

Adaptation to climate change: A role for local knowledge?

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Background: PhD study

- Focus on the role of local knowledge in adaptation to climate change
 - Existence of local level responses to drought, how they work, and their efficiency (knowledge, practices, institutions), including perceptions of changes in the physical environment as well as the local ways of tackling climatic events
 - Implications for future adaptation strategies
- Case study: two villages in semi-arid central Tanzania
 - Looking at adaptive responses to current climate variability
 - Lessons for future adaptation
 - Quantitative and qualitative methods
 - Questionnaire interviews
 - Semi-structured interviews
 - Group discussions (elders, community leaders)

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Scope for integrating local knowledge in adaptation to climate change

- Background
- Conceptual linkages
- Challenges

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Increasing attention to local knowledge and climate change

- Climate Convention (*e.g.*, 2003 UNFCCC workshop, 2004 Conference of the Parties)
- IPCC 2001 and 2007 (some references)
- Arctic research (*e.g.*, Arctic Climate Impact Assessment, 2004; Berkes and Riedlinger, 2001; Krupnik and Jolly, 2001)
- Active local and indigenous people's groups (Arctic, tropical regions)
- Emerging research interest in other regions

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Reasons for increased attention

- Adaptation as a social issue
- Need for understanding of adaptation at the local level
- Local knowledge as "resources of the poor"
- Powerful political messages from local and indigenous people

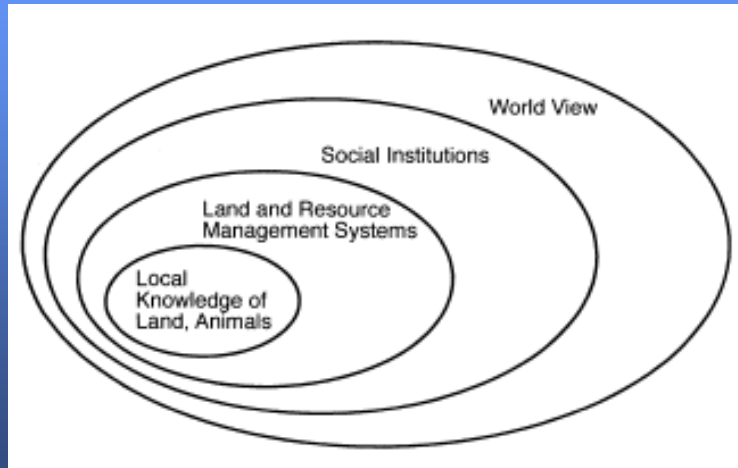
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What is local knowledge?

- Knowledge outside the formal scientific domain, held by people in a particular geographic location
- Often used interchangeably with indigenous or traditional knowledge, many terms and definitions (LK, IK, TK, ITK, LEK, TEK, etc.)
- Based on experience, informal, tacit, dynamic and evolving, embedded in cultures, socially differentiated
- Incorporates practices as well as beliefs and value systems

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Local knowledge as embedded in knowledge-practice-belief complex



Berkes et al. (2000) 7

Groups of literature on climate and local knowledge

- Seasonal climate forecasting
 - *E.g.*, integration of traditional indicators and scientific forecasts
- Climate-related risks and disasters
 - *E.g.*, local strategies for coping and recovery
- Resource management and livelihoods
 - Skills, management and institutions (crops, livestock, natural resources, soil and water management, etc.)

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Local knowledge and adaptation

- Adaptation: “adjustments in a system’s behaviour and characteristics that enhance its ability to cope with external stresses” (Brooks, 2003)
 - A *process* involving reductions in *vulnerability*, where $v=f(\text{exposure, sensitivity, adaptive capacity})$
- ⇒ Role of local knowledge: to what extent it addresses factors determining vulnerability to climate change and the processes involved in adaptation

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Three key areas

- Biophysical exposure of societies
- Adaptive capacity of societies
- Processes of adaptation

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Factors affecting exposure and sensitivity

- Building techniques
- Location of settlements
- Protection of ecosystems (defenses against climate extremes, food security, water resources)
- Seasonal mobility (crop land, livestock)
- Flexibility in resource management systems (timing, resource use)
- Warning systems and evacuation strategies

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Factors affecting adaptive capacity

- Perceptions of change
- Systems for food sharing during hungers, and changes in these
- Institutions for managing resource access
- Networks for coping and recovery
- Oral history of past climate events

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Insights into adaptation processes

- Oral history of population groups and communities and their use of resources to adapt to climate variability
- Communication needs and processes
- Barriers to institutional change
- Social differentiation of knowledge and access to resources
- People's ability to use local knowledge in a policy context

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The role of local knowledge: key challenges

- Relevance of local knowledge to face climate change?
 - Relevant in the past, not relevant anymore?
 - Or more relevant as the climate changes?
- Differences in view on local knowledge
 - Inputs to formal science (observations)
 - Understanding of the social context
 - How to “upscale” local experiences and use them outside areas of origin
- Professional, institutional and political issues
 - Structures favouring formal science (education, governing institutions)
 - Economic interests
 - Power relations (governance, land rights)

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Concluding remarks

- Focus attention to knowledge and resources of vulnerable groups
- Opportunity to put climate change in a historical context
- Demonstrates that there are no easy fixes for social adaptation to climate change
- Conceptual and practical challenges to its application

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Thank you

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