ABSTRACTS FOR WORKSHOP NO. 4:

MEASURING SOCIAL VULNERABILITY TO ENVIRONMENTAL HAZARDS

(in random order)

Measuring vulnerability to climate change: Why markets matter

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Abstract:
The prospect of a warmer global climate with increased climate variability and changing precipitation patterns across the world brings new challenges to research on poverty, food security and rural livelihoods in developing countries. It is widely recognized that the poorest share of the world's population is most vulnerable to these changes, both because of the limits poverty puts on their ability to adapt and their reliance on the natural environment for survival. However, there is little agreement across disciplines on how to measure vulnerability, or even how to define vulnerability. This paper will build on the literature on vulnerability to poverty[1] in order to evaluate existing literature and provide an approach to assessing vulnerability to climate change that takes into account market imperfections. The definition of vulnerability that will be used is based on the literature on vulnerability to poverty, and classifies vulnerable households as *households at risk of becoming poor or poorer due to climate change.*

Vulnerability to climate change in rural areas of developing countries is highly dependent on how markets function. Well-functioning markets for credit, labor and agricultural inputs and outputs may act as a buffer to climate variability by allowing households to manage and cope with risk due to climate change. In addition, the indirect effects of climate change are transmitted through prices for food, labor and the assets of households. The direct effects of climate change, for instance decreased yields of an important staple crop, can thus be magnified or mitigated through markets.

The global food and energy price crisis of 2007/2008 taught us the importance of prices for poor households in developing countries, and gave us a preview of a possible future of increased global food prices due to climate change (Hertel et al., 2010; Parry et al., 2005). The impact of higher food prices on agricultural households' welfare depends on whether the household is a net seller,

[1] See for instance Ligon and Schechter (2003), Kamanou and Morduch (2005) and Calvo and Dercon (2005).

net buyer or subsistence producer of food. Rural markets in developing countries are characterized by transaction costs and imperfect information, and the transaction costs each household faces determine its position in the market (Sadoulet and De Janvry, 1995). Taking into account household specific transactions costs is therefore important for providing accurate impact estimates and vulnerability assessments.

Measuring vulnerability to climate change without taking into account markets will misestimate vulnerability in two ways. First, measuring vulnerability without taking into account the indirect effects of climate change that are transmitted through markets and prices will give biased impact estimates. Second, assuming perfect markets will assume adaptation options for the household that are not real, and thus overestimate adaptation.

A review of some of the literature on impacts of climate change in sub-Saharan Africa that takes into account market effects shows that the use of aggregate impact assessment methods such as the Ricardian approach and the use of aggregate computable general equilibrium (CGE) models is likely to underestimate vulnerability to climate change in developing countries. Further, the paper suggests the use of CGE models with appropriately disaggregated household groups, taking into account market imperfections and limits to adaptation, to estimate poverty impacts of alternative climate scenarios. The estimated poverty impacts may then be used in an expected poverty measure of vulnerability. Some preliminary results using a simple CGE model of Malawi are presented, and suggestions for further development of the model are made.

References

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“Climate change, displacement and protection”

By Vikram Kolmannskog

ABSTRACT
Climate change is here and now. There is an increase in frequency and severity of climate-related disasters as well as changes in the location and timing of these. Disasters can lead to displacement. This paper first seeks to answer some of the basic questions about how people are displaced in the context of climate change, where and how many. The paper then focuses on the law and protection that applies to the displaced people. Although there is a framework that may apply to climate change-related internal displacement, there are still serious challenges on the ground. Some may also cross internationally recognised borders and have an uncertain legal status. A multi-track approach needs to be applied to fill the protection gaps, choosing a combination of solutions including contextual and dynamic interpretation of existing law and clarifying and creating new law. The paper concludes that consistent application of a natural disaster displacement monitoring methodology would be a necessary element for any improvement in the response for the displaced; and, states and humanitarian agencies should review policies, laws and institutional arrangements and take a multi-track approach when seeking to fill the protection gap in climate change, disasters and displacement.