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The Role of Agriculture in a Changing World

Vulnerability and Sustainability of Rural Poor Households in Makrugbeh,
Northern Sierra Leone

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Abstract

This thesis is giving insight to the complex human-environmental linkages of global change. In order not to exceed the earth's carrying capacity, a paradigm shift towards global sustainable development is inevitable. One key element of global change is land and the way how it is being used. Most important way of land-use is arable farming, mainly for food production. Agriculture stands in reciprocal relation with climate change: On the one hand, agricultural performance and hence food security is highly dependent on climatic conditions. On the other hand, the sectors agriculture and forestry are contributing with roughly 30 percent to the global greenhouse effect.

Rural poor households highly depend on agricultural production to sustain their livelihoods. They make up one of the most vulnerable groups with regard to climate change and food insecurity. Vulnerability in this context is defined as combination of baseline vulnerability, risk exposure and coping and adaptation capacity. The sustainability of a farming system highly correlates with its vulnerability to climate change and food insecurity. Thus, locally adapted sustainable agriculture is the key for reducing these vulnerabilities.

In Makrugbeh, a small village in Northern Sierra Leone, a set of different methods of rural appraisal was conducted in order to give insight in the status and linkages of vulnerability and sustainability on farm-level. For the analysis, an integrated research framework was implemented in the field: The Vulnerability and Sustainability Assessment (VASA) includes a standardized questionnaire, different methods of Participatory Rural Appraisal and the sustainability analysis RISE (Response-Inducing Sustainability Evaluation). The empirical findings are cross-checked with information from secondary sources.

The results show a critical picture: The baseline vulnerability in the village is low, especially with regard to food security; Climate change is already affecting farming activities and is predicted to have further impact on the region; Low coping and adaptation capacities increase the vulnerability of the farming households. This is partly related to the critical status of sustainability on farm-level. There is a variety of potential measures on farm-level and on broader scale for decreasing the vulnerability to climate change and food insecurity and enhancing the sustainability of the households.