Opportunities and challenges of mountain food systems - entry points for transformation

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Structure of the talk

- Challenges in mountain food systems
- Definition of a food system
- Sustainability and justice in food systems
- Entry points for transformation

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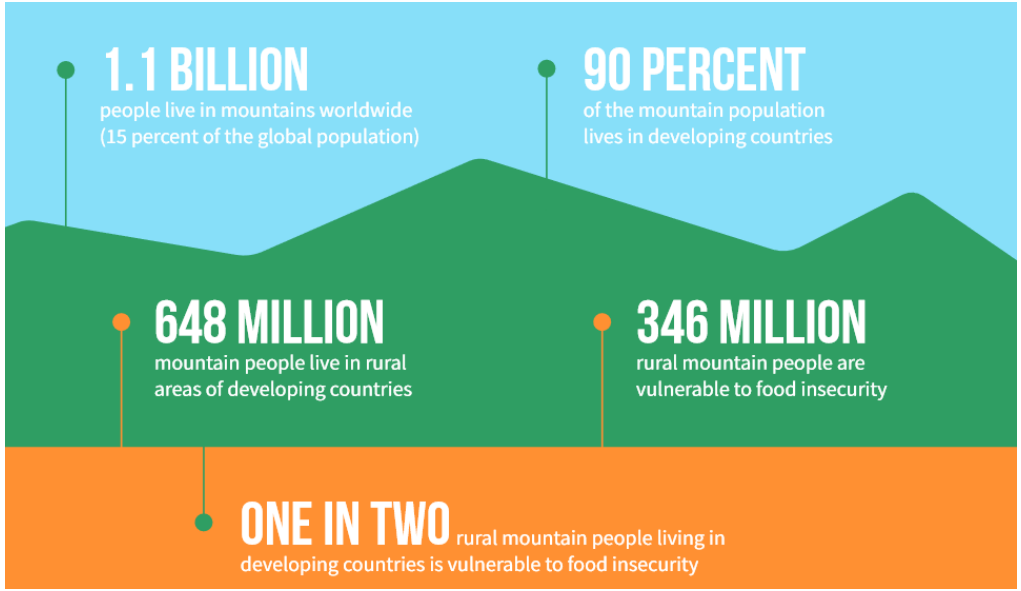
Challenges in mountain food systems: food insecurity



FAO 2022: Vulnerability of mountain peoples to food insecurity

Vulnerability to food insecurity:

- Physical access (remoteness in space, infrastructure, markets, decision-making processes)
- Economic access (education, poverty, social and gender inequality)
- Natural hazards, land degradation and conflicts

➢ Numbers are on the rise

Challenges in mountain food systems: climate change and natural hazards

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Photo: VAW-ETHZ

Photo: NZZ 2017

Climate change:

- Supply for drinking water and irrigation

Extreme events:

- Landslides, droughts, snowfall in summer

Challenges in mountain food systems: land use change

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Plane view of deforestation-induced erosion in Madagascar. Click image for more information. (Photo by R. Butler)

Land degradation:

- Multi-dimensional (deforestation, resource extraction, agricultural conversion)
- Potential contributions to greenhouse gas emissions
- Reinforcing risk for natural hazards

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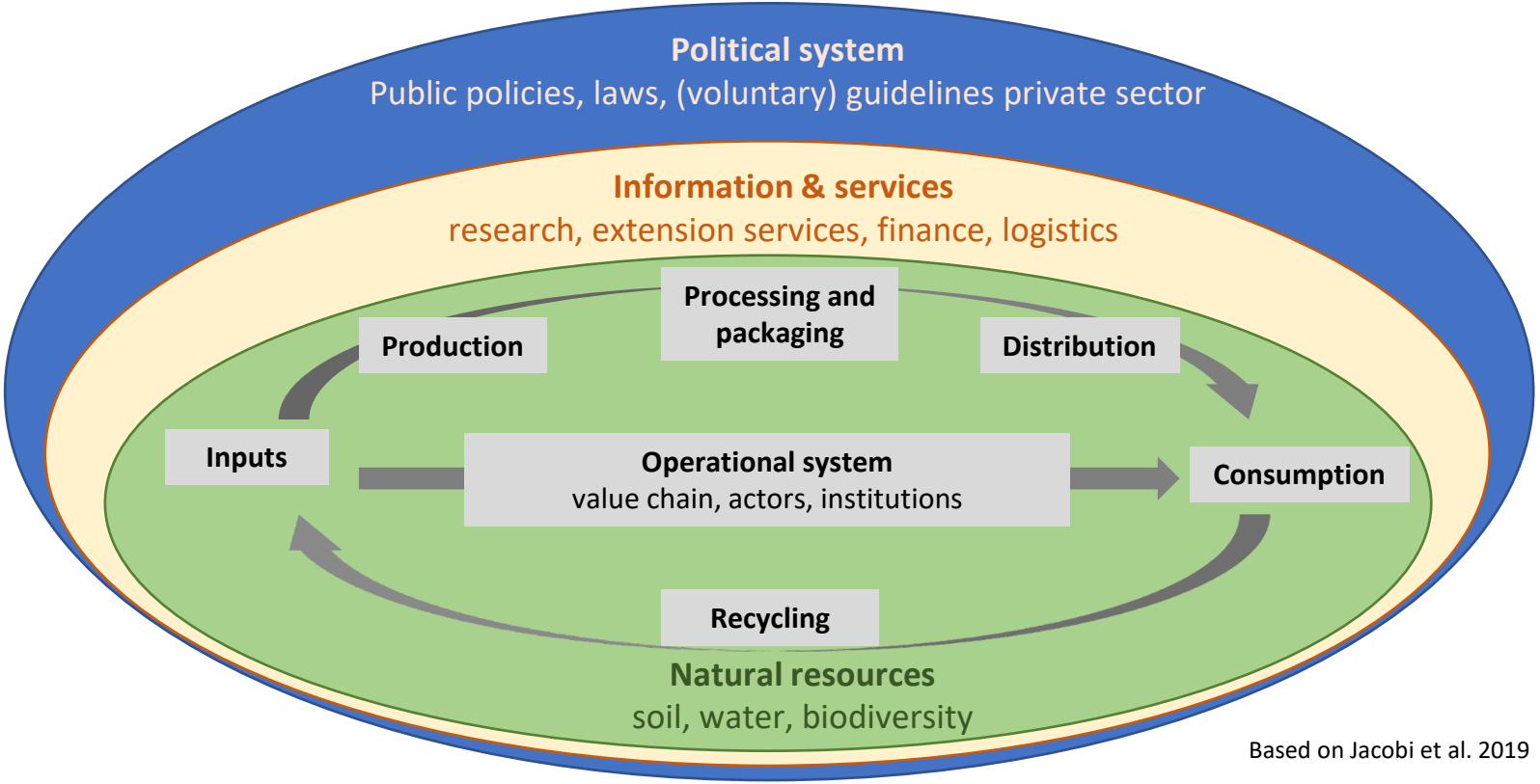
Food system definition



Based on Jacobi et al. 2019

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Cheese: a food system example

Research: balance between robustness and performance
Finance: investments in animal-friendly stables

Sectoral organisation: BOM defines target price for different milk segments

Feed, medicines → Milk production through dairy farmer → Cheese making on the alp → Sale in local shop → Consumption at home

Cows need grass, hey, fresh water and potentially other feed

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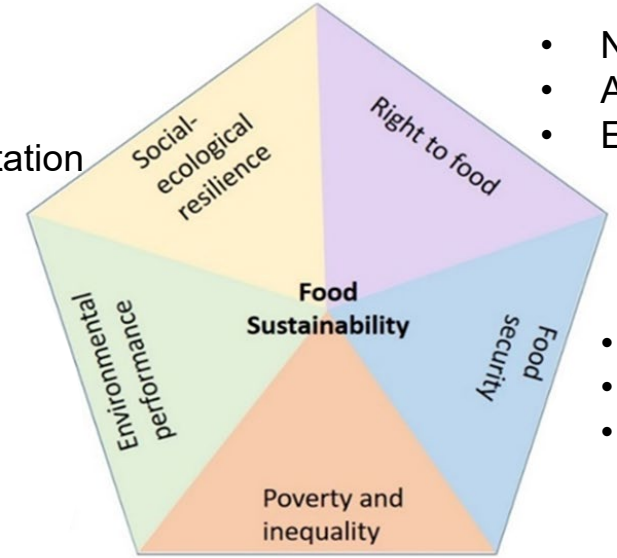
What makes food systems sustainable?

- Buffer capacity
- Self-organization
- Learning and adaptation

- Non-discrimination
- Access to information
- Effective participation



- Landscape management
- Carbon footprint
- Health impacts

- Household level
- Power relations
- Capacity to store and process food

- Income and expenditure
- Access to infrastructure
- Performance of value chains

Rist and Jacobi, 2016

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What role does justice play in this?

What does it mean to transition from current food systems towards sustainable, healthy and climate-friendly food systems in a just way?

Tribaldos and Kortetmäki, 2022

Characteristics of mountain food systems

- Limiting topography and climate
  - Resilient cultural and social traditions, specific governance mechanisms
  - Primarily pastoralists and small-scale farmers
  - Traditional and indigenous knowledge systems
  - Sustainable agricultural techniques and biodiversity richness
  - Marginalization, poverty and inequality, environmental hazards, food insecurity
- Attractive places for tourism and opportunities for income generation

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Entry points for transformation: Governance mechanisms

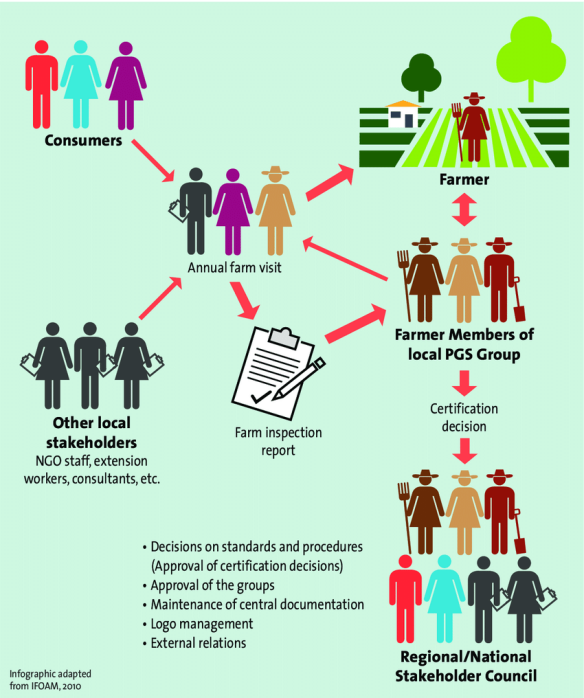
Traditional irrigation for water and nutrients

A combination of infrastructure, techniques, organisational structures and institutions, cultural practice and knowledge

Photo: Karina Liechti

Participatory guarantee systems

- Collective management, control and support for organic agriculture
- Credibility and trust
- Replacing expensive labels



African Centre for Biodiversity, 2019

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Entry points for transformation: Agricultural techniques

Agroforestry combining forestry and crops or animal husbandry:

- Biodiversity
- Carbon-capture and storage
- Protection from sun and extreme weather

Foto: Wikipedia

Foto: World Atlas

www.cheval-jura.ch

Terrace farming:

- Cultivation in and stabilization of steep slopes
- Prevention of soil erosion
- Support for water harvesting and conservation

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Entry points for transformation: Value chains, marketing, and territorial branding

100%

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Pro Montagna

Thank you!

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