Food security in Sudano-Sahelian landscapes: evidences from two contrasted village territories in Burkina Faso

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Abstract

In the sudano-sahelian region, climate change affect agricultural and food systems as they enlarge the already existing environmental and socioeconomic drivers of food insecurity. Mosaic landscapes combining field parklands, fallows and savannah woodlands are among the most widespread traditional land use systems in this region. Smallholders combine the goods and services provided by mosaic landscapes to achieve food security needs. The conversion of forest area to fields' remains the most commonly spread practice for cropping. Based on the landscape mosaic pattern and on the forest resource abundance, we selected two village territories representing two different level of forest resources: Kalembouly ("K-") with more than 72% already converted to field parklands and Sorobouly ("S+") with 50 % of the village area remaining in natural vegetation. We selected 60 households in each village and we implemented a monitoring system based on a 5 days rotation survey during a period of food shortages following a drought year (2011). All products purchased or sold by the women in this period as well as the use of the income of sold products were documented. The results show that during this period, some households in both villages rely on the sale of tree products, particularly wood fuel, shea nuts, and Parkia seeds, to purchase cereals. However the generalized linear model shows that in order to purchase cereals, households in "S+" where forest resources are still abundant relied more on the income of wood fuel selling while in "K+" households rely more on selling Shea nuts gathered in the parklands. There was no significant difference between households facing food shortage in the two villages. The women sold the same forest products in the two villages in food shortage period but women's forest incomes in "S+" were two times higher than those of women in "K-". Abundance of wood fuel from natural vegetation in "S+" was the main reason marking this difference in earnings. We concluded that in case of collecting similar tree resources, resources abundance can be the key element that could make the difference between the responsiveness of households in food shortage under the influence of climate change. Biodiversity must be associated with some conservation measures aimed at increasing the abundance of biological resources in order to fully play its role in food security.

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