

The Science of Integrated Approaches to Natural Resources Management:

*lessons from programmes and projects of the
Global Environment Facility*

Study commissioned by the
Scientific and Technical Advisory Panel (STAP)
of the GEF



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A Holistic Methodology

- ⌘ Literature review
 - ⌘ Systems thinking
 - ⌘ Integrated approaches to NRM
- ⌘ Rapid screening of a random sample of Multi-Focal Area (MFA) projects
- ⌘ 10 Case studies – Integrated Approach Pilots (IAP) and MFA projects
- ⌘ Interviews with key informants

Domains of integration

- ⌘ *System analysis: boundary, main processes, actors and feedbacks*
- ⌘ *Across Focal Areas*
- ⌘ *Across GEF agencies*
- ⌘ *Spatial*
- ⌘ *Environmental and Development Concerns*
- ⌘ *Across Policy Domains*
- ⌘ *Into Productive Sectors and Investments*
- ⌘ *Vertical*
- ⌘ *Multiple Stakeholders*
- ⌘ *Equity Concerns*
- ⌘ *Adaptive Learning into Governance*

Additional criteria for case studies

- ⌘ *Information sources*
- ⌘ *Assessment tools for socio-ecological impacts*
- ⌘ *Extent and sustainability of integration*
- ⌘ *Innovation in design and/or implementation*

Literature review:

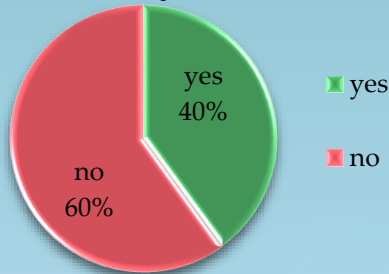
Main characteristics of INRM

Born & Sonzogni (1995)

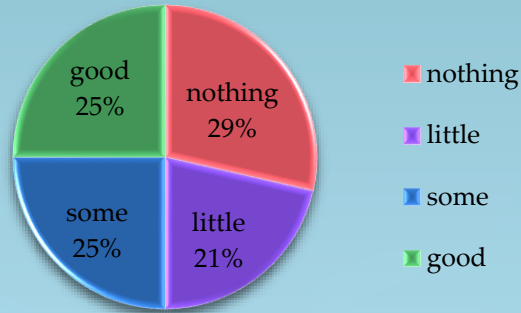
1. **Comprehensive:** It considers the whole system rather than certain subcomponents;
2. **Interconnective:** Addresses linkages and feedbacks;
3. **Strategic:** Recognizes the need to pragmatically limit the number of variables and feedbacks to be addressed while maintaining comprehensiveness; and
4. **Interactive/Coordinative:** Favours joint decision-making among stakeholders and exchange of resources and information among interested parties, as well as conflict resolution elements.

Results from rapid screening of ProDocs

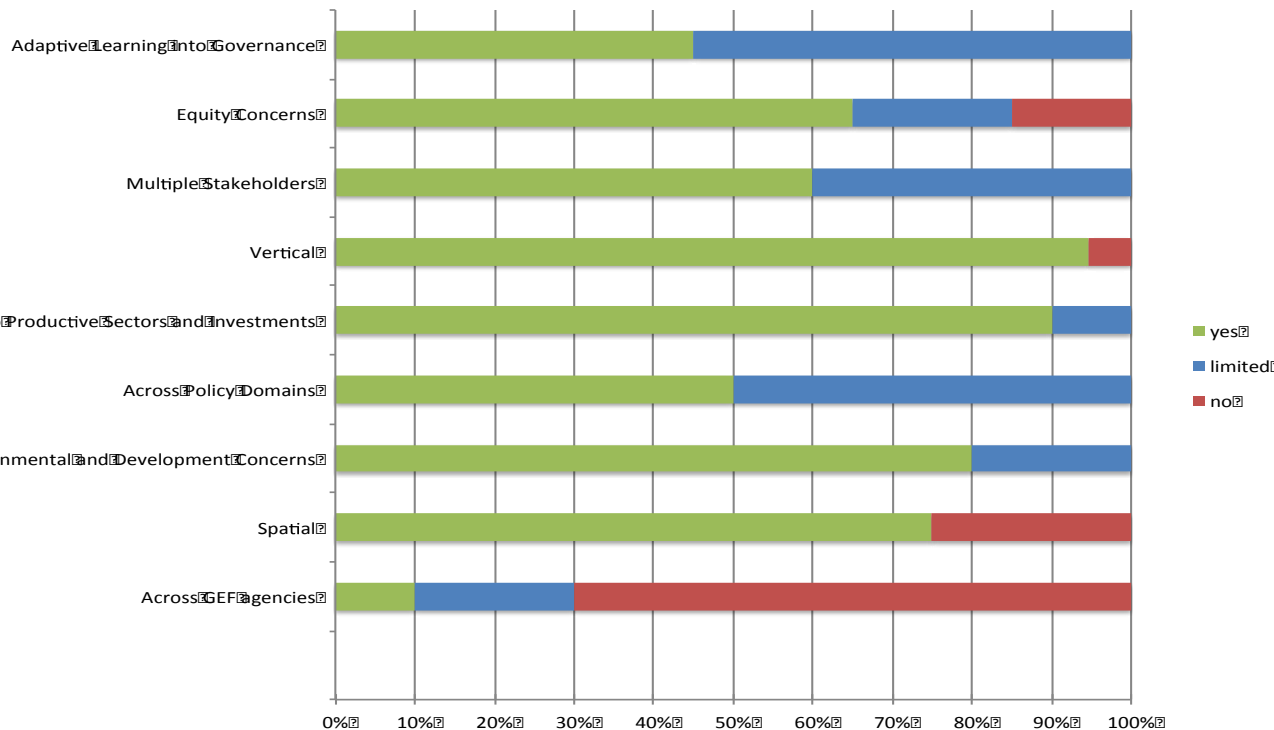
Is the system boundary clearly defined?



Analysis of System



Integration across different domains



- ⌘ **System boundary:** usually vaguely defined
 - ⌘ Missing: what is considered external
- ⌘ **Integration across policy domains:** limited to environmental and agricultural related sectors
- ⌘ **Spatial integration**
- ⌘ **Equity:** gender considered (but limited), few projects target the most vulnerable or poorest populations
- ⌘ **Participation of stakeholders:** in consultations but limited co-production or role in steering committees
- ⌘ **Learning and Adaptive Mgt:** limited during project implementation

Generic Theory of Change for INRM

Areas of GEF contribution

Spatial planning
(landscape/seascape)

Innovation systems for INRM

Monitoring and Assessment of
GEBs and co-benefits of INRM

Sectoral integration &
mainstreaming of INRM

Learning & Adaptive
knowledge management

Communication &
dissemination

Outcomes

Improved INRM technologies
and approaches generate GEBs

Improved INRM approaches
produce gender-balanced socio-
economic benefits

Institutional innovations support
scaling up and out, e.g.:
- co-management
- collective action
- participatory governance

Financial mechanisms and
incentives for INRM in place,
examples:
- PES
- value chains

Transformational Processes

Broader adoption of
integrated
approaches to
natural resources

Behavioural and
institutional change:
- policy level
- users of natural
resources

Impact

Improved
environmental
status and stress
reduction in
globally significant
landscapes and
seascapes

Learning cycle

Single-loop:

- Basic correction of errors and improvement of standard practices
- No change in underlying assumptions or established routines

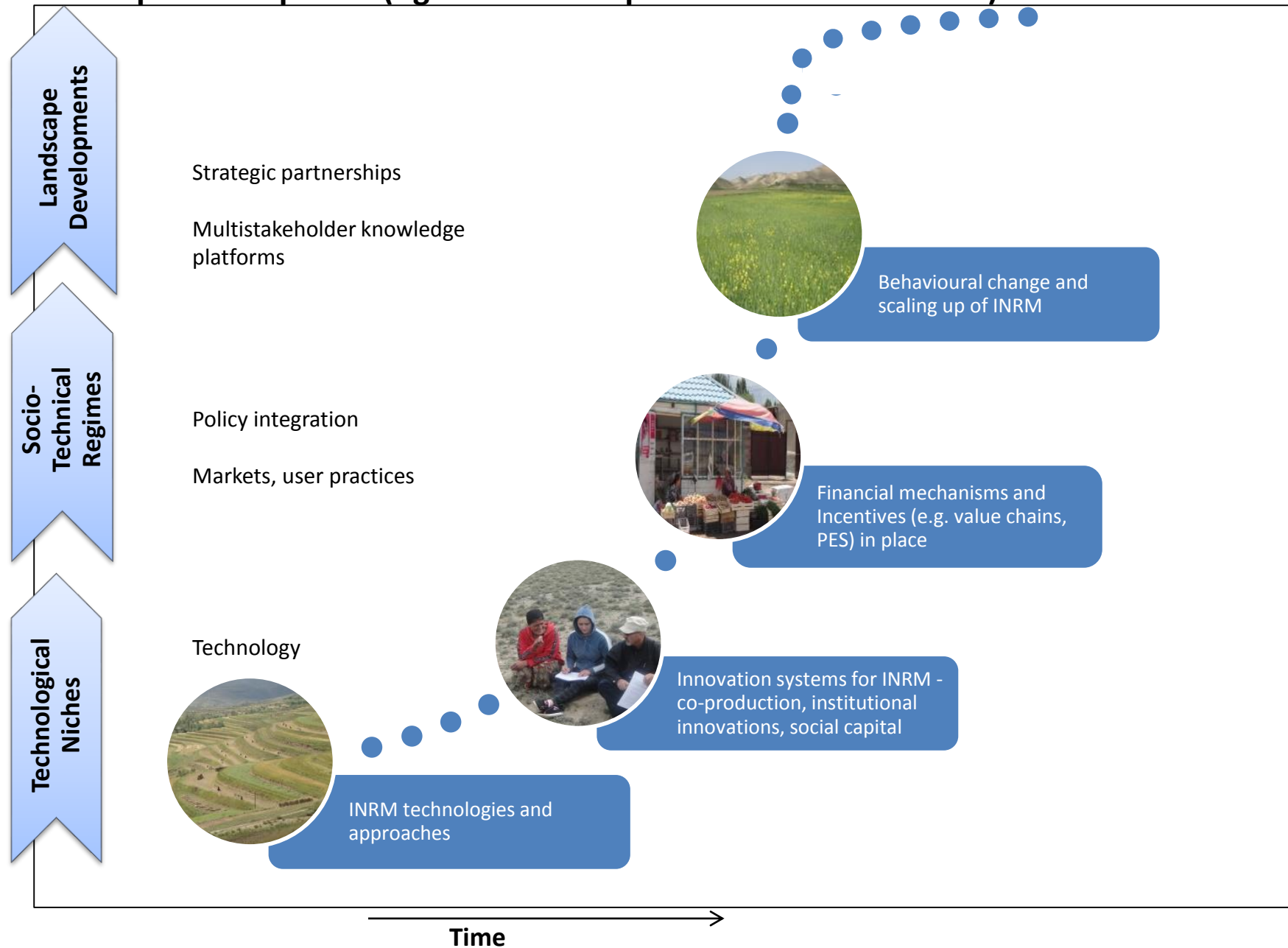
Double-loop:

- Underlying values and policies are examined
- Old habits are unlearned based on critical reflection of experiences

Triple-loop:

New governance mechanisms and protocols are designed based on iterative learning cycles

INRM Theory of change and the transition from niche adoption to regime shift and landscape development (figure draws inspiration from Geels 2002)



Conclusions

- ⌘ **Understanding the system** – Focusing on drivers of environmental change
- ⌘ **A theory of change for INRM** helps in understanding impact pathways to achieve short, medium and long-term environmental and socio-economic benefits and impact at scale.
- ⌘ **Transformative change** –starts at the local level where niches of innovation, experimentation and learning occur that are scaled up through regime shifts that lead to wider adoption at the landscape level.
- ⌘ **Enable learning, innovation and adaptive management** – need to aim for higher levels of learning, such as single, double and triple loop learning
- ⌘ **Strengthen communication** –messages tailored to different target groups to raise public awareness.
- ⌘ **Incorporate conflict-resolution mechanisms** –Avoiding conflicts in complex systems should build on existing institutions and collective action initiatives at the local level and the setting of clear rules.
- ⌘ **To foster functioning partnerships** - setting clear rules for engagement and interaction is as relevant at the international and regional levels as it is at the local level.

In summary:

- ❧ **Integration is an important concept** that helps addressing complex social-environmental problems and it could also contribute to more effective implementation of the SDGs.

