

Water Stress in the Mediterranean Islands: Building resilience at multiple levels

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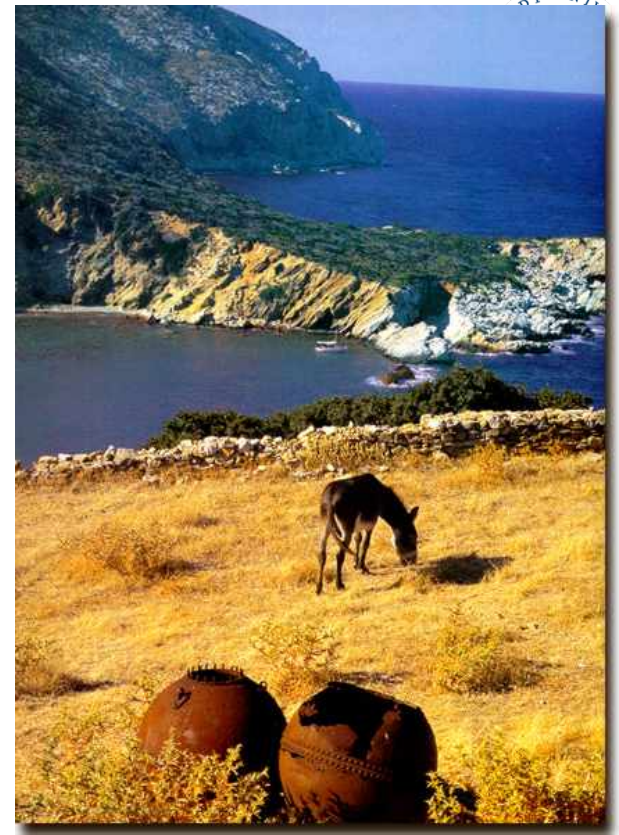
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Outline

- Background
- Research Questions
- Analytical Framework
- Main Theories
- Methodology

Background





Islands

Physical

- ❑ Small size
- ❑ Mountainous terrain
- ❑ Limited range of economic activities possible
- ❑ Fragile and rich ecosystems
- ❑ Situated in archipelago: costs and complexity for infrastructure and transport networks
- ❑ Overexploitation of natural resources
- ❑ Climate change intensifies stress

Water - 1

- ❑ Negligible fresh-water quantities
- ❑ Dependence on groundwater / sea-water intrusion
- ❑ Water shortages
- ❑ Imports of drinking water with tankers from mainland
(In 2003, 80% of islands in the Aegean imported potable water)
- ❑ Water demand peaks on summer, when water is most scarce

Water - 2

- ❑ Summer tourism major user of water:
 - Cyclades up to 10 times higher demand;
 - Balearic islands: 1 month's consumption 20% higher than local's consumption for a year!
- ❑ Desalination plants as possible solutions, but environmental impacts and costly in social, economic, and environmental terms
- Conflicts of interest between main users: agriculture, tourism, domestic, ecosystems

Economic

Per capita GDP much lower than national

Main economic activities:

- fishery and agriculture (specialised, unmodernised)
- Tourism (specialised, seasonal)

Often collide, because of water demand or changing land uses.

Not resilient to shocks and based on aid and concessions by the government to compensate for high transport (and other) costs.

Social - Political

- ❑ Member States of the European Union
- ❑ Aging population
- ❑ Crisis-stricken

Problem Statement in a Nutshell

Mediterranean Islands:

Water scarcity

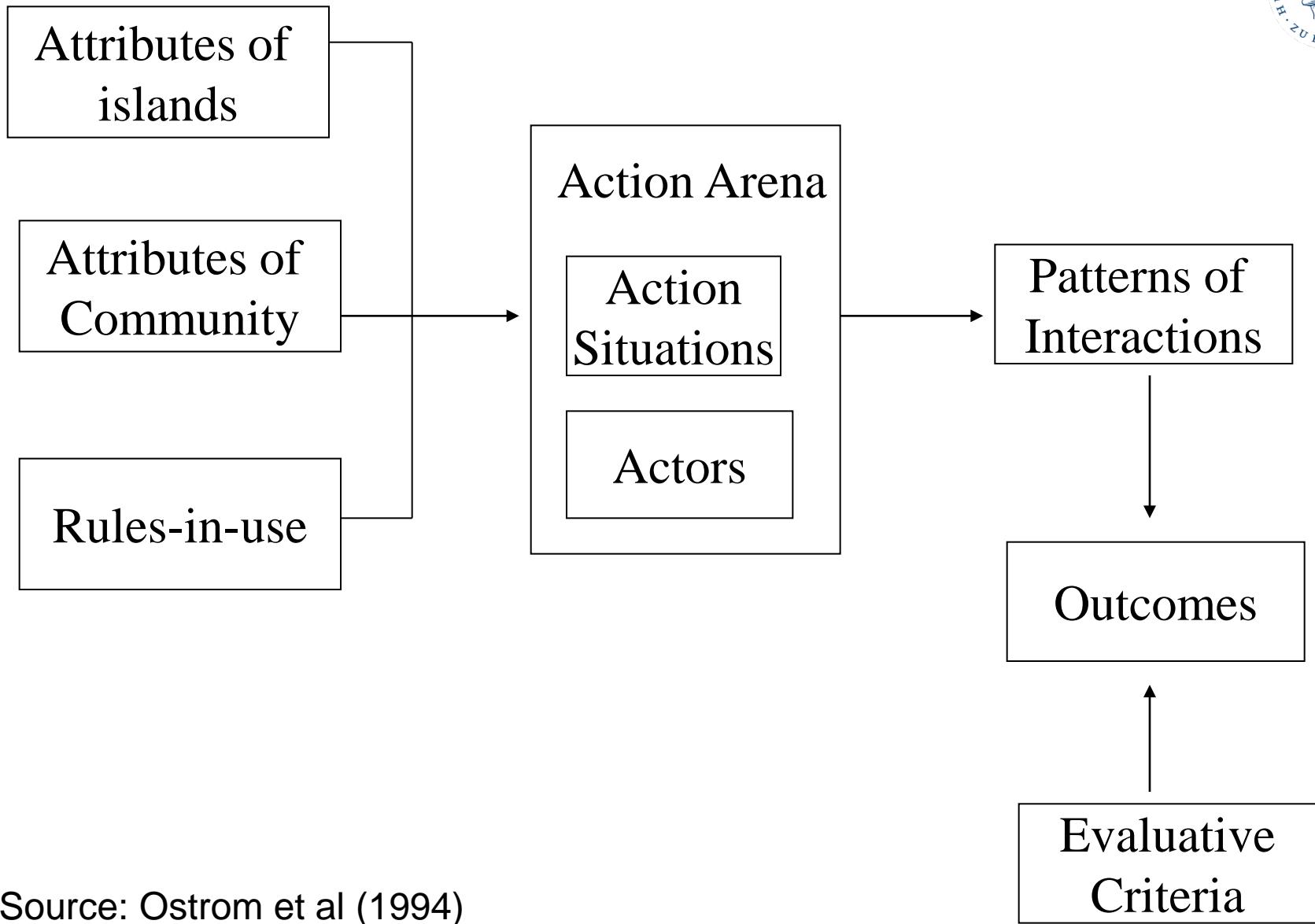
- + Increased water demand
- + Conflict of interest between users/uses
- + Water-intensive tourism
- + Institutional „obligations“ (WFD and other directives)
- =
- ?.....How do local populations deal with water scarcity?

Research Questions

1. How are island communities able to reduce their vulnerability to water stress? Which measures are taken up by different communities?
2. How does the institutional setting of each country affect islands' capacity to decrease vulnerabilities? What is the role of the E.U in this respect?
3. What lessons can be learned from successes and failures?

So, RQs summarised as
institutional resilience,
innovation
diversity

Analytical Framework



Source: Ostrom et al (1994)

Main Theories

- Theory of Co-evolution
Natural and social system co-evolve and are interdependent.

- Collective Action
Resources presenting high values and usable with benefit for a larger user community

- Water as a Common-Pool Resource (CPR)
(low excludability, high subtractability)
Institutional arrangements (internal) can overcome problems of CPR depletion arising from selfish behaviour

□ Multi-level Governance

Responsive interplay between different levels (trans- or inter-national and sub-national regimes and indigenous institutions)

Methodology

Empirical Methodology

- Two-steps
 1. First step: exploratory interviews, maintaining/establishing local contacts
 2. Second step: in-depth interviews. Focus groups and elements of action research.

Data Analysis

Comparison between the islands

Mainly qualitative.

QCA (Qualitative Comparative Analysis)

Thank you for your
attention!