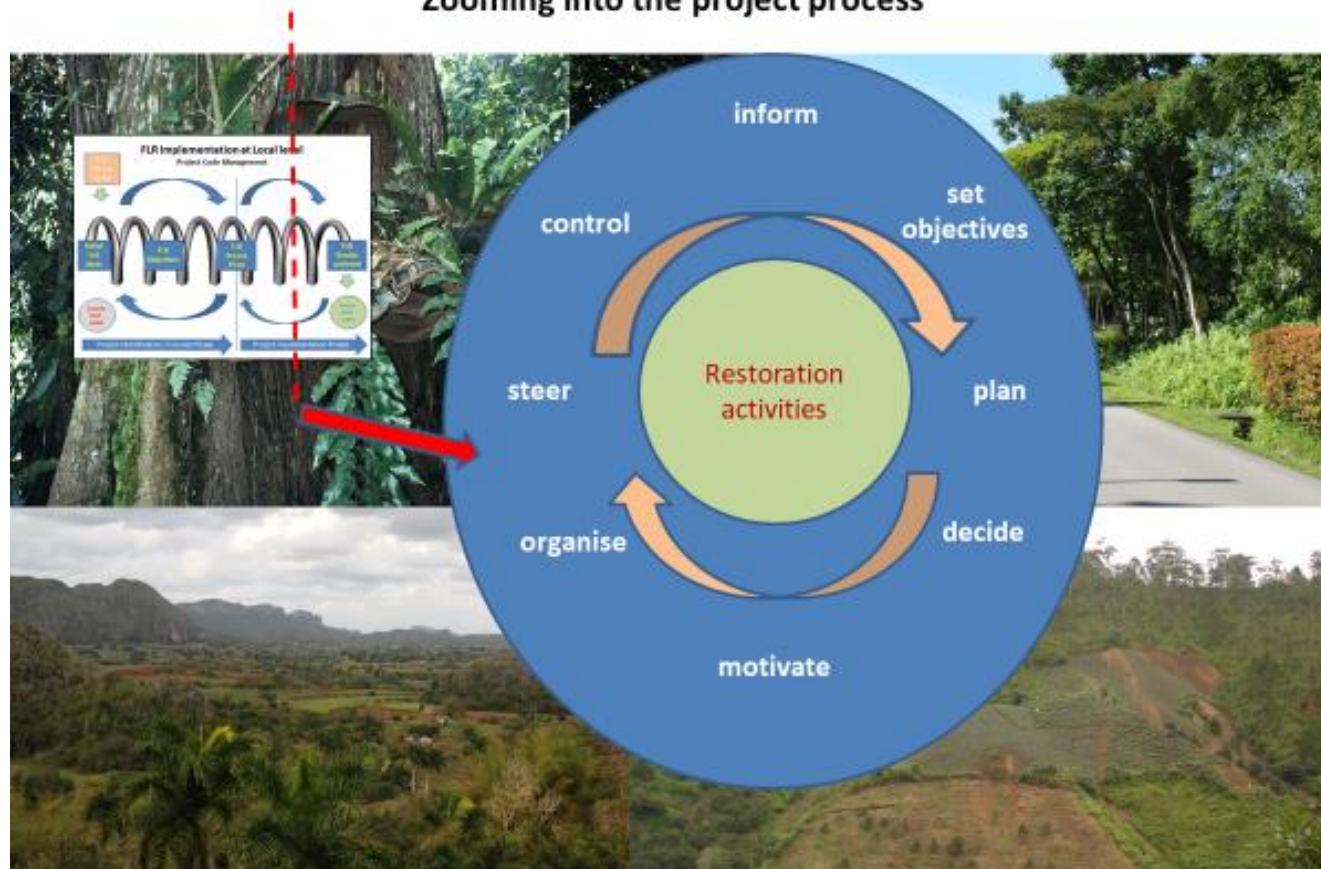


- FLR is a cyclic process with constant feedback loops between conceptualization, implementation and impact assessment of an FLR process
- This cycle may be pursued at various scales

The FLR Process

FLR Implementation at Local Level

Zooming into the project process



Phases of designing and implementing FLR



1. Visioning

national or landscape-level goals



1. Conceptualizing

local objectives



1. Acting

plans & activities



1. Sustaining

monitoring & managing



Visioning in 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



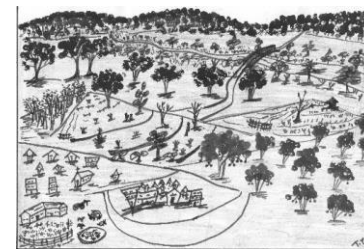
Source: A. Darabant

Shared motivation for
restored landscapes



Source: A. Darabant

Common understanding of FLR



Source: Y. Lotha

Common vision of the restored
landscape



Social Goals & Context of FLR

- Job Creation
- Alternative Livelihoods
- Ecosystem Services



Source: journals.openedition.org

- Tenure
- Governance



Source: Kelly Lacy, Pexels.com



Source: Binyamin Mellish, Pexels.com

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



Source: FZS Peru

Conceptualising FLR



Key points to consider for conceptualizing FLR

- Prioritize landscapes & units within landscapes
- Turn goals into local objectives
- Connect starting point with the ending point
- Define the causal connection “how to get from point A to B” (“Theory of Change”, “change logic”, etc.)

Defining Local 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.

Source: Stanturf et al. IUFRO 2017

Acting



Develop a detailed plan for FLR

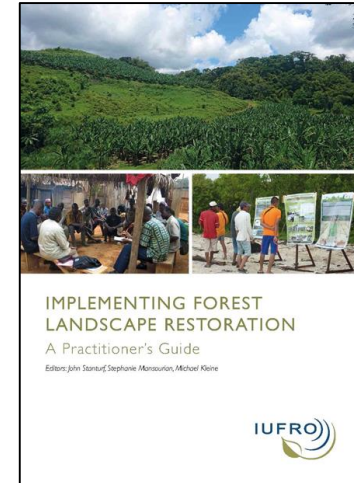
- What will be done
- Where will it be done?
- When will it be done?
- By whom will it be done?
- At what cost and from whose resources will it be done?

“Action
Plan”

Negotiated Change Logic



- 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



Source: IUFRO, 2017



Source: A. Darabant

Results-Based Management in FLR



	Goal	Local 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 Sawaieke and Navukailagi villages	Activity.1.1 Conduct feasibility study on sites for reforestation (with communities involving Conservation officers, Provincial Office and Ministry of Forestry)

Results-Based Management in FLR

Project name: Growing Trees to Build Climate Change Resilience in Two Coastal Communities on Gau Island, Fiji

Fiji Government Goal: 30 Million Trees in 15 Years Initiative – Fiji Government announced in 2020 to increase the 4 Million Tree Initiatives goal to plant 30 million trees in the next 15 years		
Goal	Local Objective	Activity
Secure the unique biodiversity of Gau Island, continued provision of ecosystem goods and services from forest ecosystems and build climate change resilience	Restore twenty hectares (20 HA) of key riparian and coastal areas around Sawaieke and Navukailagi villages	Activity.1.1 Conduct feasibility study on sites for reforestation (with communities involving Conservation officers, Provincial Office and Ministry of Forestry)
		Activity 1.2 Set up Mangrove nurseries and Forest nurseries
		Activity 1.3 Conduct seed collection, seed propagation and nursery management training
		Activity 1.4 Implement planting and monitoring plan at the targets
	Build capacity and partnership with project stakeholders on how to maintain, manage and expand riparian vegetation systems and mangrove ecosystems	Activity.2.1 Develop management plan with the local community
		Activity.2.2 Communities sign off on the time-bound management plan for the reforested areas

Sustaining

Key aspects of sustaining FLR

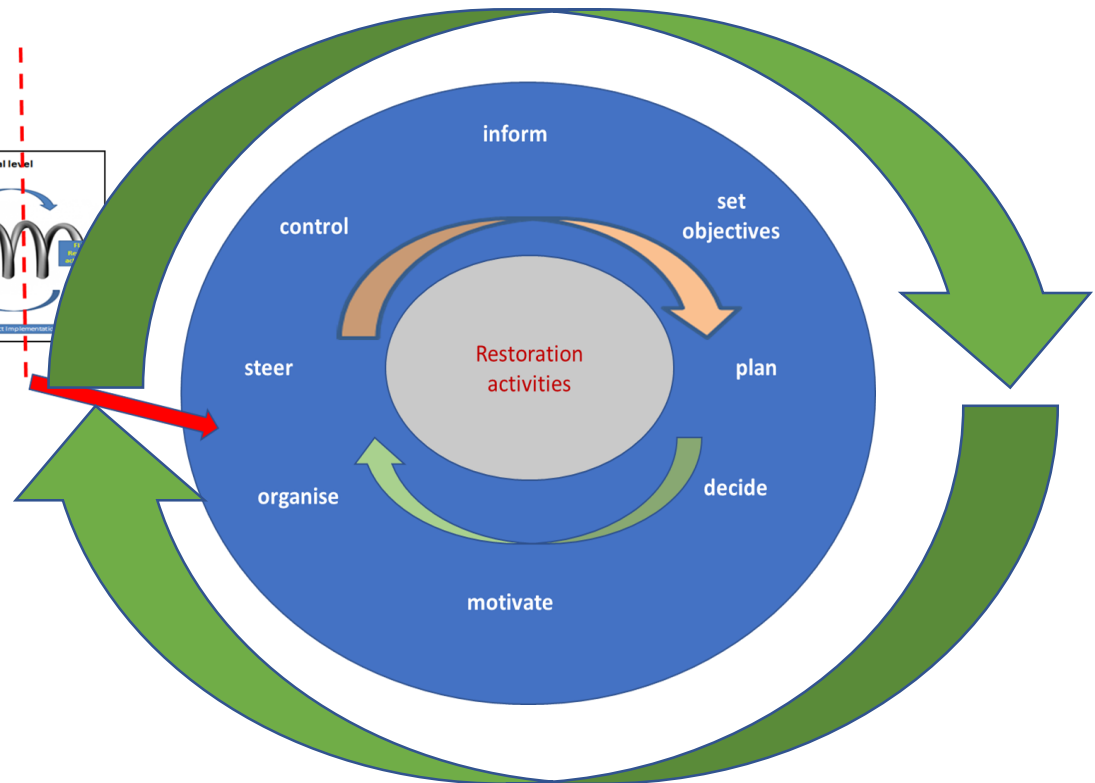
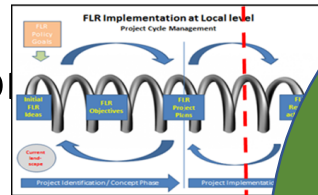
- Monitoring
- Adaptive management
- Evaluation
- Knowledge management
- Capacity development





FLR Project Monitoring & RBM

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



FLR Project Monitoring & RBM



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FLR monitoring	Impact monitoring	Output monitoring	Process monitoring



Monitoring of FLR projects

Strategic monitoring integral part of FLR: informs adaptive management

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

Source: Stanturf, WWF, 2006



Long-Term Planning

- Create a Management Plan
 - Future interventions (e.g., thinning)
 - Monitoring
 - Benefit sharing?
- Document activities
 - Geo-reference activities
 - Photo points
- Archive Data
 - Access control
 - Storage in multiple locations





Enabling Environment for FLR

Synthesized list of enabling conditions for FLR

Engagement for common interests

1. Shared motivation & vision
2. Stakeholder engagement
3. Economic viability

Clear rules

4. Clear and secure tenure
5. Enabling policy & regulatory framework
6. Effective governance

Focus on landscapes

7. Landscape approach
8. Landscape suitability for FLR

Available knowledge and capacities

9. Accessible & efficient knowledge base
10. Adequate capacities

Change management

11. Negotiated change logic
12. Flexible approach incorporating new learning

Stakeholder Engagement in FLR



Potential FLR stakeholders

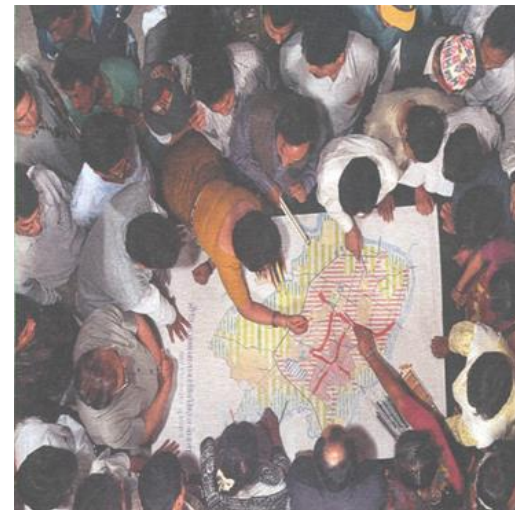
- Government organizations in charge of land and natural resources
 - Forest department
 - Land management department
 - Revenue department
 - Agriculture department
- Local communities & representatives
- Land owners
- Territorial administration
- Research & academic institutions
- NGOs



Stakeholder Engagement in FLR



- Stakeholders have different objectives
 - Conflicts may arise
 - Participation is key to success
-
- Institutionalized platforms for engagement to negotiate, plan, implement & monitor FLR
 - Challenge:
 - Different power relationships
 - Difficulties to engage certain types of stakeholders
 - Different knowledge types
 - Different planning horizons





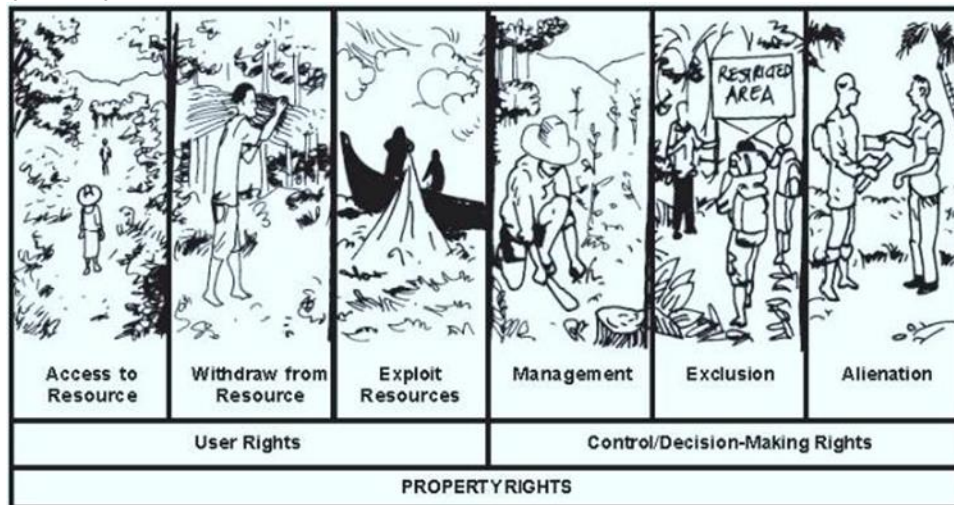
Economic Viability of FLR

- 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



Clear and Secure Land Tenure

Land tenure is the relationship, whether legally or customarily defined, among people, as individuals or groups, with respect to land (FAO)



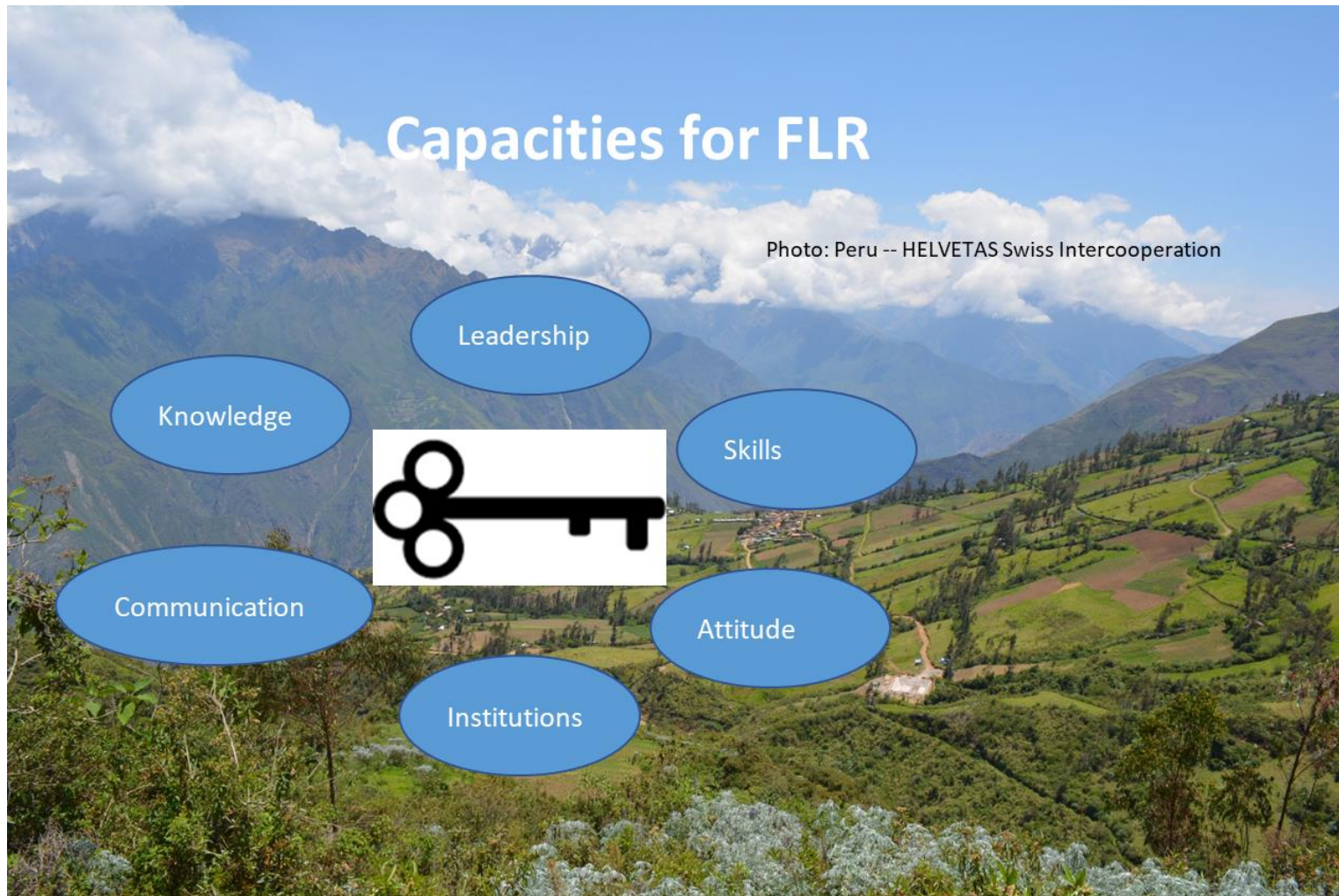
Land & resource rights:

- Who can enter?
 - Who can use?
 - Who can decide what to do?
 - Who can keep others out?
 - Who can sell/rent?
- What is the duration of rights?
 - How secure are the rights?
- Are there differences between customary and legal tenure?

Enabling Policy and Regulatory Framework

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 (and sustainable land use) • 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

Capacities for FLR



System-wide Restoration Capacity

CAPACITY DEVELOPMENT

Individual Capacities

Awareness / Understanding,
Knowledge/ Skills / Attitudes

Organizational Capacities

Coordination mechanisms (horizontal and vertical) / Networks / Mandates / Multi-Sectoral and Stakeholder Dialogue/ Collective Action



IMPACT

Enabling Environment

Governance (formal and informal)/ implicit and explicit rules / laws and policies / incentives and investments / institutional political economy

Field Implementation / Upscaling

Best land use practices and approaches based on new and indigenous knowledge, co-developed by stakeholders

Source: Adapted from Kalas et al. 2021

Capacities for FLR

Participation of all stakeholders at all levels is critical to the implementation of FLR. Not all stakeholders, however, have the requisite knowledge, resources or systems in place to fully participate and commit to long-term involvement in the transition towards a future non-degrading land use providing more benefits to people and nature.

Forms of Capacity Development include:

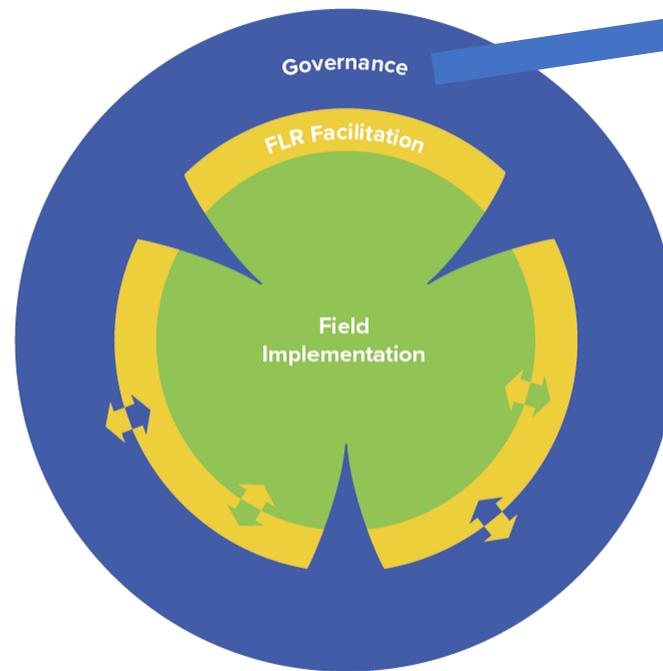
- Multi-stakeholder platforms at local level,
- Technical training (e.g. Farmer's Field Days),
- Field practice in tertiary education
- Awareness raising among policy makers and investors
- Mentorship programmes for FLR Facilitators



Capacities for FLR

Governance space in FLR

- Fundamental to creating the long-term enabling conditions for FLR
- Local to international levels
- Comprised of actors and institutions involved in decision-making

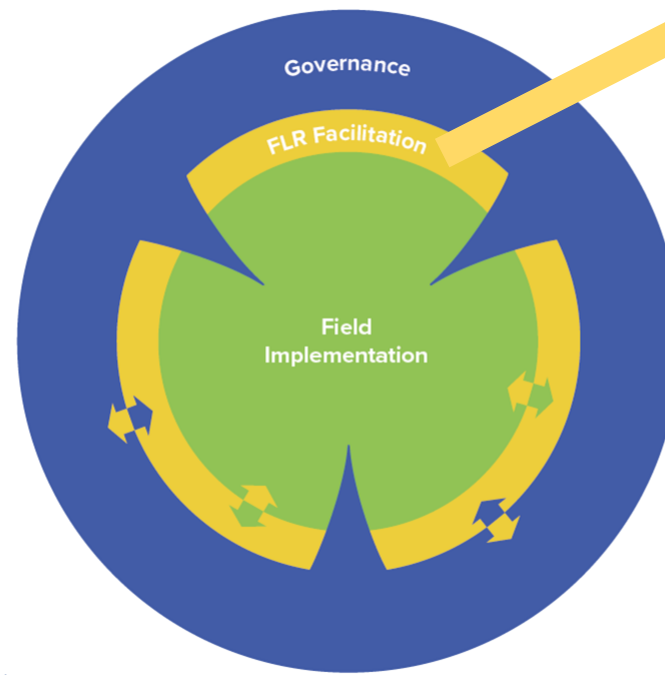


Source: iufro.org

Capacities for FLR

Facilitation space in FLR

- Critical intermediary to leverage change
- FLR facilitation requires landscape leadership skills
- Mentorship programs for FLR facilitators useful

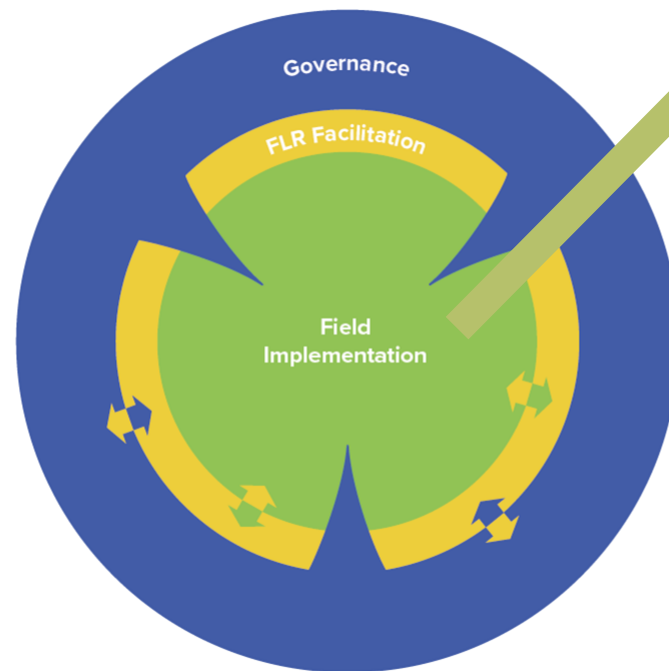


IUFRO Forest Landscape Restoration (FLR) Facilitation and Capacity Development.

Capacities for FLR

Field implementation space in FLR

- Various stakeholders act to restore landscapes
- Role, interest and preferences of local stakeholders are fundamental
- Incentives must outweigh disincentives



Source: iufro.org

Towards Sustainable Landuse

- Transformation to more sustainable land use takes time
- FLR process as best practice can contribute to developing a bio-based circular economy
- Capacity development is important – for different target groups
- Understanding and accommodating the plurality of local aspirations is key to achieving global restoration goals.



Conclusions



- Restoration is an intervention into a social-ecological system
- Debates over concepts should not prevent swift and decisive action on the ground
- Restoration is not an end in itself, but a means to achieving resilient landscapes that are beneficial to people and nature
- Restoration actions at all levels must contribute to building a socially just, climate neutral and nature-positive world

Thank you for your attention

