

Tropentag, September 9-11, 2020, virtual conference

"Food and nutrition security and its resilience to global crises"

Resilience of Whom? Diverse Coping Strategies by Smallholder Farmers in Northern Ghana

Mirja Michalscheck

Wageningen University & Research, Farming Systems Ecology Group, Plant Sciences Department, The Netherlands

Abstract

Smallholder farm. in the Savannah ecosystem of Northern Ghana face a variety of recurrent shocks and stresses, such as climate shocks, crop pests, market price declines and labour shortages. These shocks seriously affect the local food and nutrition security of rural households. However, the same shock or stress is likely to affect different farms and farmers differently. But little is known about the local farm and farmer type-specific vulnerability, about their coping strategies or in how far an adoption of technology packages for sustainable intensification (SI) may improve local farm systems resilience. We systematically consulted household members of local smallholder systems about the impact of four severe shock scenarios: a drought, a price shock, a fall army worm infestation and a labour shock due to illness, death or outmigration of household members. We used the wholefarm model FarmDESIGN, comparing the household-level resilience of three representative farms, with and without the adoption of project-proposed technologies and techniques. We built 39 whole-farm models to estimate and explore the impact per shock as well as the recovery options for a low, medium and high resource endowed farm. For all three farms, drought was found to have the most severe impact on farm income. The medium resource endowed household was identified as the most vulnerable, especially to the drought and the labour shock. For all three case study farms, the adoption of SI-technology packages improved their capacity to recover or even outperform their pre-shock performance. Particularly the medium and the high resource endowed farms seemed to be able to significantly improve their farm incomes by adopting SI-technologies. As a coping strategy, male farmers relied heavily on livestock sales, although a high livestock mortality and livestock theft threatened the profitability of the strategy. Women processed and traded wild nuts, fruits and rice. Good post-harvest storage and an extensive social network were important resilience factors, too. We conclude that local farms and farmers evince a variety of coping mechanisms, which, combined with the proposed SI-technologies, constitute a rich portfolio of resilience measures equipping local farmers, some better than others, to cope with agricultural shocks and stresses.

Keywords: Climate shock, economic shock, fall army worm, health shock, typology

Contact Address: Mirja Michalscheck, Wageningen University & Research, Farming Systems Ecology Group, Plant Sciences Department, Droevendaalsesteg 1, 6708 PB Wageningen, The Netherlands, e-mail: mirja.michalscheck@gmail.com