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How actor networks enable agroecology transitions: Comparative insights from Tolon and Savelugu districts, northern region, Ghana

JOHN AWENVA, MICHELLE CHEVELEV-BONATTI, STEFAN SIEBER

Leibniz Centre for Agric. Landscape Res. (ZALF), Germany

Abstract

Agroecology is increasingly promoted to address climate vulnerability, food insecurity, social inequalities, and to enhance youth engagement in farming. Yet its adoption remains low in Africa, particularly in Ghana, due to gaps in farmers' technical knowledge and weak collaborative efforts to bridge the divide between traditional knowledge and scientific methods. This study addresses this gap through a comprehensive examination of the actor-networks supporting the transition to agroecology through a comparative analysis of two districts (Tolon and Savelugu) in the northern region of Ghana.

The study employed Social Network Analysis and multi-stage qualitative methods involving a key informant interview with the Ministry of Agriculture, a multi-actor workshop, and semi-structured interviews with 84 individual actors involved in agroecological transition in the region.

Our results revealed a landscape of multi-actor networks promoting agroecology with agricultural extension/veterinary officers, NGOs, local media, and lead farmers in various communities as key actors, occupying centralised and brokerage positions, ensuring the rapid dissemination of support. While these key actors play a crucial role in the actor-networks, they also conceal the knowledge of marginalised individuals or groups. Both districts showed a fully connected network, but low density where support flows primarily one-way from experts to farmers, limiting trust-building and social learning in the broader network. Gender dynamics further play crucial support exchanges: women provide substantial agroecological support but remain less visible as recipients in both networks, indicating their key role in agroecological transition in the region.

These findings suggest that the agroecological transition relies not only on support but also on how actor-networks distribute power, enhance learning, and facilitate inclusion, with implications for designing more equitable and resilient agroecological systems. This study recommends institutionalising mechanisms to recognise small peer-to-peer learning groups in communities, strategic reorientation and equipping of agricultural extension and veterinary officers to facilitate network-building and social learning among farmers, and a crucial need for more NGOs and Media platforms to reinforce their roles as bridging and brokering actors in the region.

Keywords: Agroecology, collaborative agriculture, knowledge diffusion, social network analysis, sustainable agriculture