

COMMUNITY STRATEGIES FOR ECOSYSTEM MANAGEMENT

**KOFI AKAMANI, ASSISTANT PROFESSOR, DEPARTMENT OF
FORESTRY, SOUTHERN ILLINOIS UNIVERSITY**

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CHANGING PARADIGMS

- Sustainable development
 - Development that addresses the needs of the present generation without compromising the ability of future generations to meet their own needs (WCED 1987: 43)
- Dimensions of sustainability
 - Social
 - Ecological
 - Economic
 - Institutional

CHANGING PARADIGMS

- Problematic assumptions in past resource management approaches (Folke et al. 2002; Folke 2016)
 - That ecosystem responses are linear, predictable, and controllable
 - That human and natural systems are separate and distinct from each other

CHANGING PARADIGMS

Complex adaptive social-ecological systems (Berkes 2007; Liu et al. 2007; Ostrom 2009)

- Humans as integral part of nature
- Emergence
- Surprise
- Scale-sensitivity
- Path-dependence

CHANGING PARADIGMS

- Social-ecological resilience (Folke et al. 2002)
 - The amount of disturbance a system can absorb
 - Capacity for self-organization
 - Capacity for learning and adaptation
- Dimensions of social-ecological resilience
 - Coping
 - Adaptability
 - Transformability

CHANGING PARADIGMS

Alternative forest management regimes (Loomis 2002; Swanson and Chapin 2009; Cubbage et al. 2017)

- Sustained yield forest management
- Multiple use sustained yield management
- Ecosystem management

MULTIPLE USE SUSTAINED YIELD

Key features (Cortner and Moote 1999; Swanson and Chapin 2009)

- Emphasis on prediction and control
- Prioritization of efficiency and output maximization
- Reliance on reductionist science
- Reliance on centralized institutions

MULTIPLE USE SUSTAINED YIELD

Shortfalls (Cortner and Moote 1999; Swanson and Chapin 2009)

- Over-emphasis on economic benefits
- Neglect of social and ecological values
- Inadequate consideration of large spatial scales
- Inadequate stakeholder involvement
- Neglect of social-ecological complexity

ECOSYSTEM MANAGEMENT

Key features

- A complex systems perspective on human-environment interactions (Grumbine 1994; Chapin et al. 2010; Folke et al. 2011)
- Integrated management goals that require coordinated management across scales and sectors (Thomas 2006; Folke et al. 2011)

ECOSYSTEM MANAGEMENT

Key features

- Integration of diverse sources of knowledge, including scientific and traditional knowledge (Cortner and Moote 1999; Swanson and Chapin 2009)
- Collaborative and adaptable institutional mechanisms (Butler and Koontz 2005; Behnken et al. 2016)

ECOSYSTEM MANAGEMENT

Transitions to ecosystem management: Enabling conditions (Gunderson and Light 2006; Olsson et al. 2008; Osterblom and Folke 2013)

- Incentives
- Enabling legislation
- Bridging organizations
- Arenas for interaction
- Leadership
- Crises (e.g. conflicts)

COMMUNITY SUSTAINABILITY

Transitions in forest-dependent community sustainability (Magis 2010; Akamani 2012)

- Community stability and sustained yield
- Community resilience and ecosystem management

COMMUNITY SUSTAINABILITY

Community stability (Machlis and Force 1990)

- Definition
 - Constancy in income, employment, price and output of wood and other economic measures
 - Aims at stabilizing community socio-economic conditions through the constant and predictable supply of timber to local mills

COMMUNITY SUSTAINABILITY

Community stability (Donoghue and Sturtevant 2008; Akamani 2012)

- Critique
 - Flawed assumption of predictability of forests and stability of communities
 - Assumes direct cause-effect relationship between timber production and community stability
 - Narrow emphasis on economic dependence of communities on forests
 - Failure to recognize community agency

COMMUNITY SUSTAINABILITY

Community resilience

- Community resilience
 - “a town’s ability to manage change and adapt to it in positive, constructive ways” (Harris et al. 1998: 13)
 - “the existence, development, and engagement of community resources by community members to thrive in an environment characterized by change, uncertainty, unpredictability, and surprise” (Magis 2010: 401)

COMMUNITY SUSTAINABILITY

Why community resilience?

- Dynamic and complex view of community-forest relations (Haynes, 2003)
- Broad measure of well-being as a function of economic and non-economic variables (Donoghue & Haynes, 2002)
- Emphasis on the community's ability to adapt to drivers of change (Magis, 2008; Akamani, 2012)

COMMUNITY SUSTAINABILITY

Sources of community resilience (Beckley 2008; Magis 2010; Akamani 2012)

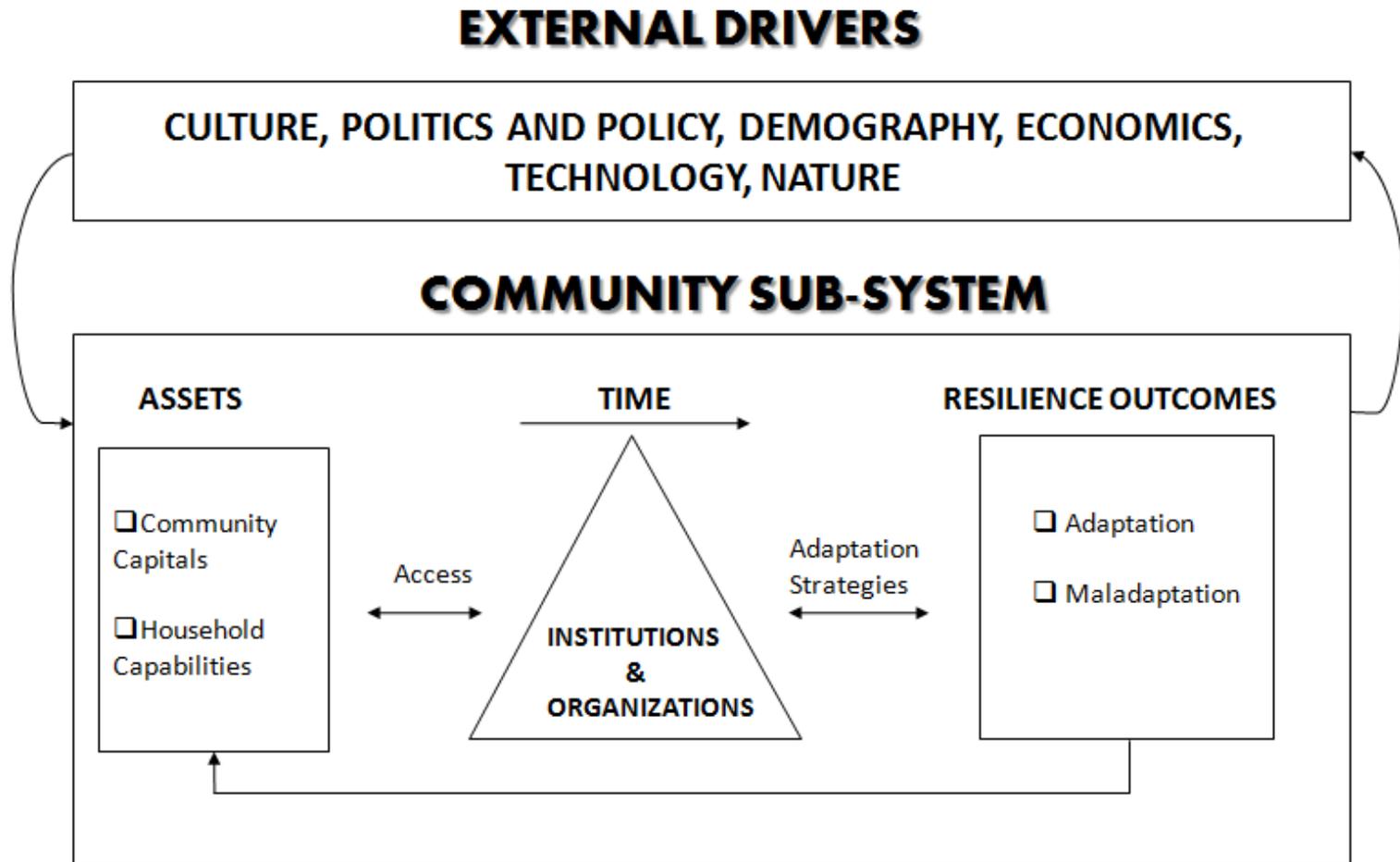
- Social capital
 - Social norms and networks of trust and reciprocity that engender cooperative behavior and collective action
- Economic capital
 - Financial assets, opportunities for income and employment, and other sources of livelihood and well-being
- Human capital
 - Knowledge, skills and other attributes that enable community members to make informed decisions and engage in activities that contribute to well-being
- Physical capital
 - Availability and access to various forms of infrastructure, e.g. housing, transportation, water, electricity, health, education etc
- Natural capital
 - The stock of natural resources and rights of access to such resources

COMMUNITY SUSTAINABILITY

Sources of community resilience (Agrawal and Perrin 2008; Akamani et al. 2015)

- Role of institutions and organizations
 - Enhancing awareness
 - Providing incentives
 - Enhancing access to resources
 - Providing opportunities for action

THE COMMUNITY RESILIENCE MODEL



POLICY IMPLICATIONS

Barriers and opportunities for enhancing community resilience in the era of ecosystem management (Charnley et al. 2008; Akamani 2012)

- Policy design and implementation process
- Community institutional capacity
- Community capital assets
- Influence of external drivers

CONCLUDING REMARKS

- Approaches to sustaining forest-dependent communities have shifted from community stability to community resilience in response to changing forest policies
- Building the resilience of communities enhances the likelihood of community sustainability in the face of climate change impacts and other drivers of change
- Need for research and policies on the required information, incentives, resources and opportunities for enhancing community resilience

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