FOREST LANDSCAPE RESTORATION IN CANADA. OPPORTUNITIES, CHALLENGES AND COLLABORATION IN THE INTERNATIONAL CONTEXT

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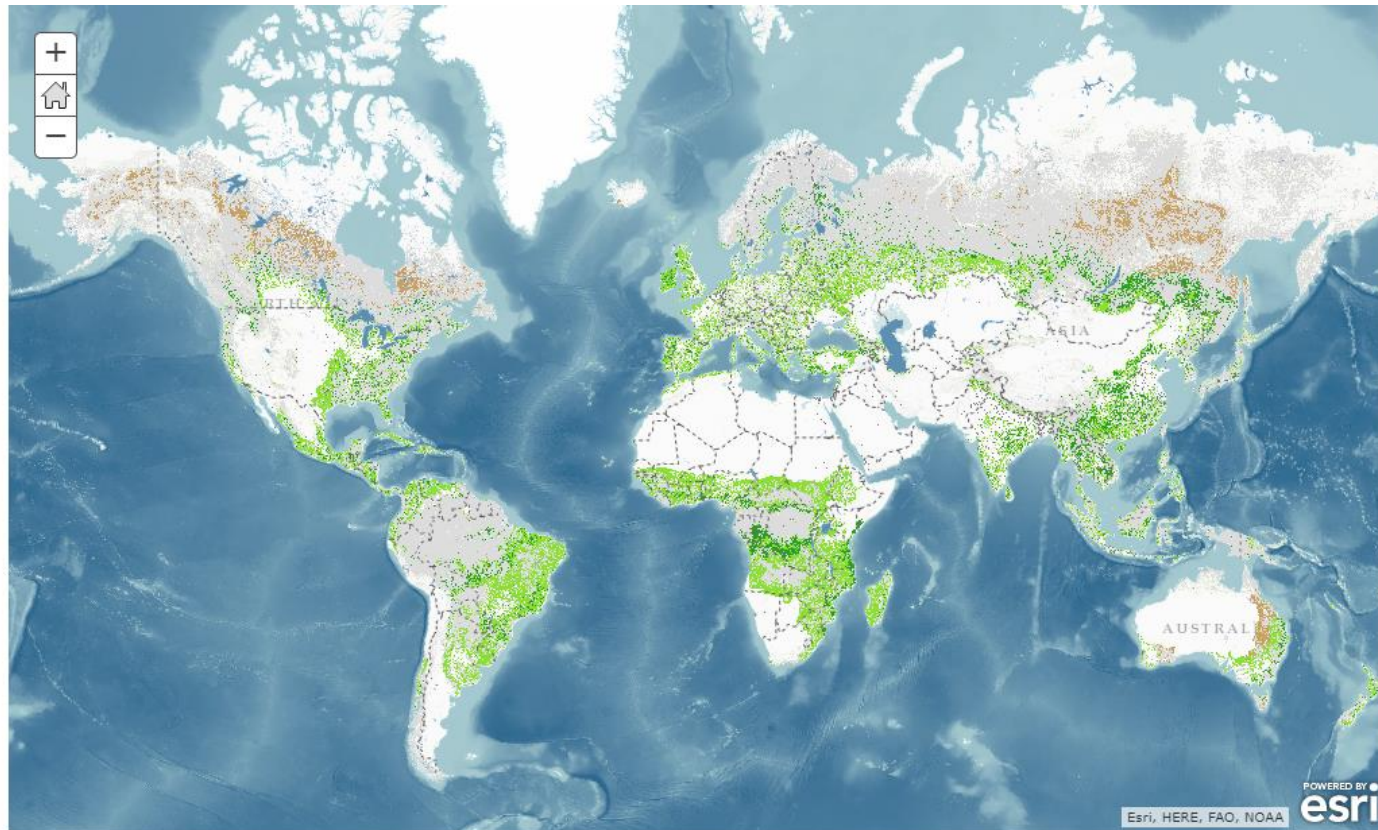
SERWC, Vancouver, February 15, 2018

Global Forest Landscape Restoration opportunity

Restoration opportunity areas

- Wide-scale restoration
- Mosaic restoration
- Remote restoration

Other areas

- Forest without restoration needs

http://www.wri.org/resources/maps/atlas-forest-and-landscape-restoration-opportunities

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Plan

- Forest Landscape Restoration (FLR) :

  - ✓ Concepts

  - ✓ International organisations and programs

  - ✓ Benefits

  - ✓ Challenges

- Canadian governance supporting FLR

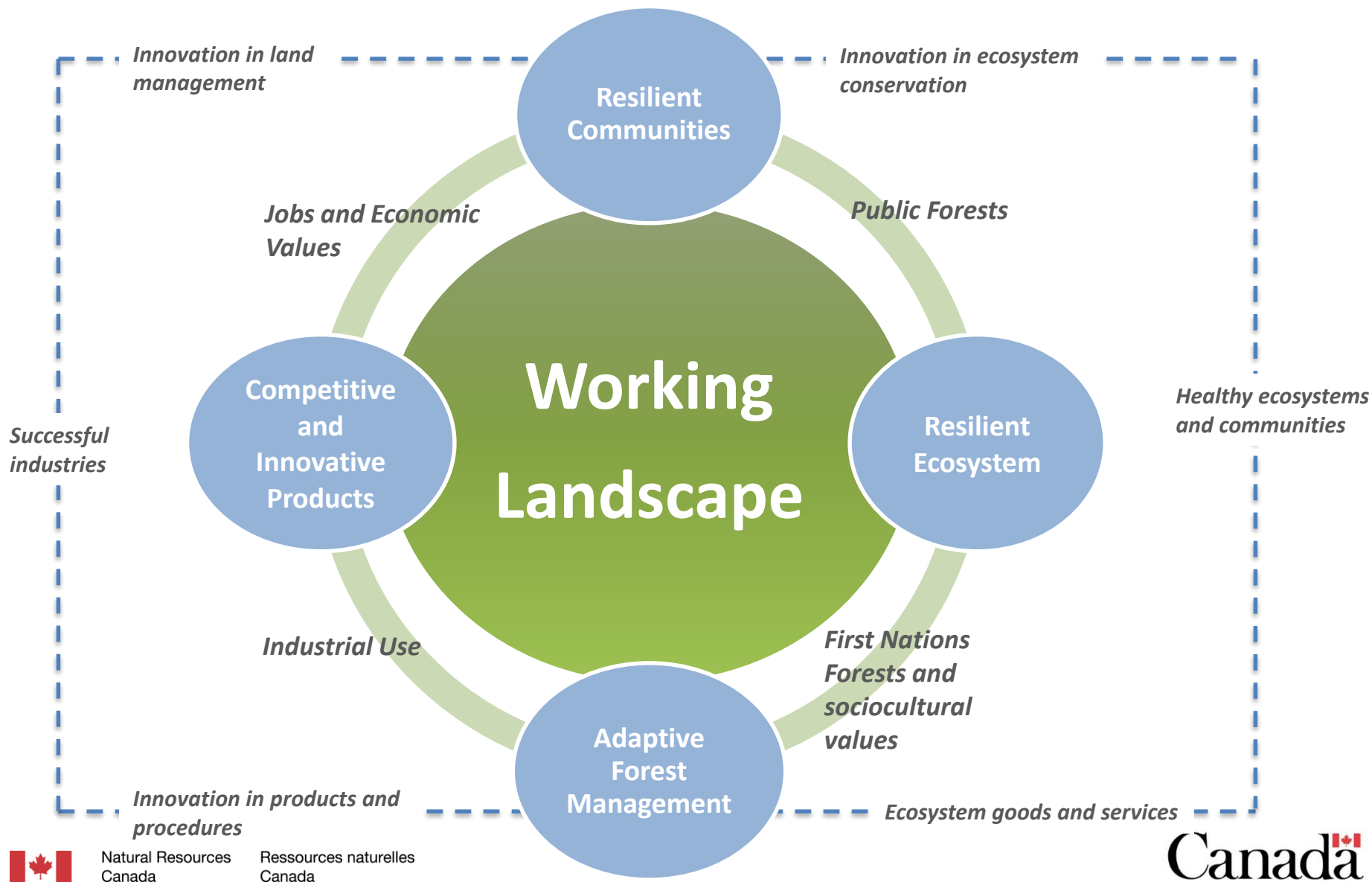- Case Study : Collaborative FLR for caribou habitat

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FLR: Concepts and Definitions

- **Ecological restoration**: Traditionally the act of returning ecosystem to an original state, based on a baseline scenario before the disturbance.

- **Evolving concept**: pre-disturbance baseline scenario vs novel ecosystems.

- **SER-ER**: The process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed.

- **IUCN & GPFLR**: Long-term process to regain ecological integrity/functionality and enhance human well-being in deforested or degraded landscapes.

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FLR: Working Landscape vs. Conflicted Landscape

Innovation in land management

Innovation in ecosystem conservation

Jobs and Economic Values

Public Forests

Resilient Communities

Working Landscape

Competitive and Innovative Products

Resilient Ecosystem

Successful industries

Healthy ecosystems and communities

Industrial Use

First Nations Forests and sociocultural values

Adaptive Forest Management

Innovation in products and procedures

Ecosystem goods and services

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Source: Modified from The Institute for Working Forest Landscapes

FLR: International organisations and programs

(*Chazdon et al. 2017. A Policy-Driven Knowledge Agenda for Global Forest and Landscape Restoration*)

Organization/Network	Program
Global Partnership on Forest and Landscape Restoration (GPFLR) and International Union for the Conservation of Nature (IUCN)	**Bonn Challenge** to restore 150 million ha of deforested and degraded land by 2020 and 350 million ha by 2030. Not a new commitment – a practical means to achieve existing international commitments!
2010 Aichi Convention on Biological Diversity (CBD)	Target 15: to restore at least 15% of degraded ecosystems
World Resources Institute (WRI)	20×20 initiative (Latin America), AFR100 initiative (Africa)
People and Reforestation in the Tropics, a Network for Education, Research, and Synthesis (PARTNERS)	Synthetic research, policy outreach, educational outreach
African Union	The Great Green Wall for the Sahara and the Sahel Initiative
United Nations Environment Program (UNEP)	One Billion Tree Program
The Nature Conservancy (TNC)	Plant a Billion Trees
World Wildlife Fund (WWF)	Landscape restoration in 10 ecoregions
Ecological Restoration Alliance of Botanical Gardens	100 restoration projects on several continents over next 20 years

FLR: International organisations and programs

- To date, 45 governments, private associations and companies have committed to restore over 160 million ha

- Following the 10 Principles for a landscape approach to reconciling agriculture, conservation, and other competing land uses
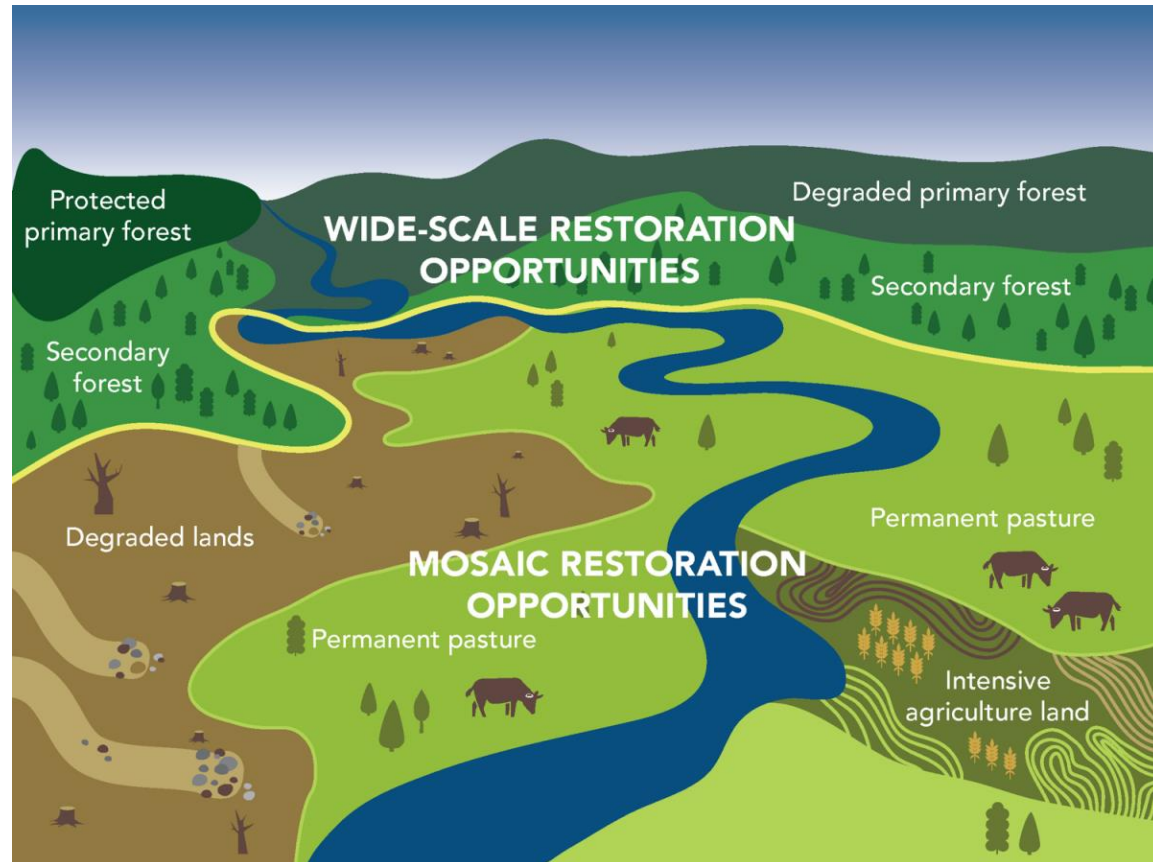
http://www.forestlandscaperestoration.org

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FLR: International organizations and programs

- **Goals are multiple**
- ✓ Fire
- ✓ Wildife habitat
- ✓ Grassland
- ✓ Mangrove
- ✓ Carbon
- ✓ Water
- ✓ Woodlands
- ✓ Wide-scale / Mosaic

- **Tailored to local conditions**
  - ✓ Adapt restoration strategies to fit local social, economic and ecological contexts; there is no "one size fits all"

Protected primary forest
Degraded primary forest
WIDE-SCALE RESTORATION OPPORTUNITIES
Secondary forest
Secondary forest
Degraded lands
MOSAIC RESTORATION OPPORTUNITIES
Permanent pasture
Permanent pasture
Intensive agriculture land

http://www.forestlandscaperestoration.org

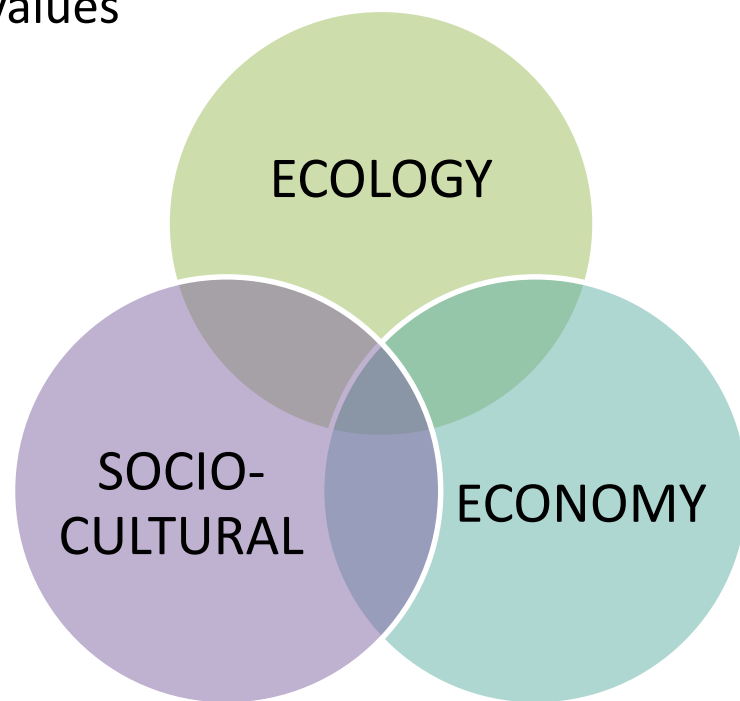Natural Resources Canada   Ressources naturelles Canada

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FLR: Benefits

- There are multiple benefits across many domains

- It is more than just tree planting

- Multifunctional landscape with multiple values

Multifonctional landscape (from Laursen 2013)

ECOLOGY

SOCIO-CULTURAL

ECONOMY

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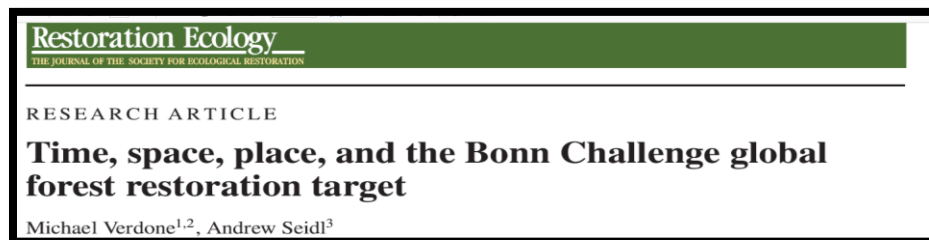
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FLR: Benefits

- The goods and services of the ecosystem, such as biodiversity, carbon, habitat and water quality are taken into account

- Industrial environmental performance are accounted for and improved

- Scientific knowledge includes traditional Indigenous communities values and knowledge

FLR: Benefits

- Green Economy: jobs and revenues are protected and created
  Benefits exceed costs

- USA : FLR directly supports 126 000 jobs and a budget of $9.5M USD per year

- Meeting the Bonn challenge target of 350Mha would globally generate between US$ 0.7 and US$ 9 trillion

🔓 OPEN ACCESS   🔬 PEER-REVIEWED

RESEARCH ARTICLE

Estimating the Size and Impact of the Ecological Restoration Economy

Todd BenDor ✉, T. William Lester, Avery Livengood, Adam Davis, Logan Yonavjak

Published: June 17, 2015 • https://doi.org/10.1371/journal.pone.0128339

Restoration Ecology
THE JOURNAL OF THE SOCIETY FOR ECOLOGICAL RESTORATION

RESEARCH ARTICLE

Time, space, place, and the Bonn Challenge global forest restoration target

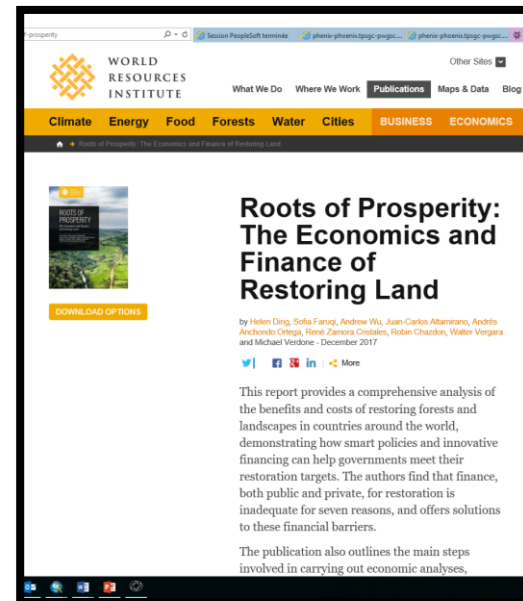Michael Verdone[1,2], Andrew Seidl[3]

Nielsen-Pincus M, Moseley C. Economic and Employment Impacts of Forest and Watershed Restoration in Oregon (Spring 2010). Working Paper No. 24. 2010 9/17/14. Available from: http://ewp.uoregon.edu/publications/working.

The Department of the Interior's Economic Contributions, FY 20112012 9/17/14. Available from: http://www.doi.gov/americasgreatoutdoors/loader.cfm?csModule=security/getfile&pageid=308931

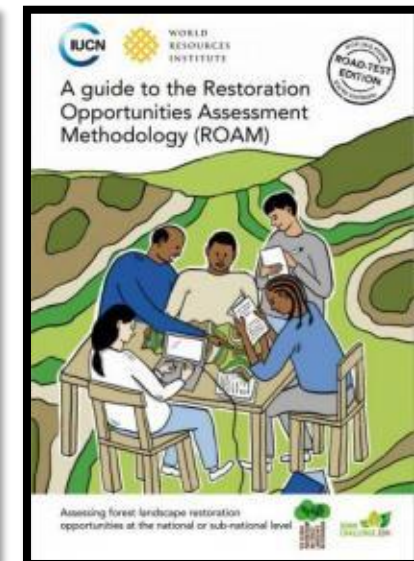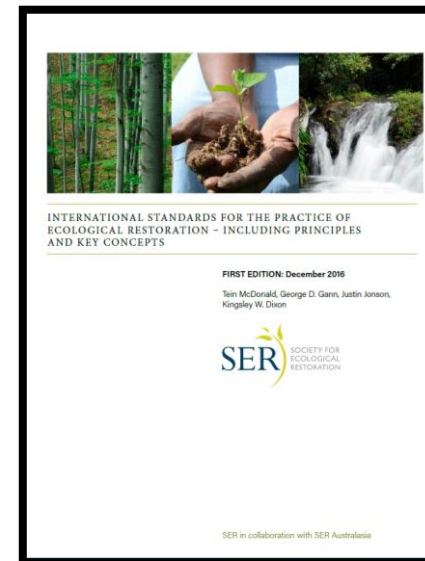WORLD RESOURCES INSTITUTE

What We Do   Where We Work   **Publications**   Maps & Data   Blog

Climate   Energy   Food   **Forests**   Water   Cities   BUSINESS   ECONOMICS

Roots of Prosperity: The Economics and Finance of Restoring Land

by Helen Ding, Sofia Faruqi, Andrew Wu, Juan-Carlos Altamirano, Andrés Anchondo Ortega, René Zamora Cristales, Robin Chazdon, Walter Vergara and Michael Verdone - December 2017

This report provides a comprehensive analysis of the benefits and costs of restoring forests and landscapes in countries around the world, demonstrating how smart policies and innovative financing can help governments meet their restoration targets. The authors find that finance, both public and private, for restoration is inadequate for seven reasons, and offers solutions to these financial barriers.

The publication also outlines the main steps involved in carrying out economic analyses,

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FLR: Benefits

- Global Partnership on Forest Landscape Restoration (GPFLR). A proactive network composed of governments, organizations (national and international: USDA, IUCN, UNEP, FAO, CBD, SER) and practitioners

- An international community of practice: 30 governments and international and non-governmental organizations have joined

- [An abundance of international scientific literature](#) and Guidelines

- Guidelines for the FLR initiatives:

  - ✓ research and policy,

  - ✓ best practices,

  - ✓ tools and analysis methods

INTERNATIONAL STANDARDS FOR THE PRACTICE OF ECOLOGICAL RESTORATION – INCLUDING PRINCIPLES AND KEY CONCEPTS

FIRST EDITION: December 2016

Tein McDonald, George D. Gann, Justin Jonson, Kingsley W. Dixon

SER SOCIETY FOR ECOLOGICAL RESTORATION

SER in collaboration with SER Australasia

IUCN | WORLD RESOURCES INSTITUTE

A guide to the Restoration Opportunities Assessment Methodology (ROAM)

ROAD-TEST EDITION

Assessing forest landscape restoration opportunities at the national or sub-national level

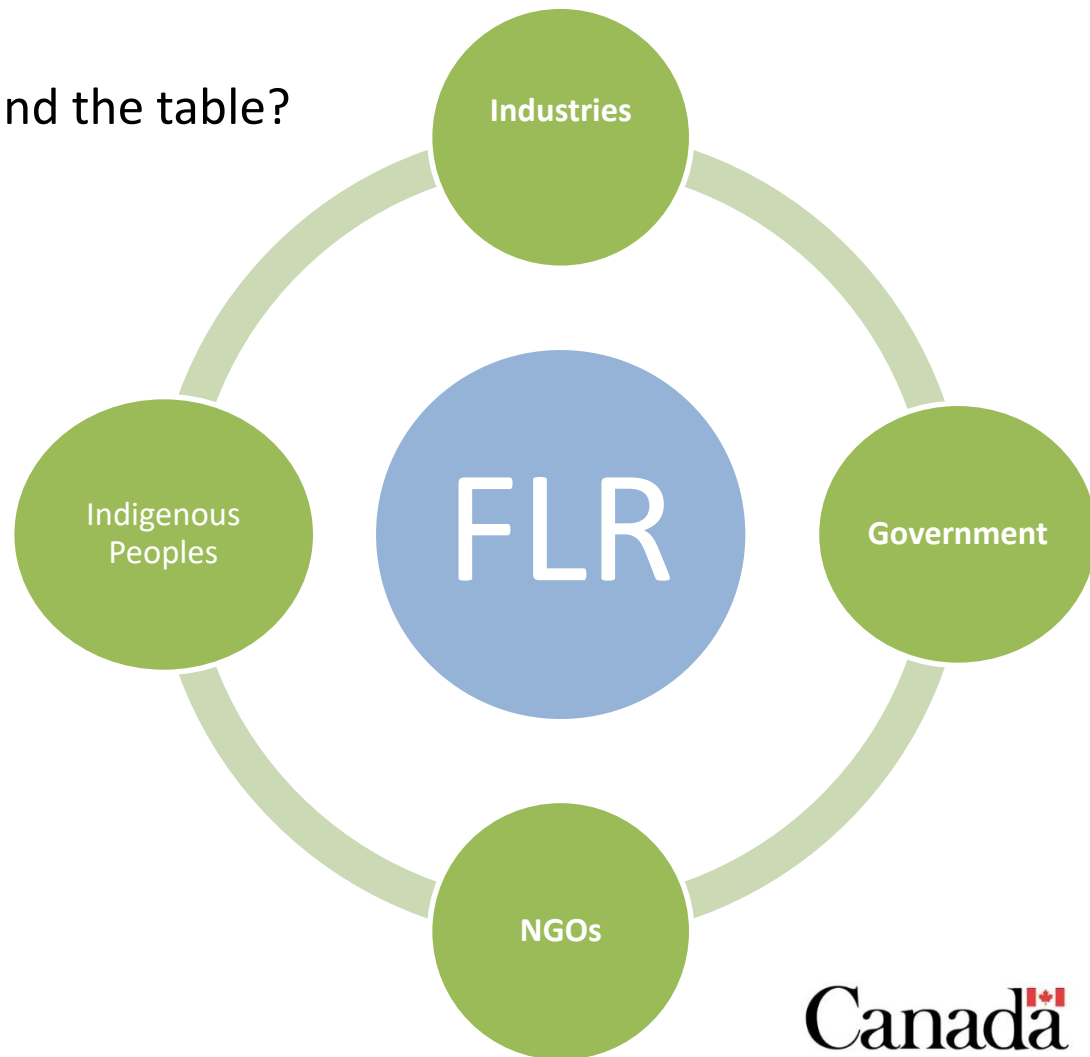Natural Resources Canada   Ressources naturelles Canada

FLR: Benefits

- Elevate and connect already ongoing national and sub-national processes

- Reinforce domestic support for restoration objectives through international attention

- Facilitate reporting on international agreements, e.g. CBD, UNFCCC, UNSPF

- Join a community of practice that can provide technical support

- Strengthen environmental reputation –gain recognition as a leader in a global movement

- Mobilize additional resources by building the business case for restoration and learning about funding models from other jurisdictions

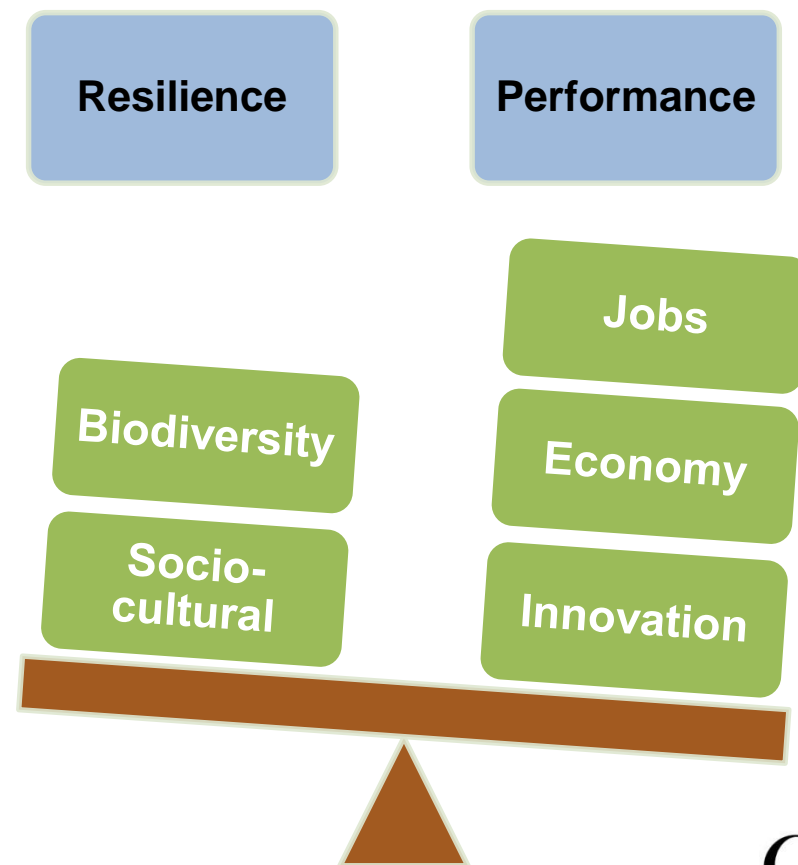Natural Resources Canada   Ressources naturelles Canada

FLR: Challenges

- The FLR concept brings together key players who use, manage and have a stake in the forests
- How can we get everyone around the table?

Industries

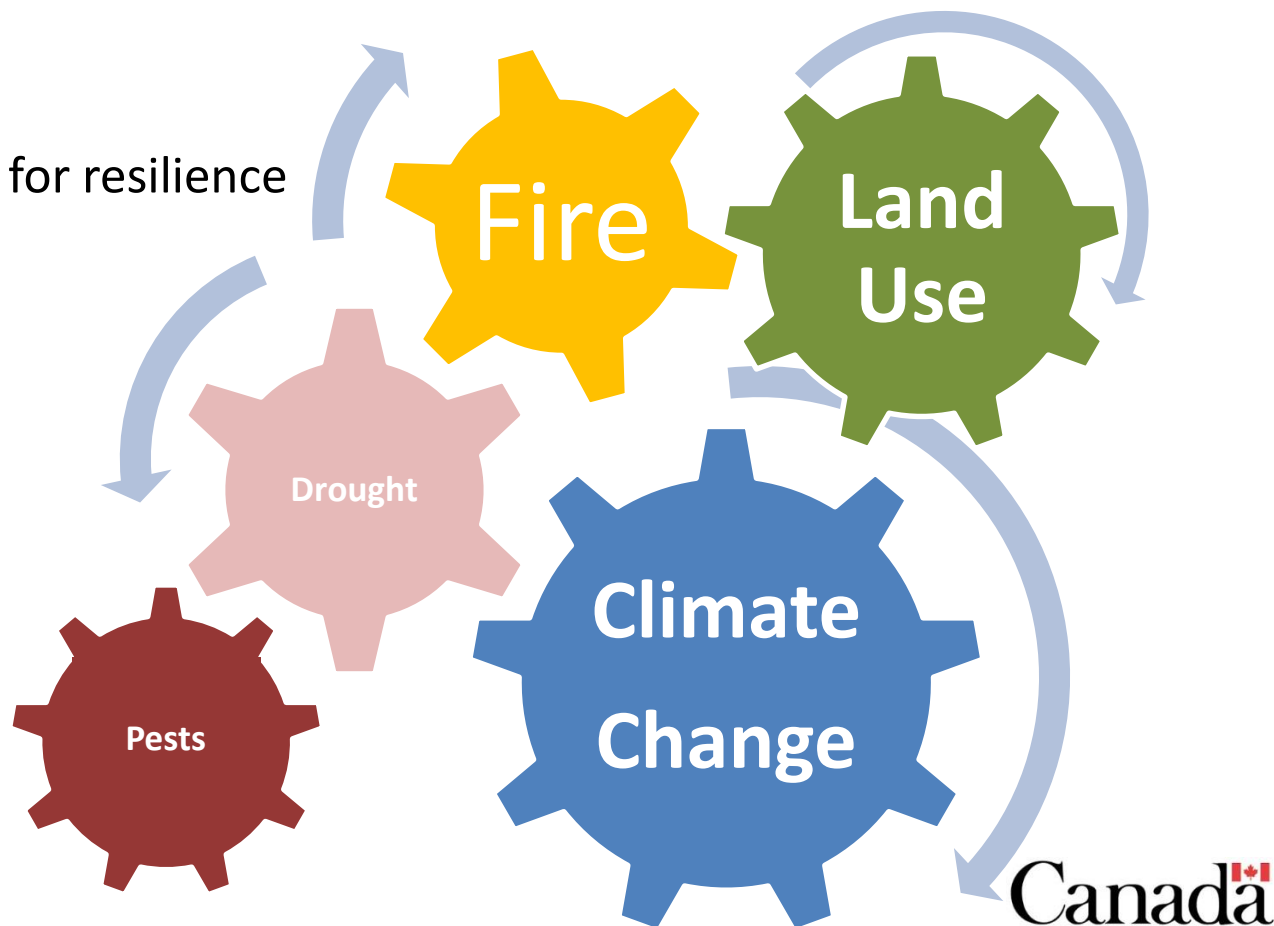Indigenous Peoples

FLR

Government

NGOs

FLR: Challenges

- Requires decisions to be collaborative, adaptive, and encompass a range of values and functions.
- How to find the **right balance**?

Resilience | Performance

Jobs

Biodiversity | Economy

Socio-cultural | Innovation

FLR: Challenges

- Living Landscape
- Landscapes are dynamic and change rapidly over time and space due to cumulative effects: CC, human footprint, natural disturbances (fire, insects), droughts...
  - ✓ Uncertainty
  - ✓ Changes capacity for resilience

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Canadian governance supporting FLR

Governance:``*The ways and institutions through which individuals and groups express their interests, exercise their rights and obligations and mediate their differences. Its thus a complex matter - The essence of which is trust and cooperation``*
(Colfere et al. 2010. in Collaborative Governance of Tropical Landscapes)

Federal

Industries

Provinces and Territories

Indigenous Peoples

International Organizations

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Canadian governance supporting FLR

Sustainable Forest Management

Each Jurisdictions develops laws and regulations focused on SFM including wildlife, biodiversity, soils, water, resource-dependent communities and scenery.

Environmental Assessment and Reclamation

for the Energy and Mining sector

World leader in **Forest Certification**

48% of the country's forests are certified. 37% of the global total

Deforestation in Canada is among the lowest in the world: 0.02% of Canada's forests

350 000 and 500 000 ha/y in artificial **Regeneration** In accordance with the law, all logged forests must be regenerated successfully.

Long term **Monitoring** and enforcement of **Best practices**

Species at Risk Act

Federal laws that apply to all forestry operations

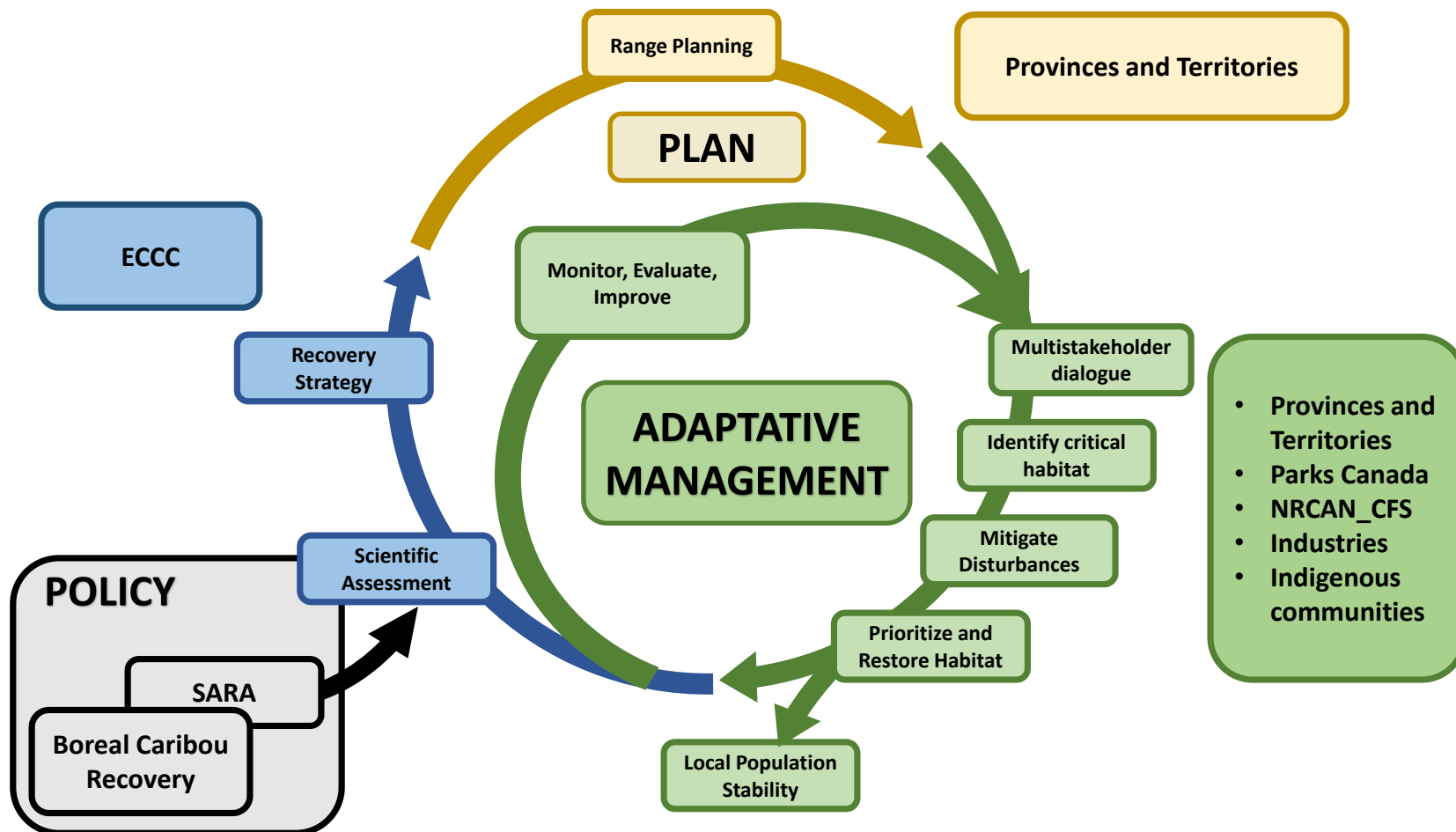## Trees planting initiatives

Canada 150 Projects, Trees for Tomorrow

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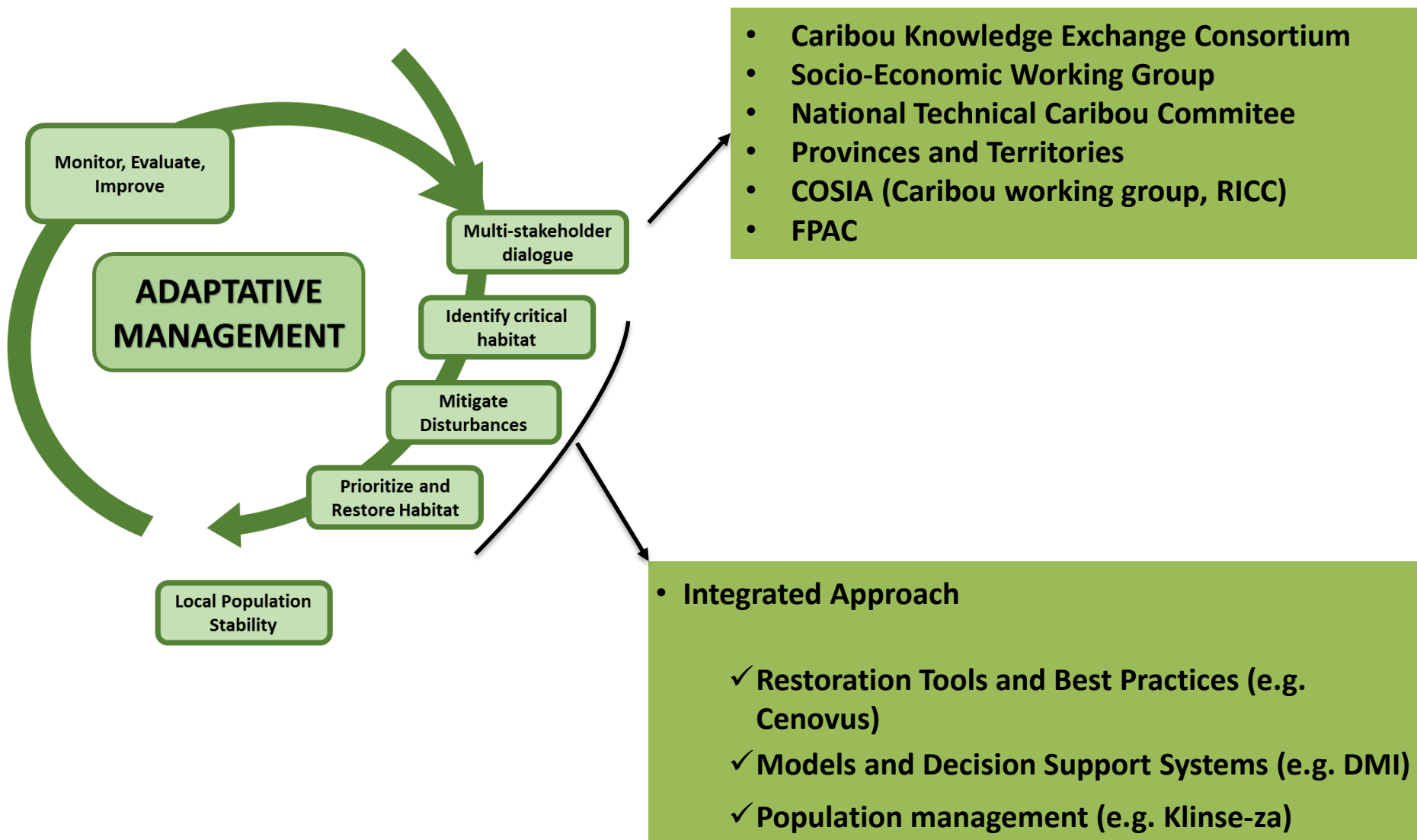Ressources naturelles Canada

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Roadmap for the caribou recovery

- **From political momentum to capacity building initiatives with various stakeholder**

Collaborative FLR for caribou habitat

Monitor, Evaluate, Improve

ADAPTATIVE MANAGEMENT

Multi-stakeholder dialogue

Identify critical habitat

Mitigate Disturbances

Prioritize and Restore Habitat

Local Population Stability

- **Caribou Knowledge Exchange Consortium**
- **Socio-Economic Working Group**
- **National Technical Caribou Commitee**
- **Provinces and Territories**
- **COSIA (Caribou working group, RICC)**
- **FPAC**

- **Integrated Approach**

  ✓ **Restoration Tools and Best Practices (e.g. Cenovus)**

  ✓ **Models and Decision Support Systems (e.g. DMI)**

  ✓ **Population management (e.g. Klinse-za)**

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Next Steps?

- Showcase the Canadian expertise in restoration at the International level

- Build a Community of Practice for FLR

- Share Models and Best Practices

- Capacity building for communities

17th North American Caribou Workshop

October 29th to November 2nd, 2018
Ottawa, ON, CANADA

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Questions ?