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Land use diversification to fight food insecurity and improve resilience towards climate change in Ethiopia

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Abstract

In 2015, the main rainy season, locally called ‘kiremt’, was late and below normal conditions precipitation. Overall, the year was one of the driest in large parts of Ethiopia. Consequently, the government called for emergency assistance for 10.2 million people. In response to climate change and climate variability induced risks, rural farm households are responding in various ways, which include conversion of agricultural land use to woodlot management and adoption of agroforestry systems. This study investigates agricultural land diversification’s climate change resilience capacity through tree plantation and agroforestry practice by comparing land use systems in Awi Zone, Bale Zone, and Hawassa Zuria. Data from the Central Statistics Agency (CSA), FAO reports and mapping of land use land cover changes in selected three study sites. The research considers the amount of food distributed during 2015 and 2016 as an indicator of food insecurity during the drought and FAO’s priority classification for aid support. The result shows that during this period, about 149,389 households have been victims of crop damage due to reasons related to crop diseases, rainfall shifts, pests and wild animals resulting in a production loss on 28,767 hectares of land. Climate related reasons, such as frost or floods, and excess and shortage of rainfall account for about 48.5% of the loss. Bale zone, with higher monocrop production, was under high risk of drought and classified as priority one for aid distribution even though the land size ownership of the household in the area is bigger as compared to Awi and Hawassa Zuria. Hence, monocrop production puts households at higher risk of food security due to the varying climate and crop diseases. Areas with more land use diversification using woodlot and agroforestry practices were identified as not a priority for aid supply during drought season. Hence, the diversification has backed the farmers in securing their food through income from tree harvest and other products from agroforestry practice. This supports current trends to push smallholder farmers toward diversification and introduction of agroforestry systems. However, diversification models need to be designed carefully to ensure context specific fit.

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