

# **Climate Variability and Rural Livelihoods: How Households Perceive and Adapt to Climatic Shocks in the Okavango Delta, Botswana**

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## **Abstract**

Climate variability and change have adverse effects on agricultural production and other livelihood strategies of the rural households. The paper hypothesizes that rural households naturally devise means of overcoming the challenges currently posed by climate variability. The research article addresses the question of how rural households apply local knowledge of weather forecasting in adapting to climate variability in the Okavango Delta. It specifically probes, among others, the extent to which climate variability has affected agricultural production over the last 10 years in the area. A multistage sampling procedure was used to select a total of 592 households from eight rural communities. Key informant interviews, focus group discussions, and a stakeholder workshop were used to obtain demographic, socioeconomic, psychosocial, and climatic information. Households used both natural animate and inanimate indicators to predict the weather. To enhance household adaptation to climatic events, indigenous knowledge weather forecasters (ethnometeorologists) engaged in discussions with community members on their observation and interpretation of local weather conditions. Households devised adaptation strategies including the selection and preservation of drought-resistant, early maturing seeds, and shift in farming calendars to overcome the vagaries of weather patterns. Local and farming communities had a favorable perception about the accuracy of indigenous knowledge in weather forecasting (ethnometeorology) and therefore continue to utilize this knowledge system in weather forecasting. Most households perceived that change in weather patterns had a direct relationship with the decline in agricultural outputs over the last 10 years. Households' experiential knowledge and ability to quantify their losses in farm yields as a result of climate-related problems provide an important insight for policy makers on how to address the impact of climate variability in the Okavango Delta, Botswana, and in similar social ecological contexts.