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Smallholder Farmers’ Adaptations of Agroecology in the Context of Livelihood Asset-Deprivation: Social and Ecological Consequences in Bilanga, Burkina Faso

DIANE KAPGEN¹, LAURENCE ROUDART²

¹*Free University of Brussels (ULB), Centre for Studies in International Cooperation and Development (CECID), Belgium*

²*Université Libre de Bruxelles (ULB), Centre d’Études de La Coopération Internationale et du Développement (CECID), Belgium*

Abstract

In the sudano-sahelian climate zone of eastern Burkina Faso, the local NGO ARFA – Association pour la Recherche et la Formation en Agro-écologie – implements smallholder-tailored development programs based on improved agroecological farming practices and small farm equipment diffused through village-level operating farmer groups.

A qualitative research design was used to analyse how agroecology impacts on different smallholders’ livelihoods and which factors shape benefits and adverse effects. We relied on the sustainable livelihoods framework and further completed it with a) the franco-phone agronomy-based Agriculture Comparée approach to better investigate the farming systems level, and b) the development-anthropology ECRIS-related concepts to gain in-depth understanding of social structures, power relations and conflicting interests.

Depending on the strength of their livelihood asset base and their personal livelihood strategies, farmers use different logics of action when engaging in the programs. Asset-endowed farmers hold leading positions in the farmer groups and have a wider range of possibilities for appropriating the program’s elements to their advantage. Program-related ignorance of smallholders’ unequal starting positions create both ecological and social discrepancies. They hit asset-deprived farmers and fragile ecosystem components at the same time. Insufficient access to small equipment for implementing labor-intensive water-harvesting-techniques (stone bunds and Zai) hinders equipment-deprived farmers’ adoption, thus contributing to the spreading of unfertile soil (Zippélé). Lack of local plant nurseries for agroforestry land management intensifies the practice of uprooting saplings in the bush for replanting them in the fields, leading to both the loss of trees in uncultivated ecosystems and more fragile field trees compared to plants from tree nurseries. Livestock herd size limits farmers’ capacity to gain excreta necessary for the intensively promoted compost production technique. Livestock-poor farmers’ children browse the bush collecting the excreta from trespassing herds, contributing to both children’s exploitation and removal of valuable natural fertiliser from the bush. Water quantities needed for compost production clash with the need for drinking water in the dry season. These examples outline our study’s contribution to understanding the complex social-ecological interactions in agroecological development programs, which are shaped by smallholders’ diverging livelihood asset bases and opportunities to appropriate the programs’ elements.

Contact Address: Diane Kapgen, Free University of Brussels (ULB), Centre for Studies in International Cooperation and Development (CECID), Institut de Sociologie - 44 Avenue Jeanne - Cp 124, 1050 Brussels, Belgium, e-mail: diane.kapgen@ulb.ac.be

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