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Smallholder farmers’ perceptions of agroecology in rwanda: insights and recommendations for a sustainable transition

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Abstract

This master’s thesis explores how smallholder farmers in Rwanda understand agroecology. Their perceptions and willingness to change are key to the success of agroecological transformation processes. The study focuses on how these farmers experience their everyday realities, what they perceive as barriers, and which factors they identify as supportive for sustainable agricultural development. Using the CANALLs project as a case study and applying a Participatory Rural Appraisal approach, the research examines how participation in Agroecological Living Labs (ALLs) influences both the understanding and implementation of agroecological principles. Data was collected through focus group discussions, a co-creation workshop, field observations, and informal conversations with smallholder farmers and other actors along the value chain. In addition, project data from the early phase of CANALLs was used to trace changes in perception after approximately one and a half years of project implementation.

The results show that while agroecology is often associated with sustainable practices, it is rarely understood explicitly within an agroecological framework. For many farmers, agroecology represents a potential path toward improved productivity, food security, and ecological resilience. At the same time, structural challenges remain significant – including climate change, land scarcity, income instability, and limited access to knowledge, resources, and political support. The comparison between participants and non-participants in the ALLs shows that participatory formats can strengthen both agroecological understanding and farmers’ sense of agency. Moreover, the study highlights that locally embedded, farmer-driven approaches are essential for rooting agroecology in rural realities. Projects like CANALLs already demonstrate at early stages how crucial it is to strengthen farmers’ awareness, knowledge, and ability to position themselves actively within the agricultural value chain. These findings not only inform future policy and development strategies in Rwanda but also contribute to the global discourse on equitable food system transformation. Based on these insights and guided by the 13 principles of agroecology, the thesis concludes with practice-oriented recommendations for fostering transformation processes in Rwanda.

Keywords: Agroecology, CANALLs, FNS, PRA, rural development, Rwanda, smallholder farmers, sustainable transition