Food and Agriculture Organization of the United Nations

Agrobiodiversity for food and agriculture

Addressing declining agrobiodiversity in Uganda's cattle corridor

BACKGROUND

Agrobiodiversity is defined by FAO as "the variety and variability of animals, plants, and micro-organisms that are used directly or indirectly for food and agriculture, including crops, livestock, forestry, and fisheries. It comprises the diversity of genetic resources (varieties, breeds) and species used for food, fodder, fiber, fuel, and pharmaceuticals. It also includes the diversity of non-harvested species that support production (soil micro-organisms, predators, pollinators), and those in the wider environment that support agro-ecosystems (agricultural, pastoral, forest, and aquatic) and the diversity of the agro-ecosystems.

Agrobiodiversity confers several benefits to agrifood systems, including improved soil health, reduced pest problems, increased profits, improved food security, improved nutrition, increased resilience to climate change, reduced pressure on fragile areas, more sustainable farming systems, improved use of water resources and pollination of crops. Despite these benefits, loss of local knowledge about the benefits of agrobiodiversity, replacement of local varieties with improved ones, unsustainable practices are causing significant loses.

A study was carried out on the agrobiodiversity diversity in nine districts (Abim, Amolatar, Buyende, Kaberamaido, Katakwi, Kayunga, Nakasongola, Nakaseke and Napak). in the "*cattle corridor*" of Uganda to determine the status of agrobiodivrsity. The assessment was done using the Diversity Assessment Tool for Agrobiodiversity and Resilience (DATAR). This involved Focus Group Discussions, Household Surveys and on-farm assessment using participatory techniques: interviewing, visualization methods: mapping, diagramming, identification, and characterization of specimens, among others. Key informant surveys and community data validation meetings were also done.

Key messages

* *Farmers in the cattle corridor of Uganda use only a small portion of the crop diversity to address food and nutrition needs*
* *Extinction of some varieties especially the traditional varieties had already occurred.*
* *Major threats to agrobiodiversity include extensive production systems, marked-driven species and variety selection, deforestation, and climate change.*
* *Promoting agroforestry and empowering farmers to utilizing local seed systems are promising ways to conserve agrobiodiversity in Uganda's cattle corridor.*
* *Documenting and widely sharing the traditional varieties of crops and breeds livestock is needed.*

FINDINGS

The crop varieties that contributed to the study included over 50 cassava varieties, 33 beans, 8 millet, 30 groundnut, 34 sweet potato, 12 maize, and 31 banana varieties, which were both local and improved. Farmers noted that several landrace varieties had disappeared in their communities, implying a loss of genetic diversity. On average, each household had at least 1-2 varieties of each crops while they had on average 5 varieties of sweet potato four of bananas. Sweet potatoes a re a major stable, especially in the norther part of the cattle corridor.

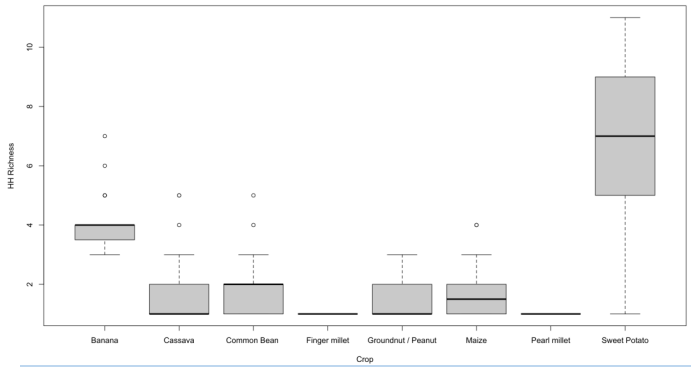

Fig. 1: Varieties of crops among households in the cattle corridor of Uganda

Farmers access planting materials from friends, relatives, neighboring communities, local markets and own saved seed. A few farmers obtain planting material from farmer associations, cooperatives, NGOs, government agencies, private companies, and research institutions. Genetic material selection is done at pre-harvest, where farmers select and mark plants to be used as seed. Selection is from a particular area in the field and from a bulk harvest. Information on varieties relies on self-experience, friends and relatives. Some farmers have basic knowledge about varietal diversity and good practices such as use of chemical fertilizers, herbicides, pesticides, weather protection equipment, and irrigation.

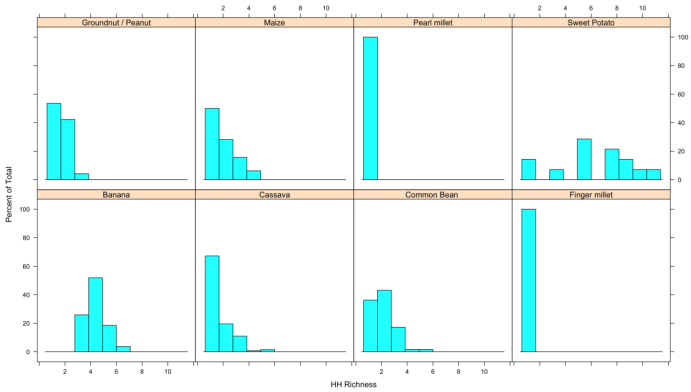

Fig.2: household richness differed among households for selected crops in the cattle corridor of Uganda

Attributes determining preference of some varieties over others include taste, seed viability and resilience to environmental factors such s drought, pest and diseased. The low adoption of some high-yielding (improved) varieties has been due to the decrease in the yielding capacity over time (when replanted) to levels below that of the landraces, hence limiting access to quality seeds. A few farmers also reported that the quality of the seed at times provided low germination rates as well as poor harvests, thereby discouraging farmers from procuring improved seed varieties.

RECOMMENDATIONS

1. Extension agents and local leaders should create awareness about the importance of agrobiodiversity. This can be achieved through farm clinics, field days and agricultural shows. Periodic assessments and monitoring programs could also be encouraged t assess the changes in adoption rates
2. Research institutions should establish multiplication and conservation centers at the Zonal Institutes, provide foundation seed, and train local seed multipliers to produce and disseminate diverse varieties and breeds. Promote traditional seed systems for traditional varieties and support regional seed growers and breeding centers in order to help farmers maintain and conserve the seed germplasm, its qualities, and its economic characteristics.
3. The Ministry of Agriculture should develop and disseminate information materials about best management practices for promoting agrobiodiversity. Such practices include crop rotation, agroforestry, minimum tillage and use or organic imputes.

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