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“Resilience of agricultural systems against crises”

Increasing Resilience to Climate Change and Economic Shocks in Small Scale Agriculture in Zambia

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Abstract

In this empirical research work, the question was explored on how Zambian small scale agriculture can develop and thereby increase its resilience to climate change and economic shocks. Based on a resilience concept, which encompasses the categories buffer capacity, adaptive capacity and organisation and also considers economic criteria, data from expert interviews and farmer's focus group discussions were analysed according to these categories. By doing so, six measures were identified as particularly suitable in order to increase both in one: resilience to climatic change and resilience to economic shocks. These are: Further crop diversification, expansion of conservation agriculture, expansion of animal draught power, punctual intensification of irrigation, introduction of an e-voucher-system and revitalisation of a warehouse-system. How these measures impact on resilience and how they can be established on the local up to the political level was elaborated in multi-level-charts together with Zambian experts and policy makers. Aside of this more applied oriented result, the data analysis also relieved the more academic result that effective adaptation measures towards climate change are mostly also effective towards economic shocks and these two categories largely foster each other. In the paper, three of the identified measures are further outlined, i.e. the e-voucher system, which enables small scale farmers to buy the inputs they need in a more flexible way, conservation agriculture, which improves the buffer capacity of soils and boosts yields at the same time, and crop diversification, which lowers production risks against the background of increasing price and climate variability. While incentives are necessary on each level and from both the government and the private sector, farmers' adaptive and organisational capacities have to be strengthened in a parallel process in order to strengthen their ability to apply the suggested measures successfully. Last but not least, the results suggest that the measures have to be implemented as a bundle. Standalone measures are not strong enough to buffer shocks sufficiently and they cannot develop synergies. Only in a bundle, spill over effects can be achieved and the full benefit can develop.

Keywords: Adaptation to climate change, adaptive capacity, agricultural policies, buffer capacity, economic shocks, multi level charts, organisational capacity, resilience, small scale agriculture, Zambia