

**ADAPTATION STRATEGIES FOR CLIMATE CHANGE-INDUCED HOUSEHOLD
FOOD AND NUTRITION INSECURITY IN SMALLHOLDER MAIZE FARMING
WITHIN THULAMELA LOCAL MUNICIPALITY, SOUTH AFRICA**

By

Khanyisa Dorris Mahlawule

(Student Number: 14009760)

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Institute for Rural Development

School of Agriculture



University of Venda

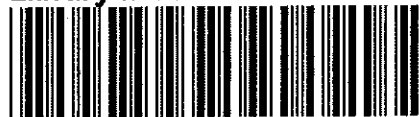
Supervisor : Prof J. Francis

Co-Supervisor : Dr M. Manjoro

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ABSTRACT

The prevalence of climate change hazards such as drought, floods and unreliable rainfall affects maize production, resulting in reduced crop yields and ultimately, household food and nutrition insecurity. Over the years, smallholder farmers have adopted various indigenous strategies to adapt to this challenge. However, they are not well documented per stage of maize production cycle. This study was designed to fill this gap through examining the indigenous adaptation strategies applied during land preparation, planting, weeding, harvesting and storage. The study was carried out in eight villages of Thulamela Municipality (but now in LIM345 Local Municipality) in Vhembe District Municipality of Limpopo Province, South Africa. The objective of the study was to analyze the indigenous strategies used to adapt to climate change-induced food and nutrition insecurity in the smallholder maize farming sector. The study was purely qualitative. However figures and tables were constructed to present the frequencies of expressed perceptions. A structured questionnaire was used to facilitate key informants' interviews with 25 experienced and knowledgeable smallholder maize farmers more than 40 years old. A snowball sampling technique was adopted to select farmers in each village. A voice-activated tape recorder was used to complement note taking. Tape records were transcribed, consolidated, captured and analyzed using Microsoft Excel. The results were organized and interpreted using tables, figures and verbatim statements.

Farmers reported different aspects of climate change such as temperature increases, change in rainfall patterns, long dry seasons and heavy rainfall. Inability to plan farming activities, decline in crop yields, water scarcity, and drying crops were reported to be results of negative effects of climate change. These findings revealed that the farmers had rich knowledge in maize farming. Indigenous knowledge and related practices were applied across the stages of maize. Indigenous practices applied during land preparation include soil tillage, clearing land, levelling, performing rituals and letting domestic animals in to clear up the field, and fertilizing the soil. Seed selection was determined based on colour and visibility of insects. Farmers planted maize using a wooden stick, hand hoe and donkey or oxen-drawn implements. Other common activities in smallholder maize farming including careful monitoring of plants, harvesting using sharp tool, proper drying for storage, keeping on cobs in fire kitchen, hanging on a tree, and keeping as grains (in containers, sacks, fire kitchen and processing). Insects were controlled for stored maize using

both indigenous and western science-based methods. The farmers indicated that they learned the indigenous practices from their parents. Both males and females were actively involved in maize production activities. These strategies were used for survival when faced with climate and related challenges that reduced maize output. The strategies were said to be effective in ensuring farmer resilience in terms of household food and nutrition supply. However, lack of information or awareness on climate change events and extreme temperatures that resulted in zero harvest hampered adaptation efforts. It was concluded that smallholder maize farmers relied on a wide range of both indigenous knowledge and western science-based practices.

Key words: Climate change, food and nutrition insecurity, smallholder maize farming, indigenous adaptation strategies