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

- **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).
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

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

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

Himangana Gupta, Maiiko Nishi, Alexandros Gasparratos
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- Impact of dam construction
- Loss of apple production
- Loss of local knowledge
- Impact of construction
- More construction companies
- Loss of water resources
- Traditional livelihoods lost
- Depopulation
- Landslides

- Community speak
- Social
- Environment
- Economic
- Social
- Environment
- Economic

- KINNAUR, INDIA
- HAKUSAN, JAPAN
Community response

**Climate change**

**KEY STAKEHOLDERS**
- City/local government
- Academia
- Private sector
- Local NGOs
- Local people

**KINNAUR, INDIA**
- **KEY INDICATORS**
  - Landscape diversity
  - Food system diversity
  - Socio-ecological mobility
  - Income diversity

**HAKUSAN, JAPAN**
- **KEY INDICATORS**
  - Ecological interactions
  - Food system diversity
  - Ecosystem dependent livelihoods
  - Socio-ecological mobility

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

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

**ADAPTATION**

**SCIENCE**
- Vulnerability
- Impact

**POLICY**
- Preservation
- Tourism

**PRACTICE**
- Community engagement
- Entrepreneurship