Second RUFORUM Biennial Meeting 20 - 24 September 2010, Entebbe, Uganda

Research Application Summary

Understanding the gender dimensions of the impact of climate change on agriculture and adaptation among small holder farmers in eastern Uganda

Mangheni, M.N.[1], Bashaasha, B.[2] & Majaliwa, J.G.M.[3]
[1]Department of Agricultural and Extension Education, Makerere University, P. O. Box 7062, Kampala, Uganda
[2]Department of Agricultural Economics and Agribusiness, Makerere University, P. O. Box 7062, Kampala, Uganda
[3]Makerere University Institute of Environment and Natural Resource, Makerere University, P. O. Box 7062, Kampala, Uganda
Corresponding author: mnmangheni@agric.mak.ac.ug

Abstract

The way gender influences the impact and adaptation to climate change is not well understood. Therefore, the overall objective of the study is to determine the gender dimensions of the impact of climate change on agriculture and small holder farmers' knowledge, innovations and adaptations to climate change. A household survey together with an in-depth case study are being used to study two purposively selected districts that have been severely affected by climate change in Uganda, namely, Mbale and Soroti. The study will generate gender disaggregated data on impact of climate change on agriculture, economic and environmental assessment of adaptation strategies, farmers' understanding of climate change, and experiences with adaptation. The project will use the information generated to develop policy papers.

Key words: Climate change impact, gender, Uganda

Résumé

La façon dont le genre influe sur l'impact et l'adaptation aux changements climatiques n'est pas bien comprise. Par conséquent, l'objectif global de cette étude est de déterminer les dimensions du genre de l'impact du changement climatique sur l'agriculture et la connaissance des petits exploitants agricoles, les innovations et les adaptations aux changements climatiques. Une enquête auprès des ménages avec une étude de cas approfondie est utilisée pour étudier les deux districts choisis à dessein qui ont été durement touchés par le changement climatique en Ouganda, à savoir, Mbale et Soroti. L'étude va générer des données ventilées par sexe sur l'impact du changement climatique sur l'agriculture, sur l'évaluation économique et environnementale des stratégies d'adaptation, sur la compréhension des agriculteurs du changement climatique, et les expériences avec adaptation. Le projet utilisera les

informations générées pour élaborer des documents d'orientation.

Mots clés: Impact du changement climatique, genre, Ouganda

Background

Africa's rural poor communities, most of which are heavily dependent on rain fed agriculture, face major risks resulting from climate change. However, men and women differ in terms of vulnerability, impact and adaptation to climate change due to their different social and economic roles and responsibilities as well as existing inequalities in areas such as income generation, dependence on natural resources, access to resources and decision-making power (Roehr and Hemmati, 2007; WEDO, 2007). Generally, these inequalities disadvantage women who contribute over 60% of agricultural production in many African countries. However, previous studies in Uganda have not adequately assessed the economic feasibility of adaptations, farmers' experiences with the adaptations, and the gender dimensions of the impact of climate change and adaptation. A more thorough understanding of gender dimensions of the impact of climate change and adaptation will help inform public policy and professional practice so as to ensure equitable and sustainable agricultural development. This study seeks to contribute to this understanding. The overall objective of the study is to determine the gender dimensions of the impact of climate change on agriculture and small holder farmers' knowledge, innovations and adaptations to climate change in Mbale and Soroti districts of Eastern Uganda.

Literature Summary

Many climate change adaptation strategies are being practiced by different societies in Africa (UNFCCC, 2007). Generally, the implementation and effectiveness of adaptation measures is limited by technological, cognitive, behavioral, political, socio-economic, institutional and cultural constraints, among others (IPCC, 2007). For more effective and efficient adaptation, there is need to compare adaptation costs and benefits in view of farmers' context and the future (Stern, 2006). For each strategy, the mechanism, costs, constraints and issues should be identified (IPCC, 2001). A field study conducted using Participatory Vulnerability Analysis (PVA) by ActionAid (2006) in Malawi showed that switching to short-season hybrid maize varieties, though high yielding, proved costly for small farmers. On the other hand, a study on climate change and poverty in Uganda (Bundibugyo and Kasese districts) by Oxfam (2008), revealed that a risky approach adopted by farmers due to erratic rains

had cost them more planting material, time and labour, while increased orientation towards a market economy threatened food security and price stability. However, it showed that women had benefited from less labour intensive enterprises. On the other hand, a report on climate change impacts, vulnerability and adaptation in Eastern and Southern Africa by Eriksen *et al.* (2008), observed that adaptation by one group may increase vulnerability of another, and that the wealth of adaptation strategies available to farmers is no guarantee of successful adaptation.

Study Description

The project supports two student research projects. One study assesses the economic and environmental feasibility of farmers' adaptations to climate change. Its overall objective is to identify the key climate change adaptation strategies used by male and female farmers, assess the costs and benefits of the adaptation strategies and their net returns. The second study uses an in-depth case study approach to understand farmers' experiences with climate change impacts and adaptation. It assesses smallholder farmers' understanding of climate change, documents and analyses male and female farmers' experiences with the selected climate change adaptation/mitigation innovations.

Both studies will be conducted in the same locality in two districts; Mbale (Northern) and Soroti, which, according to the MAAIF (2004) zoning strategy for agricultural investment targeting, lie in the highland ranges and Kyoga plains agro ecological zones, respectively. Two sub-counties will be purposively selected per district and 2 villages randomly selected per sub county. A multi-stakeholder workshop will be conducted in each district to select key gender differentiated climate change adaptation strategies used by farmers, the key enterprise and farming systems. For the economic analysis of the adaptations (study I), fifty households will be randomly selected using a sampling frame provided by the local officials. A household survey using a structured questionnaire will be used to capture the costs and benefits and net returns associated with using each of the selected adaptation strategies for a given system or enterprise, and the potential risks of using the strategies as perceived by the farmers. The Trade Off Analysis (TOA) model by John Antle (2008) will be used to analyse the dataset in EXCEL. For the qualitative analysis (study II), farmers' experiences with five of the gender disaggregated adaptation strategies identified in the stakeholders' workshop will be

studied. Each strategy will be described and its technical and socio-economic merits/benefits will be assessed in discussion groups consisting of 5-10 farmers, with representation of men and women. Men and women's experiences and lessons from adaptation will be captured separately. Individual household interviews will also be administered. Households to be studied will be purposively selected based on sex and status. Three households will be selected, including, an adult male headed household, an adult female/widow headed household and a youth or elderly headed household. Participants will be male and female farmers who have had at least a year's experience in implementing an adaptation strategy. Data from individual and group interviews will be complemented with data from key informants, observation, and relevant documents. Data will be analyzed to generate themes, patterns, conclusions and generalizations.

Research Application

The studies will generate gender disaggregate data on climate change impact and adaptation. The data will emphasize to policy makers the importance of gender considerations during the climate change policy formulation process for sustainable development. In addition to the students' theses, the studies will generate policy recommendations and disseminate findings through policy briefs.

Acknowledgement

The project is funded by the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM)

References

Action Aid, 2006. Climate change and smallholder farmers in Malawi: understanding poor people's experiences in climate change adaptation. Available: www.actionaid.org.uk/doc_lib/malawi_climate_change_report.pdf. Accessed: 23/03/10.

Antle, J.M. 2008. Minimum-data analysis of technology adoption and adaptation to climate change. Workshop on adaptation to climate change, Nairobi Sept 2008. Department of Ag Econ & Econ, Montana State University USA.

Eriksen, S., O'Brien, K. and Rosentrater, L. 2008. Climate change in Eastern and Southern Africa: Impacts, vulnerability and adaptation. GECHS Report 2008:2. University of Oslo. Available: www.gechs.org/downloads/reports/2008-2.pdf. Accessed: 20/03/10.

IPCC, 2007. Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, Pachauri, R.K and Reisinger, A. (Eds.)]. IPCC,

Geneva, Switzerland, 104 pp. available: http://www.ipcc.ch/publications_and_data/publications _ipcc_ fourth_ assessment _report_synthesis_report.htm. Accessed: 28/03/10.

IPCC. 2001. Special report on climate change. Available: http://www.grida.no/publications/other/ipcc%5Fsr/?src=/climate/ipcc/regional/001.htm Accessed: 10/05/10.

MAAIF, 2004. Increasing incomes through exports: a plan for zonal agricultural production, agro-processing and marketing, 2004. The republic of Uganda. Available: http://www.ugandaexportsonline.com/strategies/zoning_plan.pdf. accessed: 28/7/10.

Oxfarm, G.B.2008. Turning up the heat: climate change and poverty in Uganda. Available: www.oxfam.org.uk/.../policy/climate_change/…/ugandan_climate_change.pdf . Accessed: 10/03/10.

Roehr, U. and Hemmati, M. 2007. Solidarity in the greenhouse: Gender equality and climate change. In: Grovers, Velma (Ed.). Climate change:Kyoto, ten years and still counting. Available: www. genanet.de. accessed: 24/08/2010.

Stern, N, 2006. Stern Review on the economics of climate change. Available: http://webarchive.nationalarchives.gov.uk/+/http:/www.hm-treasury.gov.uk/independent_reviews/stern_review _economics _climate _change/stern_review_report.cfm. Accessed: 10/02/10.

UNFCCC, 2007. Climate change: Impacts, vulnerabilities and adaptation in developing countries. Available: http://unfccc.int/resource/docs/publications/impacts.pdf . Accessed: 2/04/10.

WEDO (Women's Environment and Development Organization), 2007. Changing the climate: Why women's perspectives matter. Fact sheet. www.wedo.org Accessed on 25/08/2010.