



## **Regional scenario building as a tool to support vulnerability assessment of food & water security and livelihood conditions under varying natural resources managements**

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Participatory regional scenario building was carried out with stakeholders and local researchers in four meso-scale case studies (CS) in Africa. In all CS the improvement of food and / or water security and livelihood conditions was identified as the focal issue. A major concern was to analyze the impacts of different plausible future developments on these issues. The process of scenario development is of special importance as it helps to identify main drivers, critical uncertainties and patterns of change. Opportunities and constraints of actors and actions become clearer and reveal adaptation capacities. Effective strategies must be furthermore reasonable and accepted by local stakeholders to be implemented. Hence, developing scenarios and generating strategies need the integration of local knowledge. The testing of strategies shows how they play out in different scenarios and how robust they are. Reasons and patterns of social and natural vulnerability can so be shown.

The scenario building exercise applied in this study is inspired by the approach from Peter Schwartz. It aims at determining critical uncertainties and to identify the most important driving forces for a specific focal issue which are likely to shape future developments of a region. The most important and uncertain drivers were analyzed and systematized with ranking exercises during meetings with local researchers and stakeholders. Cause-effect relationships were drawn in the form of concept maps either during the meetings or by researchers based on available information. Past observations and the scenario building outcomes were used to conduct a trend analysis. Cross-comparisons were made to find similarities and differences between CS in terms of main driving forces, patterns of change, opportunities and constraints. Driving forces and trends which aroused consistently over scenarios and CS were identified.

First results indicate that livelihood conditions of people rely often directly on the state and availability of natural resources. Major concerns in all CS are the fast growing populations and natural resources degradation because of unsustainable natural resource management. Land use and resource competition are a consequence of unclear land tenure systems and limited resources availability. Scarce rainfall with high annual variability causes food insecurity if yield failures cannot be compensated, e.g. because of lacking financial resources.

In all case studies critical uncertainties were identified to be more or less related to "poor governance". Missing governmental and political stability and effectiveness as well as corruption hamper the implementation of laws and policies related to natural resource management. Other critical uncertainties lie in the social domain. They are either related to demographic patterns like emigration or immigration varying the pressure on natural resources use or to the society in general like the evolvement of people's environmental awareness or voice and accountability. Methodological outcomes of the scenario building were that the complexity of the process requires the use of reliable and powerful tools to support the communication process. Concept maps were found to be a useful tool in this regard.