

Developing a model to assess the viability of action measures to enhance resilience - a case study in Ethiopia and Ghana -

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1 Viability of action measures to enhance resilience

The viability of AMs is often assessed considering interests and success factors defined by policy makers or donors, which usually only include economic and technical aspects. Empirical research on implementation of adaptation measures has often neglected the importance of the human dimension, of measurable and alterable psychological factors like interest and motivation^{1,2,3}. Therefore, we developed a model to assess the viability of action measures to enhance resilience based on their feasibility, the stakeholders' motivation towards the action measures and the stakeholders' shock exposure experience and perception.

2 Action measure assessment model

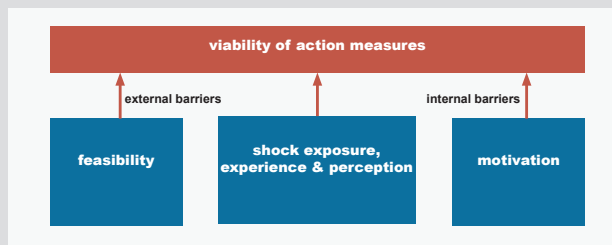
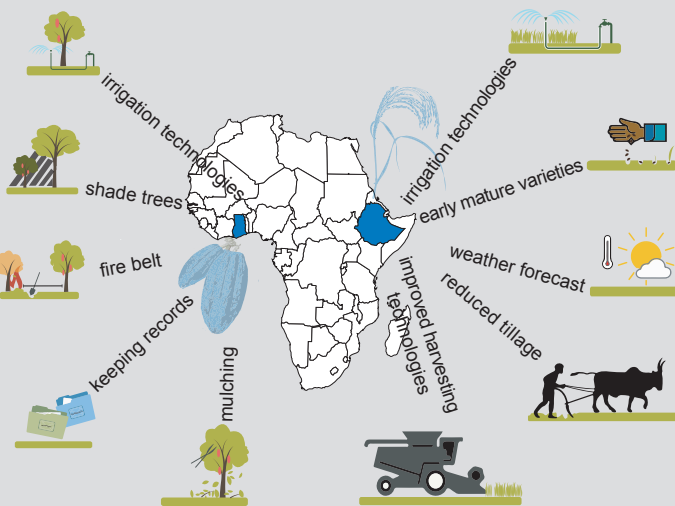


Fig. 1. Conceptual model of the three dimensions shaping the viability expressed by the actual implementation.

3 Case studies: Tef in Ethiopia and cocoa in Ghana

The model was tested on the tef value chain in Ethiopia and the cocoa value chain in Ghana. For both value chains, farmers are the stakeholders showing the lowest level of resilience towards shocks. Drought was identified as the most devastating shock event for farmers. To generate primary data we conducted a quantitative questionnaire-based survey and qualitative workshops. The aim was to test the applicability of the model and assess the viability of five action measures in each country.



4 Results of the case studies

In both cases, motivation and feasibility were associated for some AMs with the share of implementation used as viability proxy but not with the same effect. No direct effect of the shock itself, here drought exposure, experience, and perception on the implementation of AMs was found. The results indicate that the share of implementation is more a function of the AMs' nature than a function of the stakeholder and its livelihood.

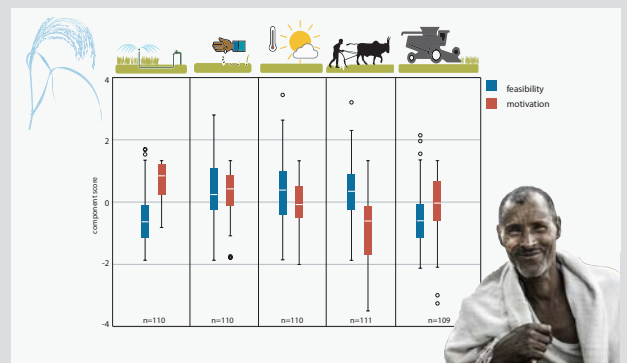


Fig. 2. Perceived feasibility and tef farmers' motivation to implement five particular action measures.

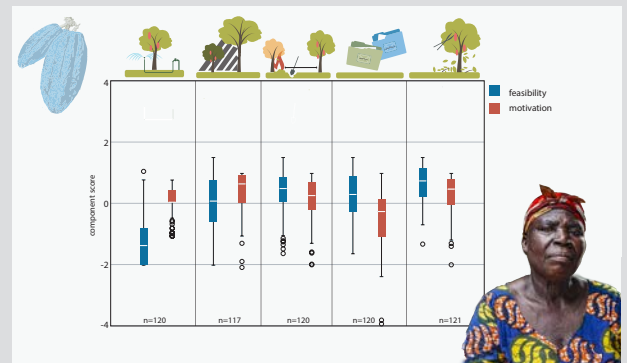


Fig. 3. Perceived feasibility and cocoa farmers' motivation to implement five particular action measures.

5 Outlook

Further research should be conducted for a better understanding of the interactions and effect strength of motivation and feasibility. Based on results and literature we suggest following adjustments to the model:

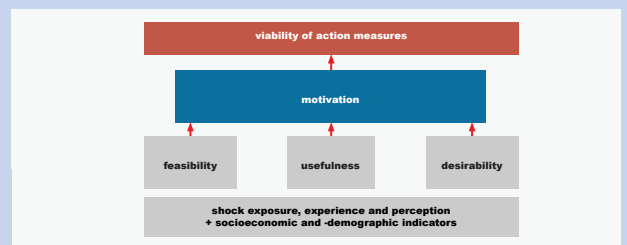


Fig. 4. Adjusted conceptual model of the three dimensions shaping the viability expressed by the actual implementation.

¹ Frank, E., Eakin, H., & López-Carr, D. (2011). Social identity, perception and motivation in adaptation to climate risk in the coffee sector of Chiapas, Mexico. *Global Environmental Change*, 21(1), 66-76.
² Grothmann, T., & Patt, A. (2005). Adaptive capacity and human cognition: The process of individual adaptation to climate change. *Global Environmental Change - Human and Policy Dimensions*, 15(3), 199-213.
³ Wheeler, T., & von Braun, J. (2013). Climate change impacts on global food security. *Science*, 341(6145), 508-513.