

Title: THE IMPACTS OF CLIMATE CHANGE, AND COPING STRATEGIES OF SMALL SCALE FARMERS IN CENTRAL AND SOUTHERN ZAMBIA

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Abstract

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Climate change is one of the most serious threats to Zambia's environment, agriculture, human health and its overall social and economic development. The deforestation, arid environment, recurrent drought and floods have contributed to make Zambia one of the most vulnerable countries to the effects of climate change. Specifically, agriculture which is only second to mining sector and contributing 20% to the GDP and about 60% to the total labour force in Zambia is one of the most threatened sectors in the wake of climate change.

Zambia's heavy dependence on rain-fed agriculture coupled with limited technical and financial resources, potentially makes climate change one of the most critical and costly issues that would affect national development processes in Zambia. The climate of Zambia generally follows a pronounced gradient characterized by semi-arid conditions in the south and increasing precipitation in the north. Thus, water becomes one of the most important factor influencing agricultural decisions for the small holder farmers in southern Zambia.

This study was undertaken in Mwembeshi, Central Zambia and in Siavonga, Southern Zambia to explore the effects of climate change and coping strategies being used by local small scale farmers. The paper also discusses key recommendations to leverage the efforts the local small scale farming communities are undertaking to better cope with or adapt to climate change effects, focusing mainly on agriculture.

The study notes that rural small scale farmers are already being negatively impacted by the effects of climate change. Notable among the climate change related effects haunting rural farming communities in Zambia are; unfavourable climatic conditions (shortening rainy season, recurrent and prolonged droughts and frequent floods), out breaks of livestock and crop disease and pests (specifically quelea birds and insects). Unfavourable environmental and climatic episodes often lead to loss of life and assets, and food insecurity thus, exacerbating rural poverty.

Local farming communities in Zambia have experienced climate risks from time immemorial and have thus learned to predict rainfall and impending drought by a number of traditional indicators which include shifts in plant, insect and animal behaviour. Such predictions allow them to adjust labour and other resource allocations to mitigate the impending risks. In the process rural farmers

in Zambia have developed a number of traditional coping or adaptation strategies to the identified climate related shocks and threats. Such strategies include seed preservation and storage, crop protection, crop diversification, varying planting of crops in time and space, irrigation and adjusting land and crop management to respond to the prevailing conditions. They have also supplemented periods of shortfalls in staple food supply with wild or forest sourced indigenous foods such as game meat, caterpillars, insects, fruits, tubers, mushrooms and honey. This study notes that, although farmers have developed coping strategies, the scientifically predicted severity of future climate change effects may exceed farmers' traditional adaptive capacities and strategies. Generally, indigenous coping mechanisms are drawn from vital experiences and practices preserved and passed on from generation to generation mainly by word of mouth.

The study concludes that the current increasing trend of climate change related negative effects in isolated parts of Zambia threatens to overwhelm the current local coping mechanisms which safeguarded communities in the past. For instance, the recurrent droughts in southern Zambia have negatively impacted on the local resource base forcing some farmers to sell their only assets and to migrate northwards where the climate is still more humid.

There is need for government and other stakeholders to facilitate concerted efforts to develop more robust climate change adaptation mechanisms to reinforce the existing promising local coping initiatives. To a small extent this is already happening in Central and Southern Zambia as government, PELUM and partners (e.g Harvest Help Zambia and ESAFF) including other players are promoting initiatives to improve rural farmers' resilience to climate change. The strategies being promoted include water harvesting and storage technologies, small scale water lifting devices for crop irrigation, solar energy as an alternative to fuel wood and low external input farming techniques such as conservation farming and agroforestry. However, the effectiveness of any climate change adaptation initiatives will depend upon strategic collaborative efforts and partnerships across sectors, interest groups, geographic and socio-economic boundaries.

As indicated in this paper, traditional coping mechanisms, although not being robust enough to respond to the mounting climate change challenges, can serve as a useful entry point for government, NGOs' and other development actors. The paper also concludes that external interventions are needed to enhance the adaptive capacities and resilience of Zambian rural farming communities. The international and government agencies should partner with local communities in devising initiatives that would help to consolidate existing indigenous knowledge and generate new information on climate change to allow for informed decisions on what could be possibly done beyond local actions. Equally important is the need for governments, development partners and the other stakeholders to deliberately and proactively mainstream climate change in development plans to try and avoid emergency situations or the desperate and ineffective responses to emergencies when they inevitably occur. More importantly, climate change mainstreaming efforts should focus on supporting communication and networking on adaptation.