Botanic Gardens Conservation International

The world's largest plant conservation network

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Module 1: Planning forest restoration




Aims of the module

- How forest restoration differs from reforestation
- The different approaches which can be used
- The policy context surrounding restoration of forests
- How to engage appropriate stakeholders in a restoration project
- Target setting for restoration projects
- Using adaptive management to design restoration treatments
- The importance of incorporating monitoring into the planning phase

What is forest restoration?

Forest restoration is “actions to re-instate ecological processes, which accelerate recovery of forest structure, ecological functioning and biodiversity levels towards those typical of climax forest”

(Elliot *et al*. 2013)

i.e. the end stage of natural forest succession

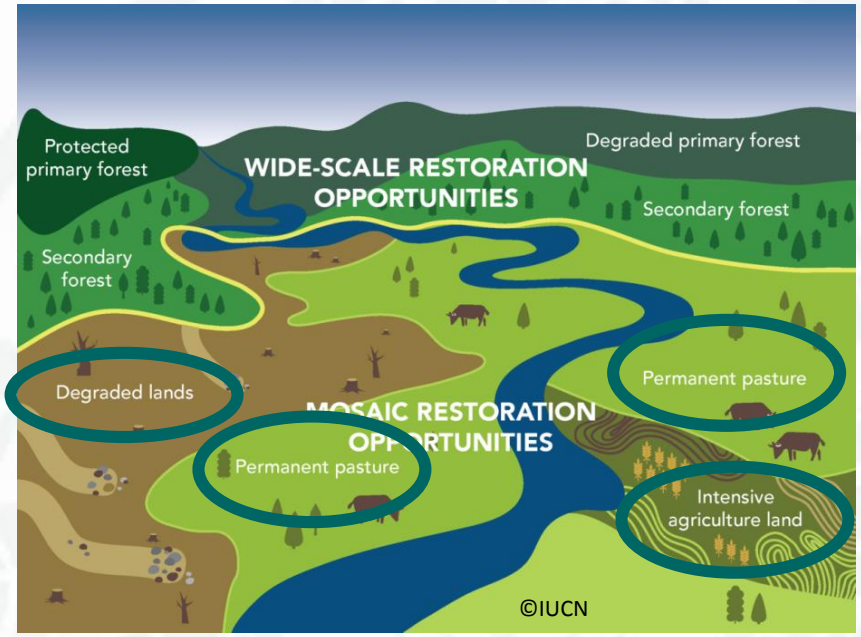
Restored forest in 2013

What is forest landscape restoration?

Forest landscape restoration (FLR) is "the ongoing process of regaining ecological functionality and enhancing human well-being across deforested or degraded forest landscapes"

(IUCN)

- Needs to **complement** and **not displace existing land uses**
- Resulting landscape will often be a **mosaic of different land uses**



Commitments to forest restoration

BONN CHALLENGE

- A global effort to restore 150 million ha of degraded/deforested land by 2020 and 350 million ha by 2030.

Target 15 of the Aichi Biodiversity Targets

- Aims to restore at least 15% of degraded ecosystems by 2020.

Target 15.2 of the Sustainable Development Goals

- Aims to restore degraded forests and substantially increase afforestation and reforestation globally by 2020.

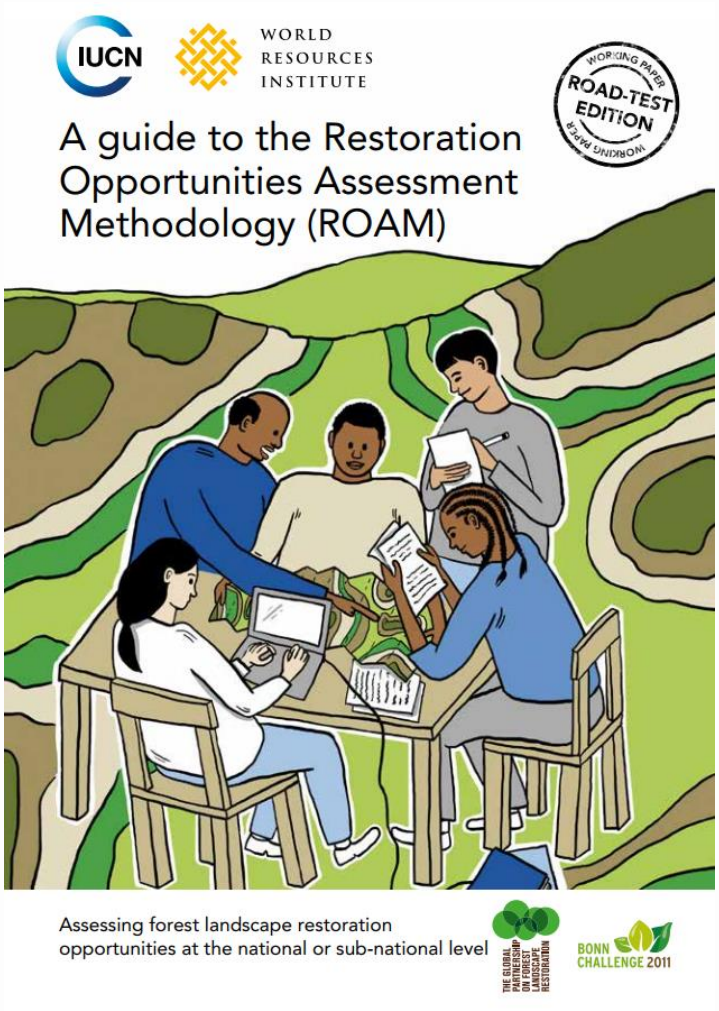
Restoration Opportunities Assessment Methodology (ROAM)

Developed by IUCN and the World Resource Institute to provide a starting point for people interested in undertaking FLR.

Outputs can include:

- Economic cost & benefits of FLR
- Type of FLR interventions
- Scope & availability of land for FLR
- Analysis of the funding options and policy instruments for restoration
- Diagnostic of the presence of key success factors

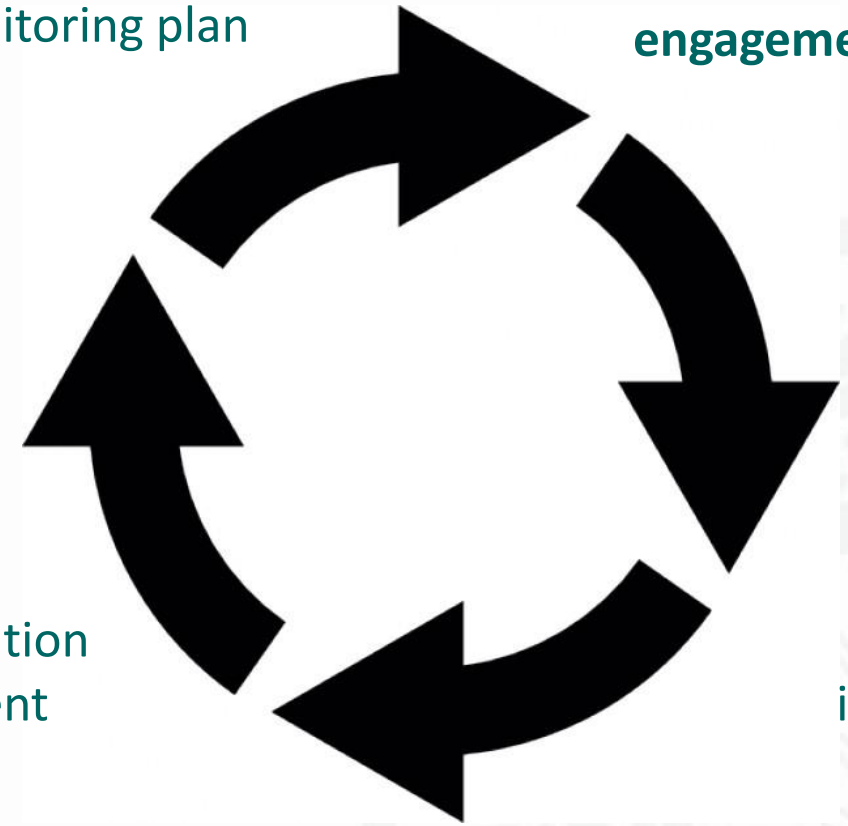
Restoration Opportunities Assessment Methodology (ROAM)



Benefits:

- Improved land-use decision-making
- Mobilisation of high-level political support
- Inputs to national commitments for forest restoration
- Shared understanding of FLR opportunities
- Leverage funding for restoration

Restoration planning overview



1. Stakeholder engagement

2. Baseline survey of restoration site/site to be restored

3. Reference forest identification & survey

4. Targets, goals and objectives

5. Restoration treatment

6. Resource analysis

7. Monitoring plan

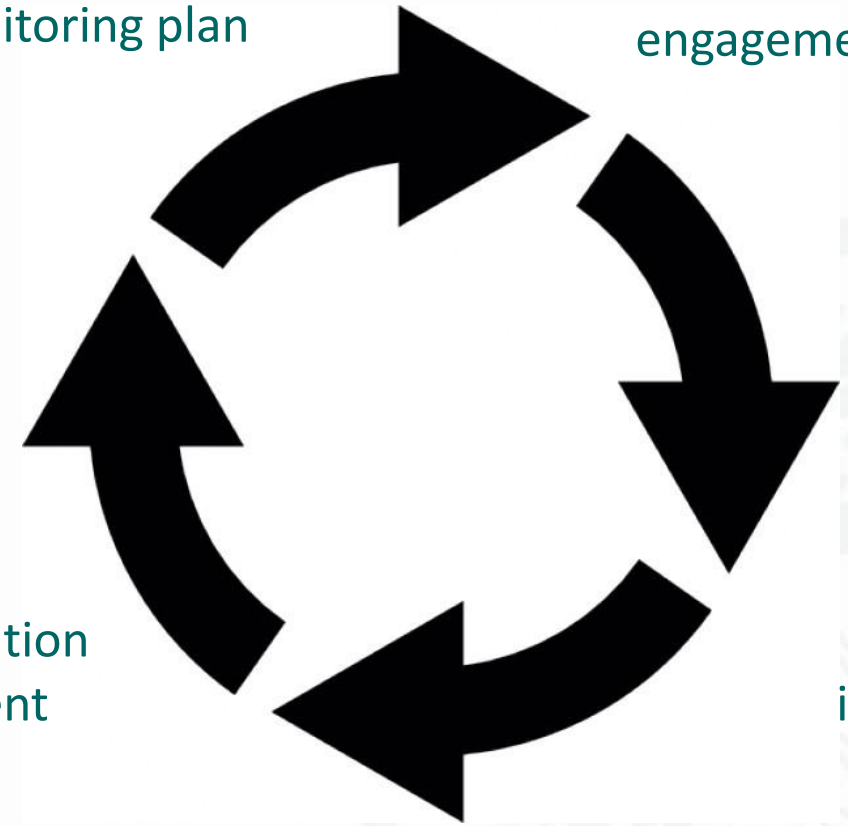
Step 1: Who are the stakeholders?

People interested or affected by the proposed restoration activity and can be directly or indirectly involved in the decision making process.

Benefits of a stakeholder analysis:

- ✓ Identification of key project participants
- ✓ Platform for different opinions to be voiced
- ✓ Opportunity to identify and resolve potential conflicts early

Restoration planning overview



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Step 2: Restoration site baseline inventory

Should include:

- Species composition
- Abiotic conditions
- Resilience of biota
- Extent of degradation, damage or destruction
- Threats and how to eliminate, mitigate or adapt to them

Will help you to determine which restoration approach is most suitable for your site

Step 2: Degree of degradation

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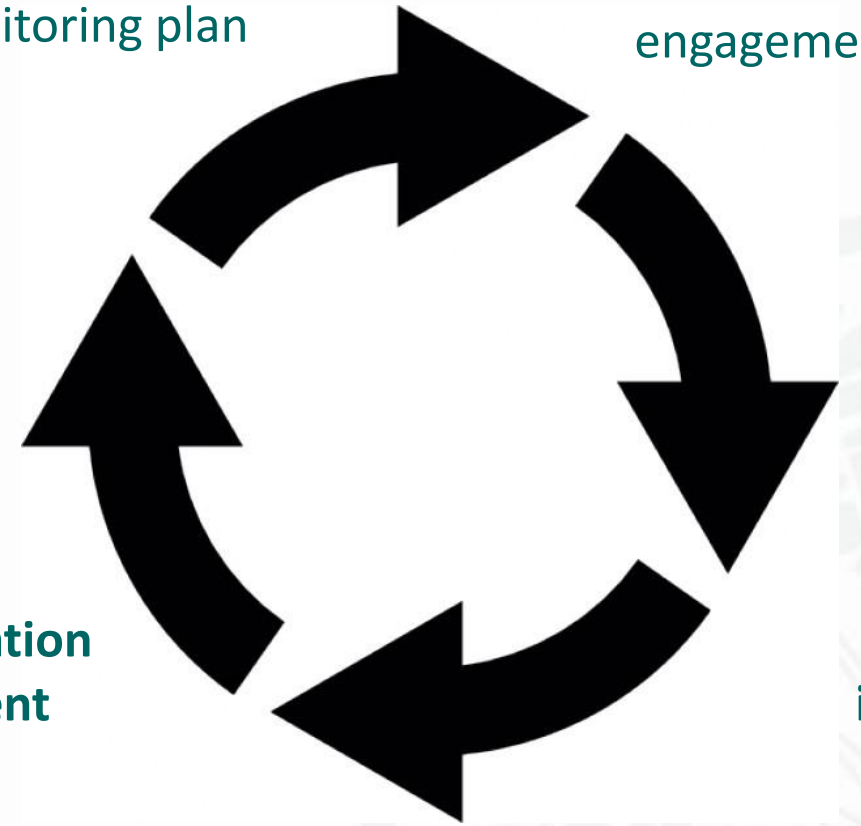
Restoration planning overview



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Step 3: Reference forest identification & survey

Is an indigenous local reference ecosystem available?

YES

Conduct an **ecosystem assessment** to include:

- Forest species composition
- Forest structure
- Forest function

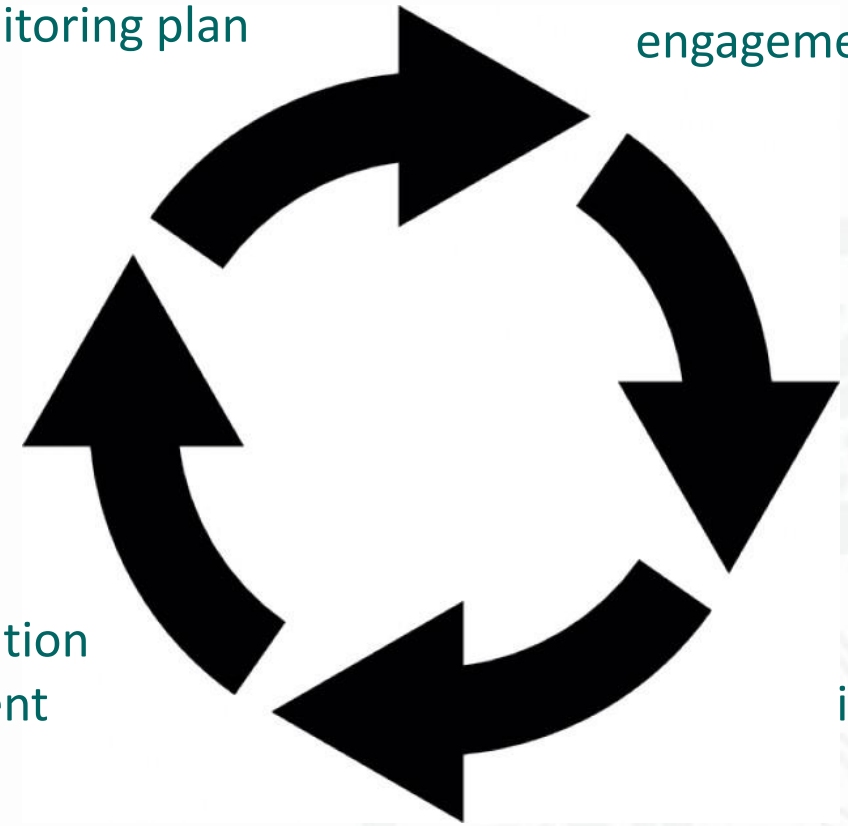
NO

Create a **conceptual model** using:

- Reference sites
- Historical and predictive species records

The more you know about the indigenous reference ecosystem – the greater the chance of restoration success!

Restoration planning overview



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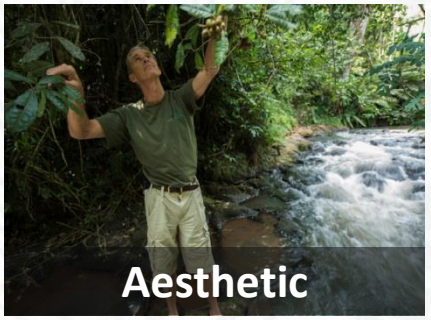
Step 4: Targets, goals and objectives

Restoration goals and targets must be **clearly defined** and can be translated into **measurable objectives.**

Possible restoration goals include:



SMART TARGETS

S - Specific
M - Measurable
A - Achievable (or *Attributable*)
R - Relevant (or *Realistic*)
T - Time-bound

SMART targets

Starting point: Species survival rates increased

S – Specific

Survival rate of *Ficus sur* planted at the restoration site increased

M – Measurable

Percentage survival rate of *Ficus sur* planted at the restoration site **at least 99%**

A – Achievable

Percentage survival rate of *Ficus sur* planted at the restoration site **at least 80%**

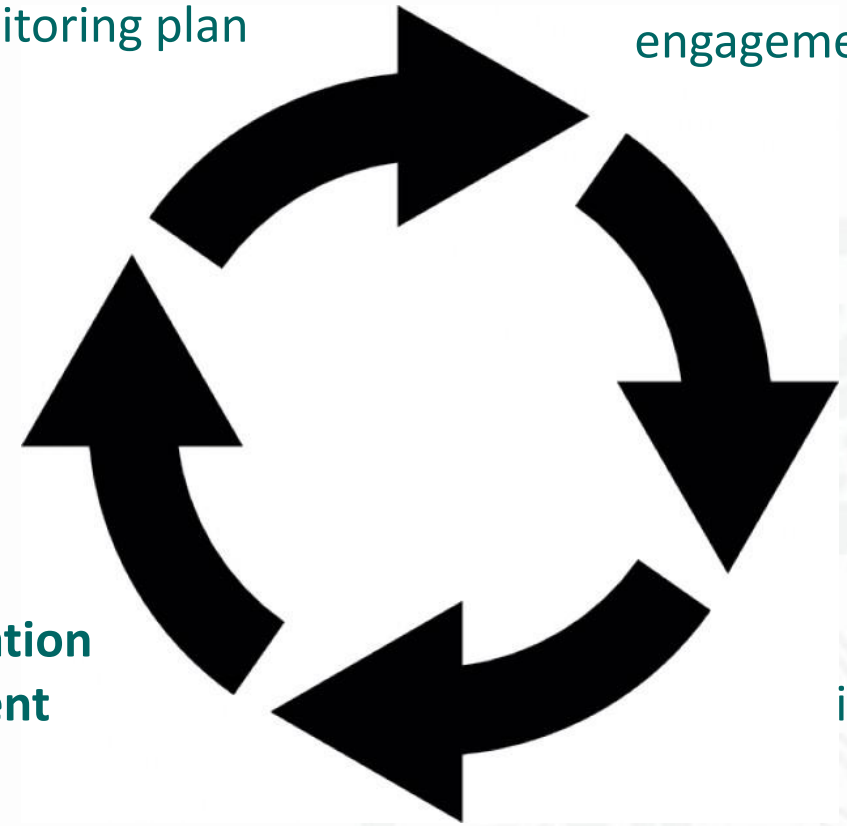
R – Relevant

Is this target relevant to the overall aim of the project?

T – Time-bound

Percentage survival rate of *Ficus sur* planted at the restoration site at least 80% **1 year after planting**

Restoration planning overview



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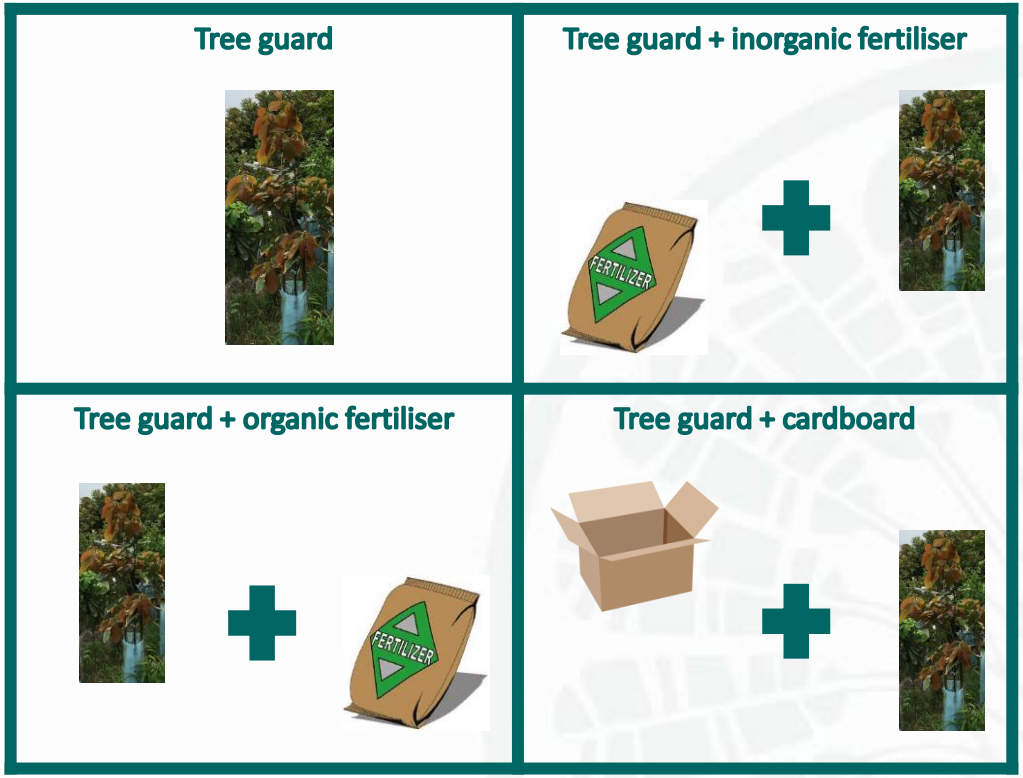
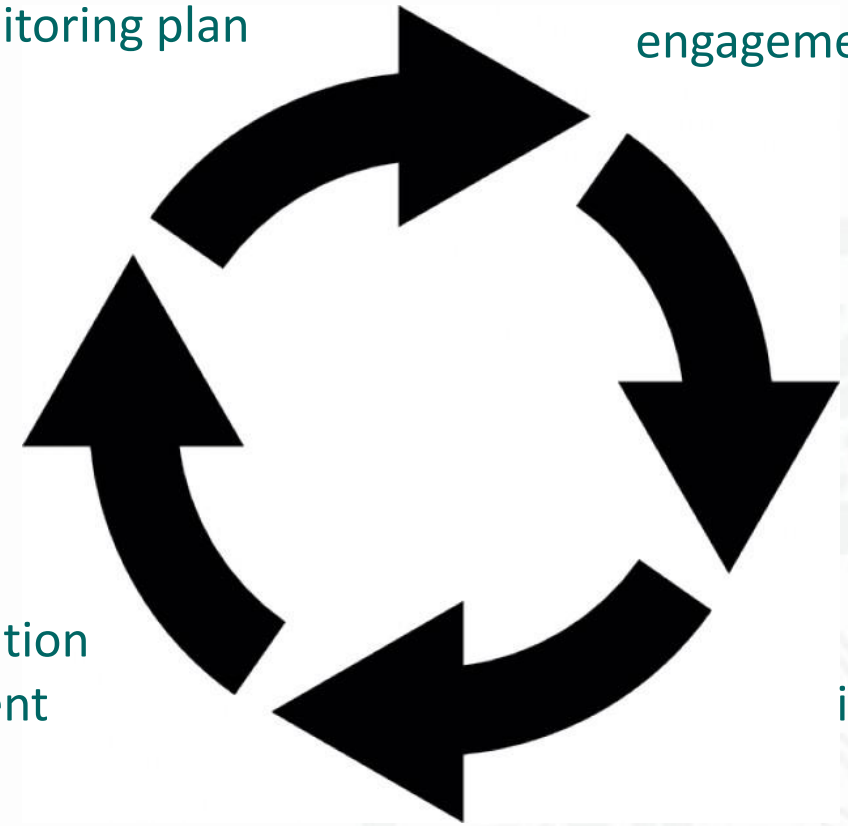
Step 5: Restoration treatment

- Design a field trial plot system to test the effectiveness of different treatments. Particularly helpful if restoration knowledge/experience in your area is limited.



Restoration planning overview



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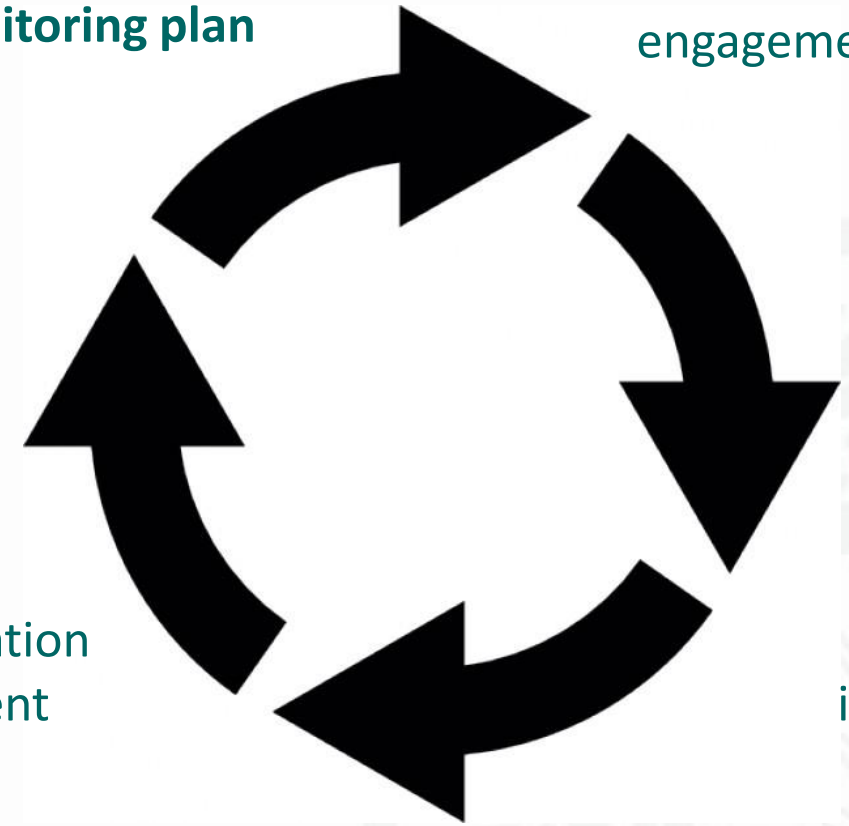
Step 6: Resource analysis

- Identification of adequate funding and labour
- Feasibility of planned work
- Risk assessment and risk management strategy
- Permissions, permits and legal constraints
- Long-term restoration sustainability

Restoration planning overview



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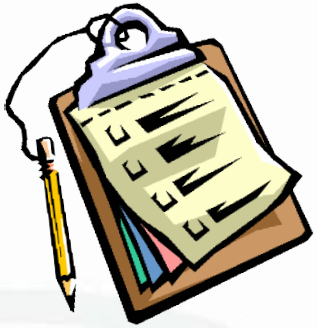
Step 7: Developing a monitoring plan



Consider:

- ✓ What data needs to be collected?
- ✓ What are the appropriate intervals for data collection?
- ✓ Who will carry out the monitoring plan?
- ✓ Have sufficient resources been allocated for monitoring work to go ahead?

Summary

- Ecological restoration directly contributes to several international conventions
- Determine the stakeholders of your restoration project
- Conduct a baseline inventory at your restoration site
- Identify and survey your reference forest
- Produce the SMART targets, goals and objectives for your restoration project
- Determine your restoration treatment and using adaptive management for sites with limited knowledge
- Develop a monitoring plan

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Our Mission is to mobilise botanic gardens and engage partners in securing plant diversity for the well-being of people and the planet

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