

Ingredients for Social-ecological Resilience, Poverty Traps, and Adaptive Social Protection in Semi-Arid Africa

TSCHAKERT, Petra and SHAFFER, L. Jen

Pennsylvania State University, Pennsylvania, USA

TSCHAKERT, Petra is associate professor of Geography and the Earth and Environmental Systems Institute (EESI) at the Pennsylvania State University. She received her M.Phil. in Geography, Economics, and French at the Karl Franzens Universität in Graz, Austria (1991) and her Ph.D. in Arid Lands Resource Sciences and Applied Anthropology at the University of Arizona (2003). She was a post-doctoral fellow in the Department of Biology and the Centre for Global and Climate Change at McGill University in Montreal, Canada (2003-04). She joined Penn State as assistant professor in 2005. Her major fields of interest are human-environment relations among marginal populations in Africa, environmental justice, climate change adaptation, and participatory methods for collective learning. She is lead author on the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), Chapter 13 (“Livelihoods and Poverty”) of the Working Group II Impacts, Adaptation, and Vulnerability. Her major publications in this area include “Anticipatory learning for climate change adaptation and resilience,” with co-author K. Dietrich (*Ecology and Society*, 2010), “Floods in the Sahel: An analysis of anomalies, memory, and anticipatory learning,” with co-authors R. Sagoe, G. Darko, and S.N. Codjoe (*Climatic Change*, 2010), “Views from the vulnerable: Perceptions on climatic and other stressors in the Sahel” (*Global Environmental Change*, 2007), and “The sadness in environmental change: Visualizing pathological homes,” with co-authors R. Tutu and A. Alcaro (*Emotion, Space and Society*, forthcoming).

SHAFFER, L. Jen has been a postdoctoral scholar in Geography at the Pennsylvania State University since 2010. She received her B.S. in Biology (Ecology & Systematics) from Cornell University (1994), an M.S. in Environmental Studies from the University of Oregon (1999) and Ph.D. in Ecological & Environmental Anthropology from the University of Georgia (2009). Broadly, her research focuses on the reciprocal relationship between African savanna landscapes and cultures. Specific interests include historical ecology, indigenous knowledge, livelihoods and food security, adaptation to environmental uncertainty, and citizen science/science education. As part of Penn State’s research project on anticipatory learning for climate change adaptation and resilience, she has co-developed a community-based environmental monitoring program in four rural Tanzanian communities. Her publications include “Indigenous fire use to manage savanna landscapes in southern Mozambique” (*Fire Ecology*, 2010), “A landscape of possibilities: seeking food security in Matutúine District, Mozambique” (*Ecological and Environmental Anthropology*, 2008), and “Why analyze mental models of local climate change?: A case from southern Mozambique,” with co-author L. Naiene (*Weather, Climate and Society*, under review). In January 2012, she will join the Department of Anthropology at the University of Maryland as an assistant professor.

Abstract

Resilience is much more than bouncing back after a shock. It also involves the ability of individuals, communities, and entire regions to self-organize and increase their capacity for learning, experimentation, and adaptation. In the context of climate change, a resilience perspective emphasizes learning from the past (memory), monitoring the present, and the ability to anticipate and prepare for the worst. It includes learning to live with change and uncertainty by combining different types of knowledge, envisioning possible futures, and enhancing flexibility in decision-making and planning. Rather than learning by shock, a resilience lens offers a potentially empowering arena for nurturing innovation and the capacity to transform in order to navigate both slow and creeping environmental changes and rapid-onset crises.

This paper explores the role and potential limits of iterative learning processes for climate change adaptation in rural African communities characterized by high and chronic poverty, coupled with low awareness for complex drivers of change. It stresses learning, memory, creativity, and the need to move forward in spite of imperfect knowledge and vast uncertainties. At the same time, the paper identifies critical institutional, policy, and power barriers, and potential limits at multiple scales that inhibit just and timely adaptation among vulnerable and marginalized populations, especially those dependent on rainfed agriculture. We identify poverty traps as complex thresholds typified by shifts and losses of key household assets, increasing failure of livelihood response strategies to social and ecological stresses and shocks, vertically-constrained social networks, and limited anticipatory capacity to embrace change, uncertainty, and surprises. We conclude by proposing adaptive social protection as a prospective yet potentially insufficient means for bypassing or escaping poverty traps in the semi-arid tropics of Africa, and facilitating transitions towards livelihood resilience.

Keywords: adaptive social protection; anticipatory learning; limits to adaptation; poverty traps