Livelihood Vulnerability and Village Economic Structure in Systems of Covariant Shocks

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The dry biomes of southern Africa are home to large numbers of charismatic megafauna. Animal biomass in these systems is limited by the metabolite production of the plants, and these plants are, in turn, limited by water. The natural system, typified by the diverse mix of browsers and grazers at varying levels of food selectivity, has been supplanted by the uniformity of ranching and agricultural systems. This has severely altered the dynamic nature of the ecosystem that has evolved between vegetation and high herbivore diversity, heavily contributing to desertification, bush encroachment and ultimately a reduction in yields of cattle and crops.

Yet there exist few livelihood alternatives to ranching and rain fed agriculture. The lack of viable alternatives to rural households increase livelihood vulnerability as the local system becomes progressively dryer and unpredictable in terms of rainfall. It is important to understand the interrelationship between covariant shocks and the local economic structure in order to design policy mechanisms that would both decrease vulnerability to shocks and maximize benefit to communities from their land while preserving its productivity.

Over the summer, I lived and worked in 7 rural communities along the border of Kruger National Park in South Africa. In this round of data collection, I conducted, with help of local research assistants, 430 randomly selected household interviews. To achieve a more dynamic understanding of household and village level impacts, I will employ two methods: the econometric method Vulnerability as Expected Poverty (VEP) and the development of village level Social Accounting Matrices.

While entitlements and factor endowments affect a household's income level and constrains the coupled consumption-production decisions of rural households, poverty and associated behavior of households, cannot be simply explained within these parameters. Vulnerability to risk events itself is a factor in the poverty equation and influences the household choice matrix by altering constraints. Vulnerable households face significant uncertainty that often results in the alteration of production/consumption choices away from maximizing benefit towards the mitigating of risk. Social vulnerability can be thought of as the interplay between the economic entitlements and the environment, which include: social aspects, such as proximity to urban centers and health facilities, natural resource endowments, such as access to fertile land, forest resources, minerals, etc., and climate, frequency of drought, flood events, and other weather events.

While communities have been shown to establish informal insurance mechanisms to aid in risk mitigation, these informal mechanisms are often brittle in the face of widespread regional or village shocks. Formal insurance mechanisms have the greatest security, but few people/communities in developing countries have access to formal insurance. As such, to fully understand the potential benefit of any policy aimed at poverty alleviation, such as CBNRM, an understanding of rural vulnerability with its associated influence on household decisions is crucial.

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