

From organic farming to agroecological farming, what challenges do organic farmers face in central Uganda?

Mr. Bienvenu Dagoudo Akowedaho 1, Prof. Charles Ssekyewa 2, Dr. Joseph Ssekandi 1, Ms. Khady Ngom 1, Prof. Ismail M. Moumouni 3

1. Africa Center for Agroecology and Livelihood Systems, Uganda Martyrs University, 2. St Lawrence University, Mengo, P.O.BOX 24930, Kampala, 3. Laboratory of Research on Innovation for Agricultural Development, Faculty of Agronomy, University of Parakou, Benin

Introduction

Based on environmental protection and providing healthy and safe foods to the population, organic agricultural production is considered an opportunity to create new agri-food systems for agricultural production. Agroecological farming is considered sustainable agriculture which focuses on ecological production for agrobiodiversity protection and food sovereignty through using multiple and diverse crops or animals, relying on biological processes for building soil fertility and controlling pests and diseases, etc. Does organic agricultural production entail agroecological farming? This paper explores the challenges faced by organic farmers in agroecological practices through agroecological principles.

Methodology

The study was carried out in Central in Central Uganda mainly in 5 districts: Wakiso, Masaka, Bukomansimbi, Ssembabule, and Kyotera. These districts belonged to the agroecological zone called Mukono Zonal Agricultural Research and Development Institute (ZARDI). The multiple-stage stratified sampling procedure was used to select 310 organic farmers by proportional random sampling in the 8 counties. The visit to the farm is essential for gathering fieldwork material that is generated through qualitative interpretive methods like interviews and participant observation. Descriptive analysis was used to summarize socio-economic and demographic characteristics of the respondents, agroecological variables, and the Pearson correlation coefficient as a measure of the significant relationship between agroecological variables.

Results & Discussion

The study focuses on organic farming analysis through an agroecological approach that emphasizes four agroecology principles: diversity, synergies, recycling, and resilience. The findings highlighted that the majority (52.9%) of organic farmers respondents have more than 3 crops adapted to local and changing climatic conditions and 58.71% of organic farming has Medium integration (animals are mostly fed with feed produced on the farm and grazing, their manure is used as fertilizer). The seeds and animal genetic resources are self-produced or exchanged, although some specific seeds are purchased from the market by 51.61% of organic farming. The result revealed that the local environment can suffer from climatic shocks, but the system has a good capacity to adapt to climate change in 40.65% of organic farming. In organic farming that participates in this research, 50% of the soil is covered with residues or cover crops, with the majority at 61.61%. Most residues and by-products are recycled, with a little waste discharged or burned in 37.1% of organic farming. In organic farming, 34.52% of organic farming have one type of equipment for water harvesting or saving (e.g., drip irrigation, tanks). According to the findings, 47.74% of organic farmers' income is declining, production varies from year to year (with constant inputs), and income and production mostly recover after shocks or perturbations. The correlation test revealed that the diversity crops affect positively diversity activities, products and services ($r = +0.523$, $p < 0.01$), the diversity animals affect positively crop-livestock integration ($r = +0.674$, $p < 0.01$), and the water harvesting and saving influence positively the environmental resilience and capacity to adapt to climate change ($r = +0.546$, $p < 0.01$).

Conclusion

This empirical research addressed the agroecological principles implemented by organic farmers in Central Uganda. It focuses on diversity, synergies, recycling, and resilience, which are the agroecological principles that contribute to producing healthy and safe food for society and building resilient and sustainable local food systems through agrobiodiversity protection, food sovereignty, adaptation to climate change, and participation in the green economy.

Keywords: organic farming, agroecological approaches, organic farmers, agroecology, Uganda