Resilience in socio-ecological production landscapes and seascapes (SEPLS)

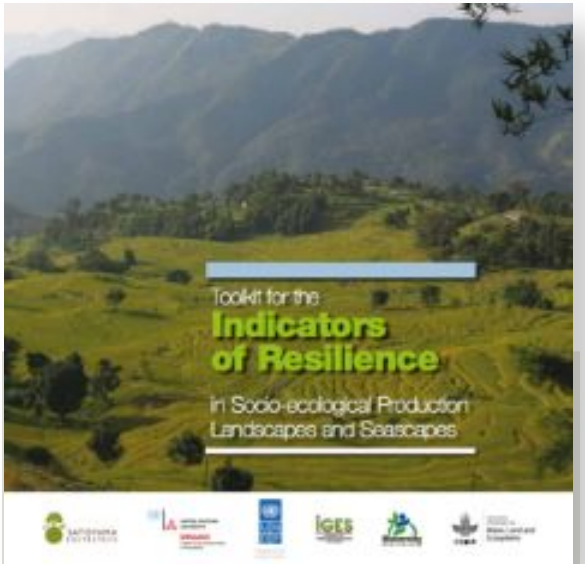
SATOYAMA INITIATIVE

- **SEPLS: Areas where production activities help to maintain biodiversity and ecosystem services in various forms while sustainably supporting the livelihoods and well-being of local communities** (UNU-IAS and IGES eds. 2015)

- Harmonious human-nature interactions in the dynamic mosaics have allowed for high-level resilience
- But no guarantee that SEPLS will continue to be capable to absorb and adapt to the pressures associated with new challenges (e.g., climate change)
- A resilience approach is useful, considering the potential to maintain, revitalize and rebuild SEPLS in the new contexts

Indicators of Resilience in SEPLS

- **A set of 20 indicators** for communities to assess the **social-ecological resilience** of production landscapes and seascapes
  - Include **qualitative** and **quantifiable** indicators -- based on **observations, perceptions and experiences of local communities**
  - Capture **different aspects of key systems** (i.e., ecological, agricultural, cultural, social, economic)
  - Define **spatial scale** depending on **how local community members identify the area** (e.g., administrative, geographic boundaries).



Participants score their landscape using indicators for resilience during a workshop, Bhutan

Scoring data collected at a workshop in Kenya

UNITED NATIONS UNIVERSITY
UNU-IAS
Institute for the Advanced Study of Sustainability

UNDP

IGES

Bioversity International

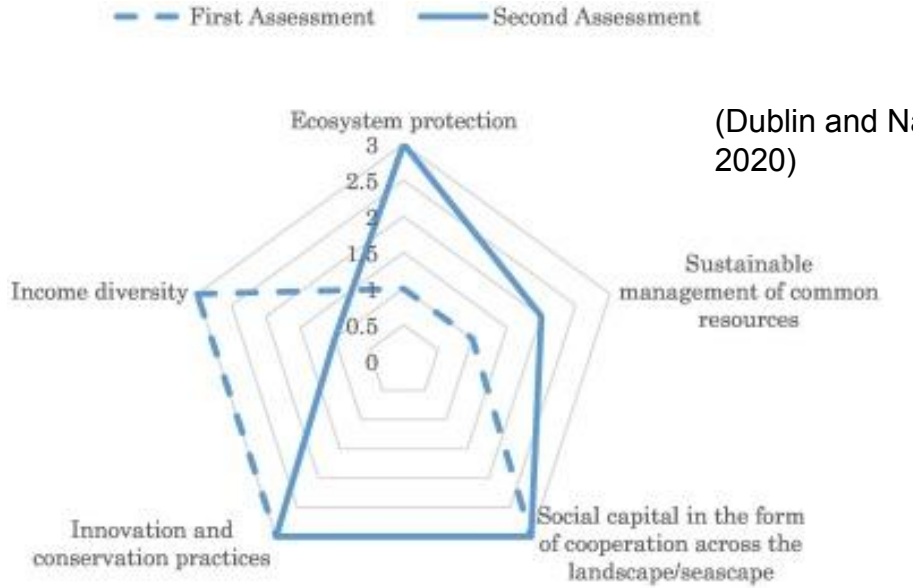
CGIAR
RESEARCH PROGRAM ON
Water, Land and Ecosystems

UN environment programme

qpan asia pacific
ADAPTATION NETWORK

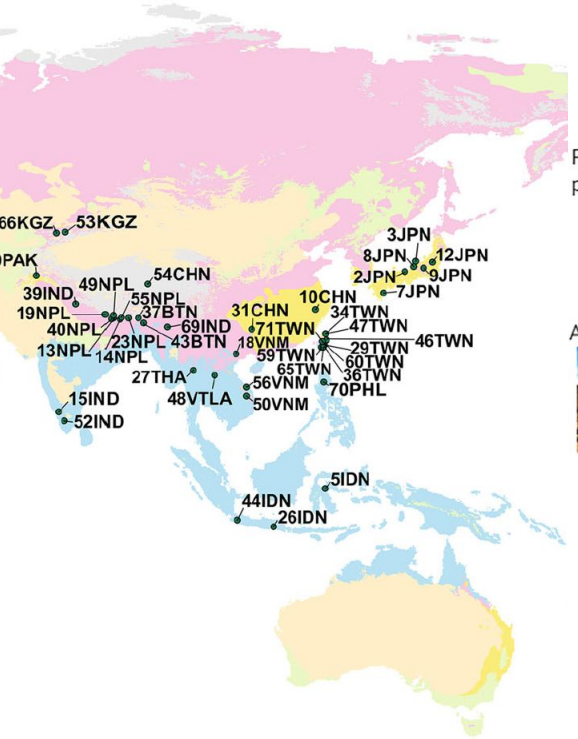
Insights into planning and programming locally-led adaptation

- Being tested and applied in various sites to **help measure social and ecological resilience** of land/seascapes
- **A tool for engaging local communities in adaptive management** of land/seascapes:
  - Understand resilience in SEPLS
  - Enhance communications among stakeholders
  - Support development and implementation of resilience-strengthening strategies
  - Empower communities in decision-making processes and adaptive management
- **Periodic use** enables **monitoring and evaluation** and identification of **priority actions** for adaptive management.



(Dublin and Natori 2020)

Challenges to climate adaptation

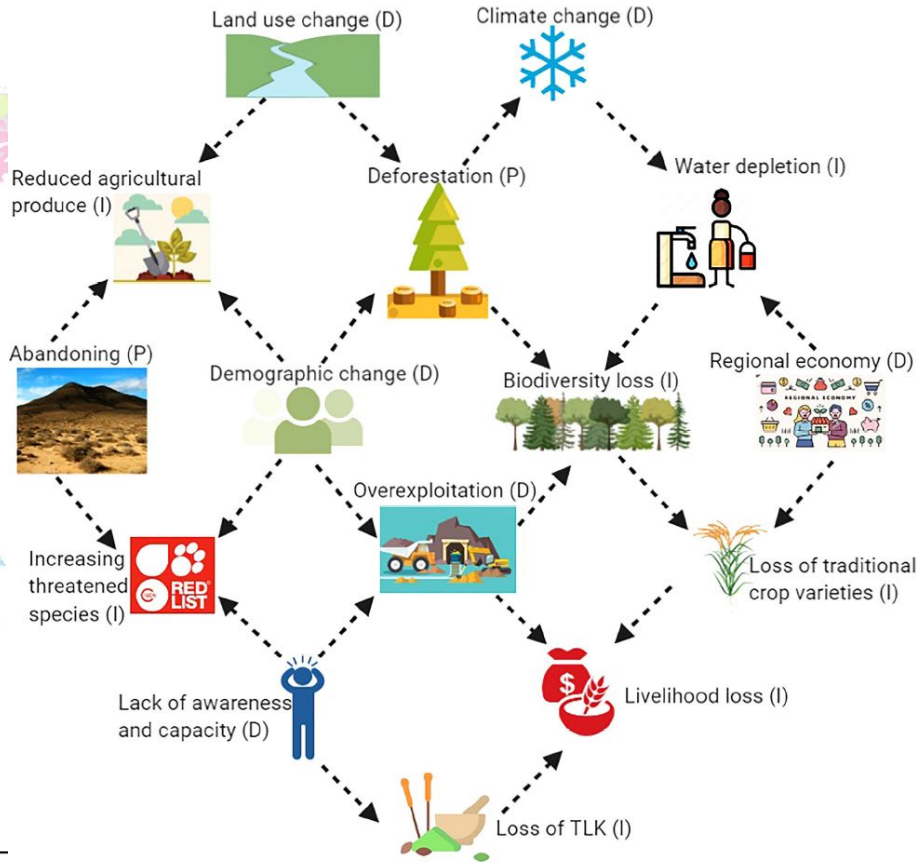


Ambio
https://doi.org/10.1007/s13280-021-01651-6

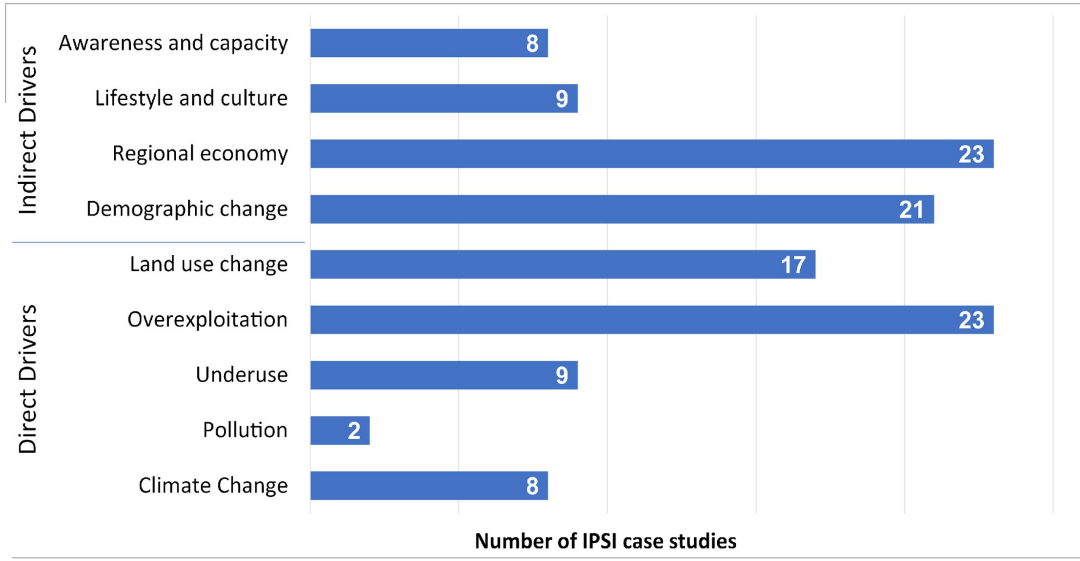
REVIEW

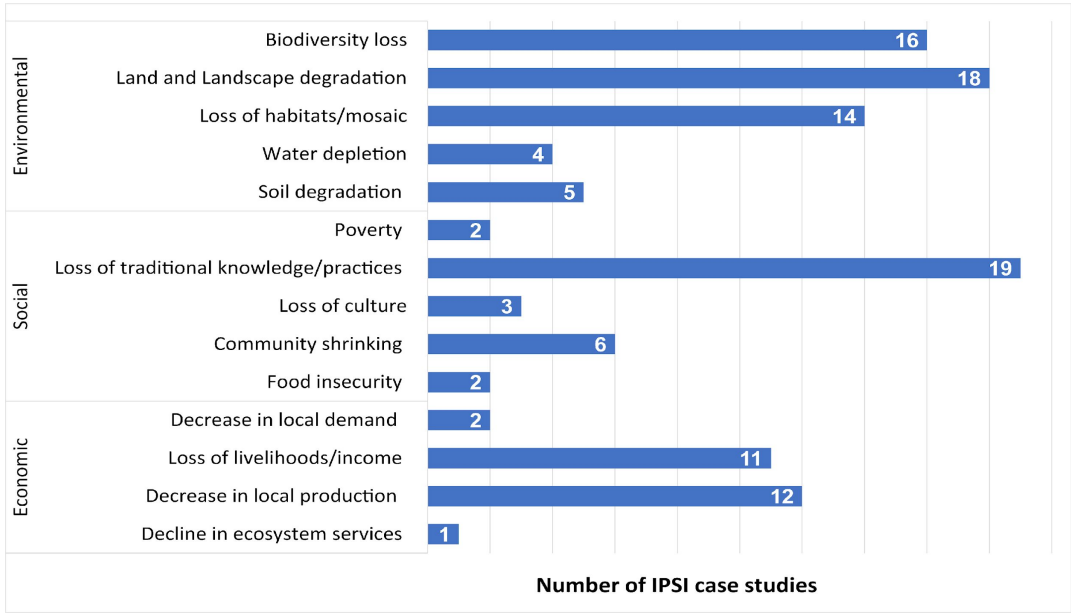
Community-based responses for tackling environmental and socio-economic change and impacts in mountain social–ecological systems

Himangana Gupta, Maiko Nishi, Alexandros Gasparatos



Case studies from 71 mountain locations
Drivers, impacts, and responses assessed





8TH ASIA-PACIFIC CLIMATE CHANGE ADAPTATION FORUM

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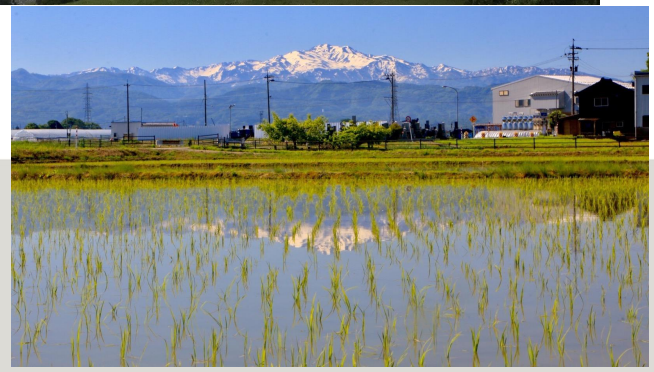
apan asia pacific ADAPTATION NETWORK

Approaches for sustainability IPBES	Community responses to achieve sustainability Case studies
Promote inclusive governance through stakeholder engagement	- Engaging local community in forest management - Supporting local organisations to improve environmental governance - Creating legal framework for indigenous community-based forest management
Practice informed governance	- Creating local biocultural, traditional knowledge, and biodiversity databases - Integrating traditional knowledge and practices into community-based conservation - Providing technical support for traditional agriculture
Promote adaptive governance and management	- Establishing community protected areas - Participatory community-based land use planning - Coping traditionally - preservation of seed varieties; promotion resilient crop varieties
Conserve, manage effectively and sustainably use terrestrial landscapes	- Sustainably collect non-timber forest products from community forests - Reforming grazing practices and implementing soil conservation measures - Restoring watersheds
Improve sustainability of financial systems	- Improving market for sustainable forest products and local agricultural products - Adopting payment of ecosystem services like schemes

Community speak

Social	Environment	Economic	Social	Environment	Economic
KINNAUR, INDIA			HAKUSAN, JAPAN		
Traditional knowledge loss	Climate and snow cover change	Commercialization of medicinal plants	Loss of traditions and culture	Snow cover change	Weak value chains for local produce
Single source of livelihoods	Impact of dam construction	Loss of apple production	Loss of local knowledge	Impact of construction	More construction companies
Lack of decision making power	Loss of water resources	Traditional livelihoods lost	Depopulation	Landslides	



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Community response

Climate change

Biodiversity

Traditional knowledge

Sustainability

KEY STAKEHOLDERS

City/local government
Local NGOs
Academia
Private sector
Local people

KINNAUR, INDIA

KEY INDICATORS
Landscape diversity
Food system diversity
Socio-ecological mobility
Income diversity

COMMUNITY SOLUTIONS
New apple variety
Documenting traditional knowledge
Community-based decision making
Preserving medicinal plant use culture

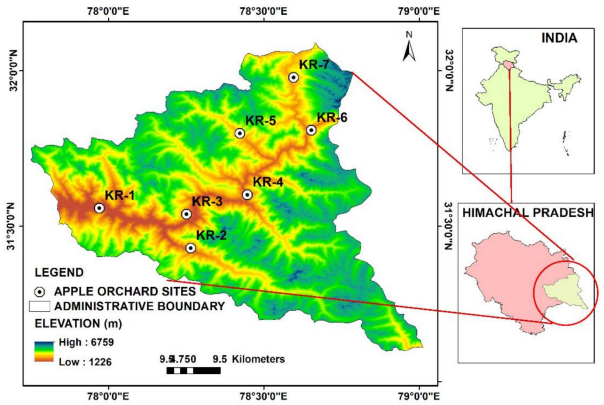
HAKUSAN, JAPAN

KEY INDICATORS
Ecological interactions
Food system diversity
Ecosystem dependent livelihoods
Socio-ecological mobility

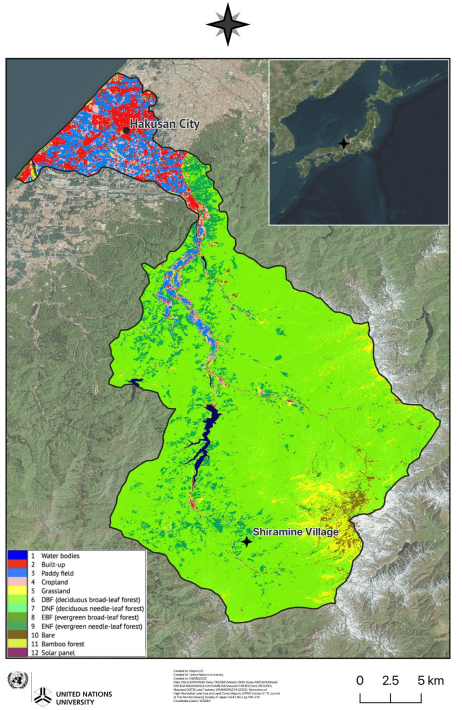
COMMUNITY SOLUTIONS
Promoting sustainable tourism
Youth entrepreneurship/volunteering
Nature activities - Hiking, Marathons
Passing down of traditional knowledge

ADAPTATION

SCIENCE	POLICY	PRACTICE
Vulnerability	Preservation	Community engagement
Impact	Tourism	Entreprenuership



LULC of Mount Hakusan Tedori-river Geopark



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