VULNERABILITY OF FOOD PRODUCTION SYSTEMS OF SMALL-SCALE FARMERS TO CLIMATE CHANGE IN SOUTHERN ZAMBIA: A SEARCH FOR ADAPTIVE STRATEGIES

by

Gear M. Kajoba
Department of Geography
The Unversity of Zambia
P.O. Box 32379
Lusaka, Zambia
E-mail: gkajoba@yahoo.co.uk

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1.0 INTRODUCTION

It is being predicted by scientists that Africa will be seriously affected by climate change, especially through increasing and more severe droughts and floods; and that to some extent this situation is already being experienced in Zambia (Sichingabula and Sikazwe, 1999).

These extreme climatic conditions are expected to negatively impact rain fed food production systems of small-scale farmers. This state of affairs requires therefore, that empirical studies are undertaken at the local level in order to assess the vulnerability and resilience of the food production systems, and also search for adaptive strategies that small-scale farmers need to adopt (ZVAC, 2005; ZVAC, 2007), as responses to climate change.

2.0 STATEMENT OF THE PROBLEM

According to the Intergovernmental Panel on Climate Change (IPCC), it is predicted that in Africa, climate change will lead to the reduction in area suitable for agriculture, length of growing season and yield potentials; that yields from rain-fed agriculture could be reduced by up to 50% by 2020; and that local food supplies will be negatively affected (IUCN, 2007).

In view of the above, it becomes necessary to conduct empirical studies in order to assess the perceptions of small-scale farmers as to whether environmental shocks from droughts and floods are already being experienced (locally) in the study area; what their coping strategies are at the moment; and then find out what long term adaptation strategies should be devised and implemented.

3.0 AIM

This proposal aims at undertaking empirical research in the Kafamila area in …… district, Southern Province to assess perceptions of small-scale farmers on the impacts of climate change on their food production systems; assess their coping strategies; and search for adaptive measures that can be undertaken locally with possible assistance from the extension wings of the Ministry of Agriculture and Cooperatives, the private sector, non governmental organizations (NGOs) and Cooperating Partners.

It is hoped that the search for adaptive strategies will involve interfacing indigenous and scientific knowledge systems, such as by identifying local seed varieties that perform well under stressful weather conditions and propagating them using modern scientific methods in the context of emerging rural markets and the promotion of sustainable small-holder agriculture.

4.0 OBJECTIVES

The main objectives of the research are:-

(i) To assess perceptions of small-scale farmers on the impact of climate change on their food production system;

(ii) To assess their coping strategies, and

(iii) To search for adaptive strategies as long term responses to climate change.

5.0 RESEARCH QUESTIONS

The following questions will guide the research:-

(i) Are small-scale farmers aware of climate change and its impacts on their food production systems in the local area?

(ii) What are their short term coping strategies?

(iii) What are their long term adaptation measures or strategies in terms of food production?

6.0 SIGNIFICANCE OF THE STUDY

This study will be significant because the search for long term adaptive strategies in which there is an interface of indigenous and scientific knowledge systems, could establish a sustainable approach or framework upon which interventions to help small-holder farmers deal with the impacts of climate change in the rest of the country and probably even beyond, can be based.

7.0 METHODOLOGY

(a) Secondary Data:- Secondary data will be collected through the review of literature on climate change and its possible impacts in Africa; and consider coping strategies that have been used in the past when responding to extreme weather conditions, in the context of indigenous knowledge systems.

(b) Primary Data:- Primary data will be collected through field work in the study area. Interviews will be conducted with small-scale farmers and with key informants such as Extension Officers and other government officials at District level; NGO's; Faith based organizations in the area; Teachers; Party Officials etc.

A total of 60 small-scale farmers (30 men and 30 women) will be sampled (on the basis of availability sampling), in order to find out how men and women small-scale farmers are responding to impacts of climate change.

In addition, focus group discussions (FGDs) will be held in order to capture the narratives of the farmers.

A research assistant will be recruited from the local area to help entry into the community and also conduct interviews and translate English/the local language. The interviews will be guided by a semi-structured interview schedule based on the key questions that will guide the study, and capture characteristics of the sample such as age, education, marital status, length of stay in the village, economic status, etc.

Types of qualitative data to be collected will include crop types and crop combinations. Under crop types, it will require to investigate whether the farmers are resorting to or should resort to the use of indigenous knowledge by cultivating early maturing; late maturing; drought tolerant; flood resistant varieties of crops – and also suggest in FDGs possible interventions that government, NGOs, the private sector; cooperating partners and the church could undertake to propagate these seed varieties, and make them available to small-holder farmers in rural markets.

Under crop combinations, it will require to obtain information on whether intercropping land usage systems that in the past allowed a wide variety of crops such as cereals, tubers, legumes and cucurbits, to be sown on the same piece of land, are still being practiced or not. This will be necessary because in the past intercropping was a useful risk management strategy to avoid total crop failure under adverse weather conditions. Thus data will be collected through assessments of number of crops, area planted and yield – whether these are increasing or are reducing .

Data will also be collected on the status of livestock, especially on the impact of livestock diseases on cattle numbers, and the implications on the provision of draft power, and its impact on area cultivated , planted and yield-whether these are increasing or declining.

8.0 BUDGET

It is hoped that RIHN through the Resilience Project will provide the following:-

(a) Research funding for hiring transport to and from the study area; and to facilitate movement within the study area.

(b) Per diem for the driver for 10 days (food and accommodation).

(c) Per diem for the Principal researcher for 10 days (food and accommodation).

(d) An allowance for the research assistant.

(e) An allowance for the secretarial work for preparing a research report after field work.

N.B. Please, note that the Budget will be determined by RIHN according to the prevailing rates and entitlements for researchers in the project.

9.0 REFERENCES

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