

Autonomous Adaptive Capacity to Environmental Change in Peri-Urban Dar es Salaam

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Content

- Conceptualizing Vulnerability
- Adaptive Capacity (adaptive capacity and planning)
- Focusing on Peri-urban areas
- Investigating Autonomous Adaptive Capacity in Dar es Salaam

Conceptualizing Vulnerability

- **Vulnerability** = Exposure + Sensitivity – Adaptive Capacity



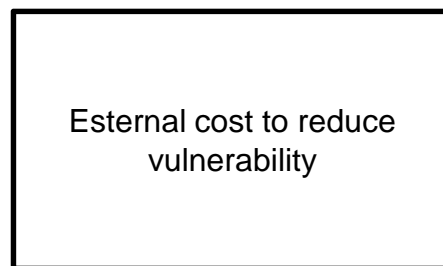
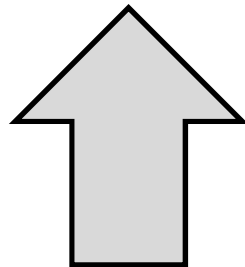
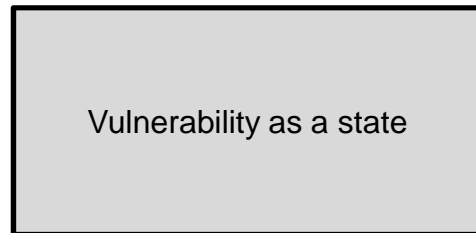
- Vulnerability is the degree to which a system is susceptible to, and unable to cope with, adverse effects of *climate change*, including *climate variability* and extremes. Vulnerability is a function of the character, **magnitude, and rate** of climate change and variation to which a system is **exposed**, its **sensitivity**, and its **adaptive capacity**.

Outcome vulnerability



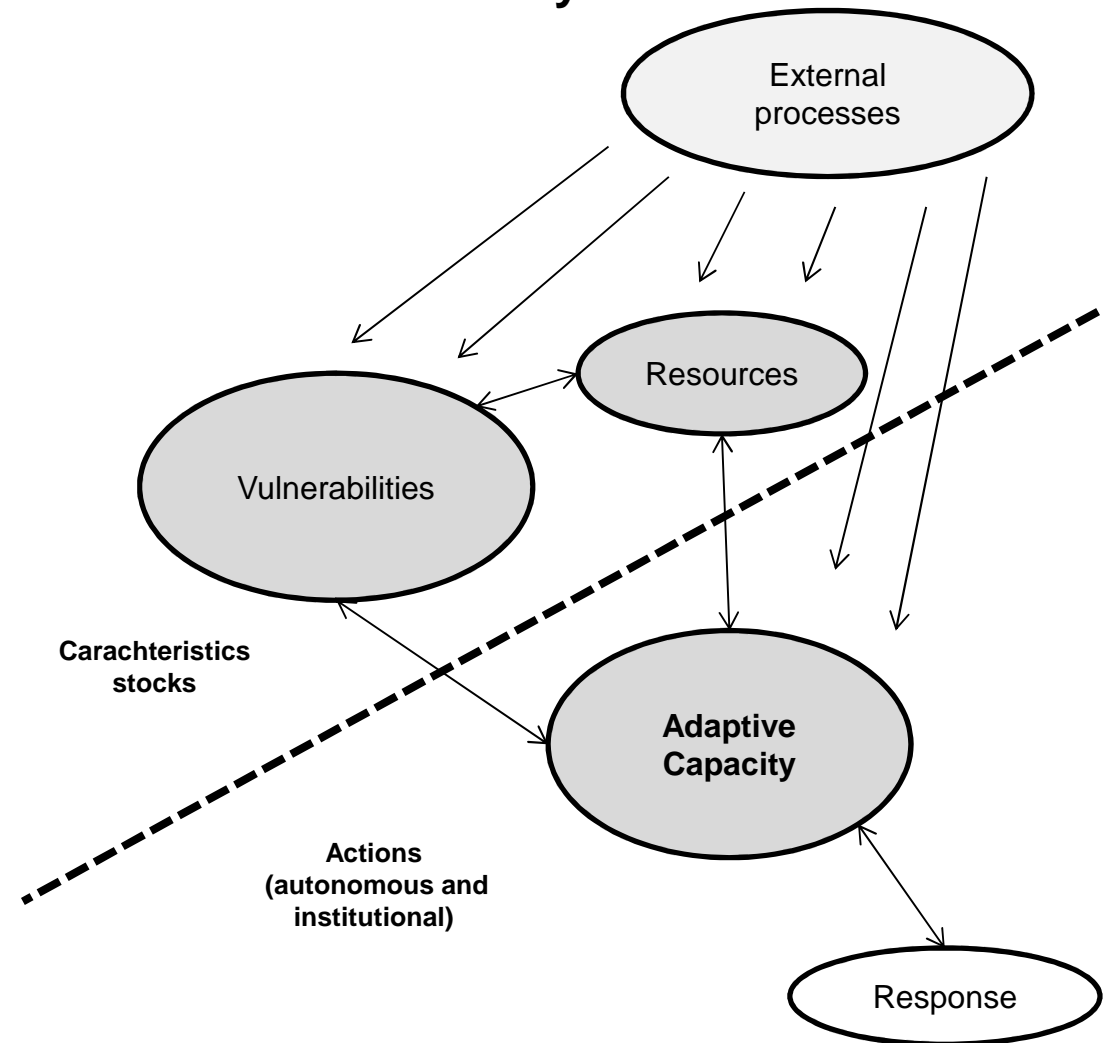
Contextual vulnerability

Outcome vulnerability



Source: adapted from Maguire e Cartwright, 2008

Contextual vulnerability



Vulnerability and Adaptive Capacity

Why focusing on Adaptive Capacity

- **Vulnerability** = Exposure + Sensitivity – **Adaptive Capacity**



- *a “system’s ability to adjust to a disturbance, moderate potential damage, take advantage of opportunities and cope with the consequences of a transformation that occurs” (Gallopín, 2006)*
- the ability of a system to adjust to *climate change* (including *climate variability* and extremes) to moderate potential damages, to take advantage of opportunities, or to cope with the consequences. (IPCC, Glossario del WG II)

- *“the capacity to modify exposure to risks associated with climate change, absorb and recover from losses stemming from climate impacts, and exploit new opportunities that arise in the process of adaptation” (Adger and Vincent 2005)*

Adaptive Capacity and Planning

Why focusing on Adaptive Capacity

- **Vulnerability** = Exposure + Sensitivity – **Adaptive Capacity**



Adaptive Capacity and Planning

- Adaptive capacity can be a major influence on the eventual impacts of CC.
- It is strictly linked to social systems and capable of influencing them as they cope with CC.

Institutions need to support social actors to proactively respond to changes

Focusing on Peri-urban Areas

- Challenges and opportunities linked to the interaction between current environmental changes and urban development

Peri-urban areas have accommodated **most of the demographic expansion** in sub-saharan cities. This processes have shaped highly fragmented and dynamic rural-urban interfaces, characterized by constantly changing land uses, activities, social and institutional arrangements

- Challenges and opportunities linked to a strong relationship to environmental changes

Residents have a heavy dependence on **natural resources** (“rural” and the “urban” are extremely intertwined)

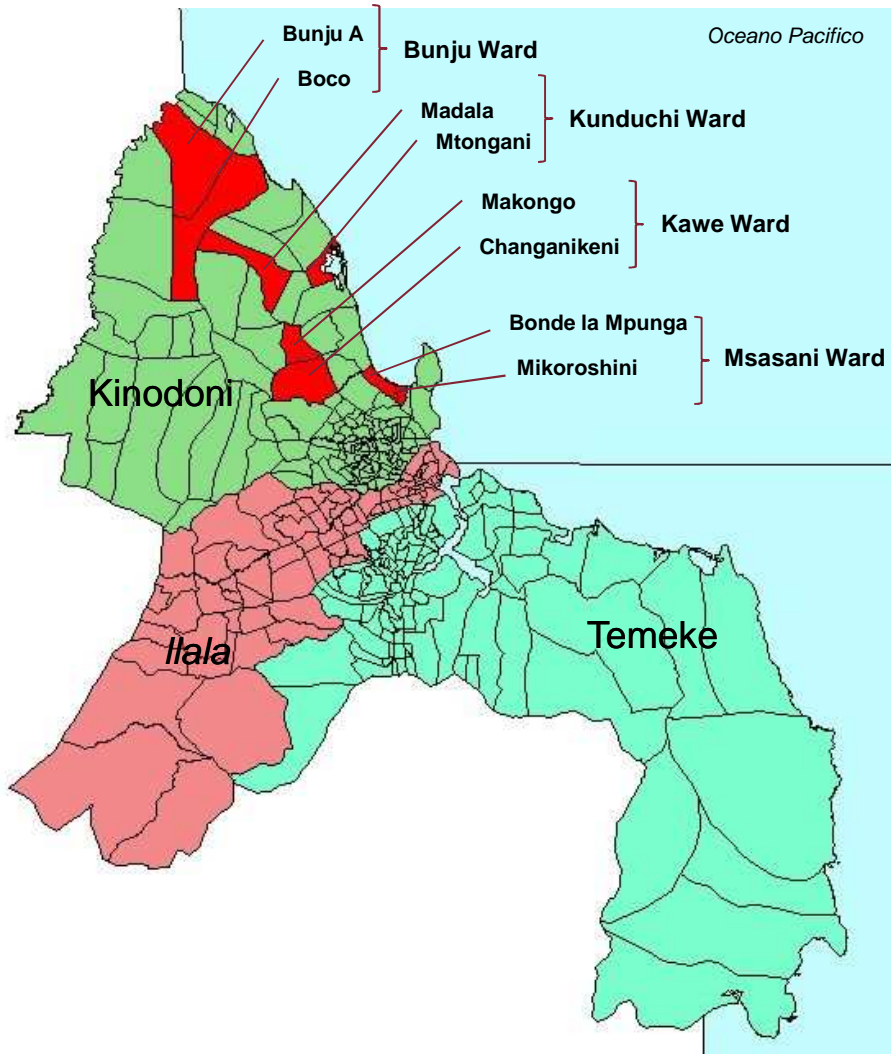
How the **interacting dynamics of livelihood, institutional activities, rural-urban interplay** and **environmental change** offer both opportunities and challenges for enhancing peoples’ adaptive capacity?

Investigating Autonomous Adaptive Capacity

The ability of PU communities to adapt to climate change depends on four main factors:

- *Type and magnitude of local environmental impacts of climate change;*
- *Rural-urban dynamics, land-use patterns and urban fabric;*
- *Local autonomous capacity to cope with climate change effects;*
- *Institutional capacity in environmental management and urban development planning.*

Investigating Autonomous Adaptive Capacity



Areas of Investigation

- Rural-urban interaction
 - Access to resources (land, water, energy, etc.)
 - Environmental management (water, waste, soil, etc.)
 - Climate change: environmental transformations and **autonomous adaptation strategies**
- Red arrows point from the first three items to the fourth item, indicating a flow of influence or relationship.

Autonomous Adaptation Strategies

Implemented adaptation strategies

- changed crop systems (e.g. moving from rice to cassava, which requires less water)
- stop farming and start keeping livestock
- digging for water harvesting
- making embankments
-

Foreseen adaptation strategies

- change of employment, (or transition from activities dependent on natural resources to activities only partially or indirectly dependent on them; e.g. trade or small business).
- moving to another area or returning to their rural native region
- look for temporary job
- Intensify/introduce agriculture and livestock
- ...

Autonomous Adaptation Strategies



river embankments

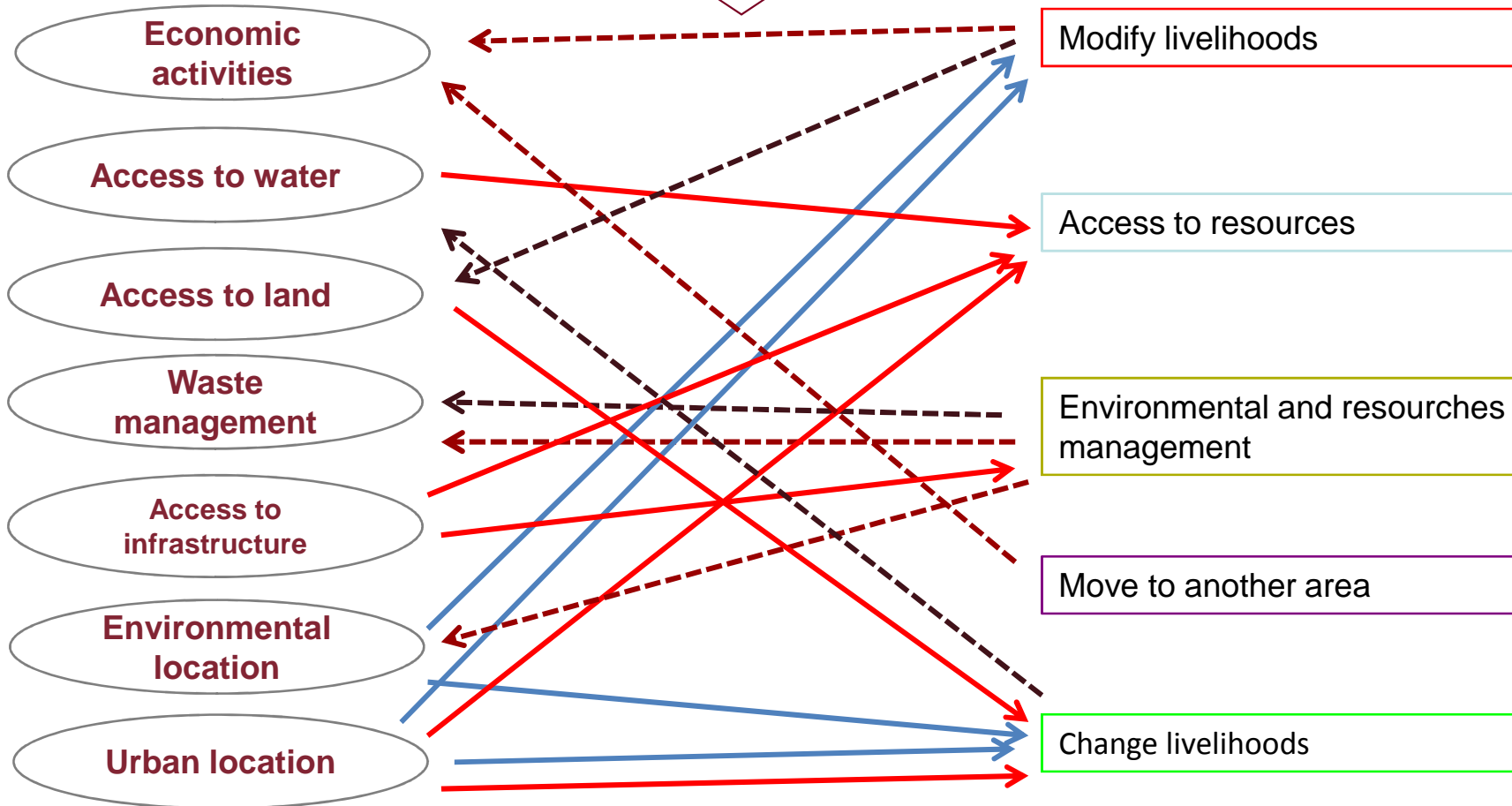


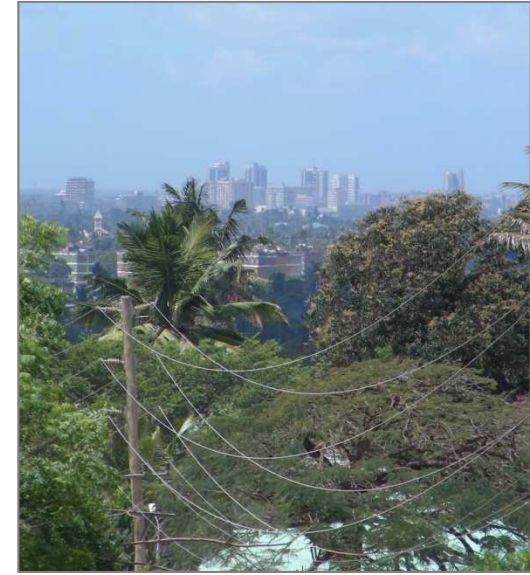
shallow pit

Institutional Adaptation

Peri-urban Characteristics

Autonomous Adaptation





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