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Research Application Summary

Climate change adaptation strategies among agricultural communities in Uganda: The case of Kabale and Nakasongla districts

Mwerera, R.L.[1], Majaliwa, J.G.M..[1] & Isubikalu, P..[2]
[1]Institute of Environment and Natural Resources, Makerere University,
P. O. Box 7062, Kampala, Uganda
[2]Department of Agricultural Extension Education, Faculty of Agriculture, Makerere University,
P. O. Box 7062, Kampala, Uganda
Correspondence: mweras@yahoo.com, rmwerera@forets.mak.ac.ug

Abstract

Climate change affects the ability of developing countries to achieve their poverty reduction and sustainable development strategies. Uganda was labeled among the most vulnerable countries to climate change risks. Rural farmers who depend on rain-fed agriculture are likely to bear the brunt of adverse impacts. The extent to which these impacts are felt depends largely on the extent of adaption response. This study examined farmers' perceptions and adaptation strategies to climate change and variability. Information was obtained through household survey data. Preliminary results show that many farmers (81.1%) noticed changes in climate; though 62% did nothing. The lowlands were mainly affected by climate change and variability shocks, mainly drought (89.8%). Climatic shocks led to decline in crop yields (39.2%), loss of income (35.1%) and increased incidence of malaria (60%). While most farmers did not take any remedial action against climate change, others changed livestock and crop variety, while others increased land under production or changed crop types.

Key words: Agricultural sector, climatic shocks, drought, floods, food security, rain-fed agriculture

Résumé

Le changement de climat affecte la capacité des pays en voie de développement de réaliser leurs stratégies de réduction de pauvreté et de développement durable. L'Ouganda a été enregistré parmi les pays les plus vulnérables aux risques de changement climatique. Les fermiers ruraux qui dépendent de l'agriculture en temps de pluie sont susceptibles de soutenir le choc des impacts défavorables. Le point auquel ces impacts sont sentis dépend en grande partie de l'ampleur de la réponse d'adaptation. Cette étude a examiné les perceptions des fermiers et les stratégies d'adaptation au changement et à la variabilité du climat. L'information a été obtenue par des données d'enquête effectuée dans les ménages. Les résultats

préliminaires prouvent que beaucoup de fermiers (81.1%) ont observé des changements du climat; bien que 62% n'aient rien fait. Les terres basses ont été principalement affectées par des chocs de changement et de variabilité de climat, principalement la sécheresse (89.8%). Les chocs climatiques ont mené à la diminution du rendement agricole (39.2%), la perte de revenu (35.1%) et ont augmenté l'incidence de la malaria (60%). Tandis que la plupart des fermiers ne prenaient aucune mesure réparatrice contre le changement climatique, certains ont changée la variété de bétail et de récolte tandis que d'autres ont accru les espaces de terre sous la production ou ont changé les types de récolte.

Mots clés: Zone agricole, chocs climatiques, sécheresse, inondations, sécurité alimentaire, agriculture en temps de pluie

Background

The scientific evidence indicates that higher temperatures and changing precipitation due to climate change will lower crop yields in many countries (Mahmud *et al.*, 2008). Impacts of climate variability and effects on the agricultural sector are projected to manifest directly from changes in the frequency and intensity of droughts, flooding, and storm damage (Kurukulasuriya and Rosenthal, 2003). In particular, rural farmers whose livelihoods depend on rain-fed agriculture are likely to bear the brunt of adverse impacts. The extent to which these impacts are felt will depend on the extent of adaptation in response to climate change. Adaptation is widely recognized as a vital component of any policy response to climate change (Gbetibouo, 2009). Without adaptation, climate change would be detrimental to many sectors including agriculture. This study therefore, sought to understand the scale of climate change hazards, existing adaptation strategies and how the resilience of rural agricultural populations can be enhanced.

Literature Summary

The Ugandan agricultural sector dominated by small-scale subsistence farming forms the foundation of the national economy and constitutes the primary source of livelihood for the majority of the population (UBOS, 2008). About 80% of the people in Uganda live in rural areas and depend directly or indirectly on agriculture for their livelihoods (UBOS, 2008). Uganda relies heavily on rainfed agriculture for food security, economic growth, employment and foreign exchange earnings (Orindi and Eriksen, 2005).

While Uganda's climate offers a great potential for food production, prolonged and frequent droughts in many parts of the country, have led to food shortage (CIA World Fact Book, 2008). Several extreme events (droughts and floods) have occurred between 1991 and 2000, with a particularly long and severe drought in 1999/2000 (CIA World Fact Book, 2008). They have affected many parts of Uganda and most especially the "cattle corridor", a strip that was across the country from northeast to southwest, 1999).

Study Description

The study was conducted in two major agro-ecological zones; the Kabale-Rukungiri Highlands in western Uganda and the Central Baruli Farmlands & Central wooded savanna of central Uganda (CIAT, 1999). Kabale and Nakasongola districts were selected in western and central Uganda; respectively. Sixteen villages were randomly selected, eight in each district. Fifteen structured questionnaires were randomly administered per village. The collected data (questionnaires) were checked for completeness, coded and entered in the computer using EPI DATA and later exported to SPSS (version 16.0) for analysis. Categorical variables were summarized by contingency tables. Only preliminary results from Nakasongola are presented here.

Research Findings

Preliminary results in Nakasongola (Central Baruli Farmlands & Central wooded savanna) showed that drought is the main shock (89.8%) affecting farmers (Fig. 1). Of the farmers interviewed (62%) did not talk any remedial action in response these climatic shocks, though 26% sold livestock and others

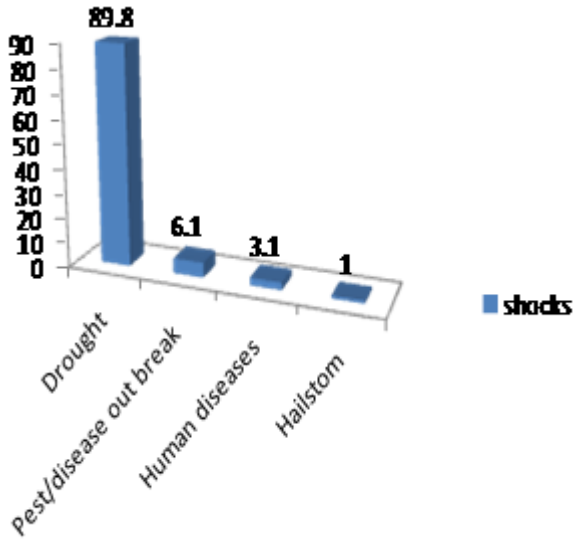

Figure 1. Major climate shocks.

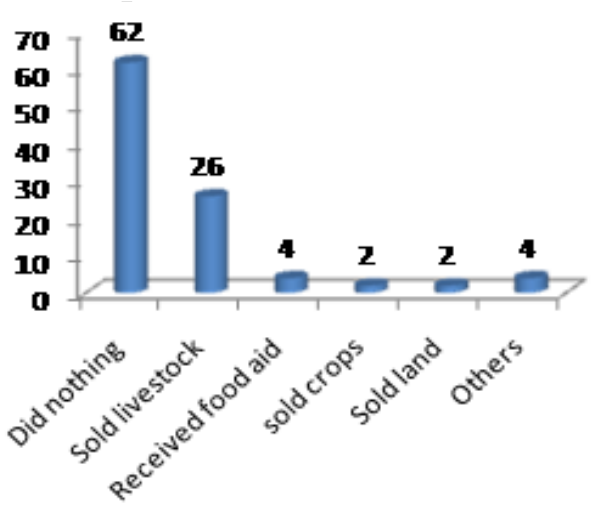

Figure 2. Adaptations strategies in Nakasongola district (Baruli farmlands).

changed crop varieties, increased the amount land under production and changed crop types (Fig. 2). The farmers reported that these climatic shocks led to decline in crop yield (39.2%), and loss of income (35.1%).

Research Application

Outcomes of the assessment will support decision making in the identification and management of risks, development of the most cost effective adaptation or mitigation options in order to enhance the resilience of the agricultural communities.

Recommendation

There is need to:

- Create awareness on climate change and variability impact among the farmers and policy makers in the two districts.
- Identify and standardize indicators of climate change vulnerability

Acknowledgement

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