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ANALYSIS OF FARMERS' PERFORMANCE TOWARDS DROUGHT RISK REDUCTION FOR FOOD SECURITY IN ETHIOPIA: THE CASE OF TIGRAY

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Abstract

The purpose of this study was to identify positive deviant farmers' and their practices towards drought risk reduction and food security that could further be scaled up for other farmers. The study used a data set from an indicator-based household survey tool called the Rural Household Multi-Indicator Survey (RHoMIS). Resilience Index Measurement and Analysis (RIMA) model indicators in combinations with RHoMIS data were used to measure resiliency of farmers. The RHoMIS indicators categorized under the selected pillars of RIMA namely, agricultural practice and technology (APT), income and food access (IFA), sensitivity and adaptive capacity (AC).

In this thesis first, positive deviance regarding drought resilience is defined, and later a set of statistical techniques were employed to identify positive deviant household. Principal component analysis (PCA) was used to reduce the dimensionality of the RHoMIS data into the dimension of RIMA pillars. Median regression was used to make a correlation between RIMA indicators with household characteristics components.

The findings show all household characteristics components have an effect on the RIMA pillars except market potential. The margins of the median regression model and the PCA scores were used to create a Pareto front and seventeen pareto optimal, positive deviants, households identified. The identified positive deviant households were interviewed to explore their drought risk reduction practices.

The households were found to be engaging in different activity to improve their state of drought risk resilience through enhancing their farming activity, livestock production, and off-farm activities. Overall twenty-six drought risk reduction practices, which are believed to make the positive deviant households to be more resilient to drought and be in a better food security status, were identified based on the conducted interviews.

The practices have categorized into RIMA pillars. Fourteen practices identified which are improving the households agricultural practice and technology (APT) and also reducing their sensitivity to shocks. Also, nine practices which are improving the household's income and food access (IFA) and three practices improving household's adaptive capacity (AC) are being identified. The households practice, maybe not all, but a combination of the identified

practices. moreover, the positive deviant's attitude towards current climate change is found to be very good as compared to other farmers.

Finally, to meet the last objective, key informant interview was conducted with the district agriculture office experts and possible recommendations to scale up the good practices are presented.

Key Words: Food security, drought risk resiliency, climate change, positive deviant farmers