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Resilience and agroforestry options in rural Zambia: Identifying the vulnerable and tailoring support to their aspired future

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Abstract

In the face of various global challenges, particularly climate change, smallholder agriculture needs economically, ecologically, and socially sustainable concepts. Investigating how individuals, households and communities react to and deal with adverse shocks today, while planning for better futures, can support the promotion of innovative and sustainable practices. As part of the World Agroforestry's Fruit Tree Portfolio (FTP) project which promotes nutrition sensitive agroforestry options, we collected data from 745 rural Zambian smallholder households in early 2022. We aim to support the identification of farmers who can benefit from specific resilience building practices, while assessing their potential and specific interests to adopt such practices. We first analyse smallholder farmers' resilience to adverse shocks by performing a multivariate regression on three interrelated resilience indicators (life satisfaction, recovery time and loss per shock). We find positive correlations between resilience and more diverse income portfolios (reduced recovery time and loss), higher educational attainment (higher life satisfaction; lower losses) and more developed networks (reduced recovery time). In addition, a household shows an increasing resilience to adverse shocks with an increasing number of experienced shocks. We then apply an innovative multidimensional framework for livelihood strategies to assess the potential of smallholder households to adopt agroforestry as a resilience building practice. We conduct k-means cluster analysis for the three resilience variables, identifying three clusters (low, medium, high resilience). High resilience is correlated with a lower likelihood of being poor (Poverty Probability Index), more diverse income sources, an aspirational focus on the acquisition of productive assets, but low overall ambitions, as well as a high number of memberships by the respondent and lower crop diversity on farm. Households with low resilience show high aspirations, fewer income sources and focus on private life improvement rather than acquiring productive assets. By including livelihood aspirations of farmers, next to other socio-economic household and farm characteristics, the framework provides a clearer and more context-specific evaluation for ex ante analyses of target groups for agroforestry projects. This allows development agencies to approach interventions in a more inclusive manner by incorporating farmers' views directly into the design of transdisciplinary development projects.

Keywords: Aspirations, livelihood strategies, resilience, smallholder farmers, Zambia