

Diversifying agriculture in post-conflict areas:

7 things we can change



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Executive Summary

Agricultural biodiversity is central to current and future food and nutrition and security needs in Uganda.

Unfortunately, in some parts of the country, such as Teso and Acholi sub regions, which faced up to two decades of conflict, this diversity is increasingly under threat from practices such as charcoal making and land clearing for agriculture¹.

As a result, there is reduced investment in longer term sustainable farming practices that conserve and promote diversity. This contributes to high food insecurity and lack of access to diverse diets especially among vulnerable groups such

as Women of Reproductive Age (WRA) (15-49 years) and children under five years.

Adoption of sustainable agricultural practices can promote agrobiodiversity and enhance nutritional outcomes and quality of life of vulnerable groups.

This brief gives a summary of findings and insights from research conducted in 2018 by [Bioversity International](#) and [Trocaire](#), Uganda, working closely with a number of partners including National Agriculture Research Organisation (NARO), Makerere University and Ministry of Health-Uganda (Division of Nutrition). It points out interventions and actions that can be implemented in culturally appropriate and locally relevant contexts.

¹Data cited in this brief is derived from the main study titled: *Land Tenure, Agrobiodiversity, and Food Security: Understanding the Influence of Land Tenure Insecurity on Dietary Diversity and Nutrition Status of Women and Children*

in Acholi and Teso Sub regions of Uganda (Bioversity & Trocaire Uganda). The survey covered 1280 households from 32 villages in Acholi and Teso regions

Recommendations

1. **Conserve** threatened species such as indigenous fruits and vegetables, oil seeds and trees that would significantly support diverse nutritious diets. This should also involve; characterisation and documentation of wild species and indigenous varieties, increasing utilisation through enacting conservation laws and strengthening development of community seed systems linked to rural training centers (currently inactive) to act as conservation points, learning and even tourist attraction. These centres can then be linked to regional and national gene banks.
2. **Entrench** agro-biodiversity conservation and appropriate utilisation as a core part of resettlement initiatives following any form of displacement.
3. **Create** operational linkages between wild life and forestry conservation activities to exploit synergies and enable diversity exchange between the wild and agricultural fields.
4. **Include** conservation of agrobiodiversity, and its role in food and nutrition for better ecosystem services and diverse diets in extension advisory service messages to raise awareness and implementation.
5. **Encourage** livelihoods diversification to include both on-farm and off-farm activities,
6. **Deploy** nutrition education and communication systematically to ensure that households make the best of available agrobiodiversity resources for dietary diversity, quality and quantity. This should include awareness on essential diets for children and WRA, improved food storage, handling and preparation practices in addition to supporting each household to plant minimum tree species (possibly fruit trees), vegetables and stock poultry. Appropriate utilisation of income to support food and nutrition should be part of the awareness creation module.

7. **Boost** customary land tenure systems through establishment of community land associations with clear outlined statutes to enable them act as checks for ensuring appropriate conservation and utilisation of the agrobiodiversity. Support collective bargaining to ensure land being sold is correctly valued and buyers adhere to agreements of community land associations.

Box 1: What is Agrobiodiversity?

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, fibre, 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) as well as the diversity of the agro-ecosystems.

Source: FAO, 1999a

Why should we bother?

The year 2020 will see the end of the UN decade of biodiversity (2010-2020). This will be followed, in five years' time, by end of the UN decade of Nutrition (2016-2025).

With these two critical milestones in mind, the question we should ask is; What have we done in Uganda to make progress on agrobiodiversity conservation and appropriate utilisation to support nutrition?

So far, not enough attention has been directed at understanding the role agrobiodiversity plays in enhancing the access to diverse and nutritious diets for WRA and children under five. This is more so in regions which have previously experienced conflict and displacement of populations. In such regions, a number of factors including the communities' perception of land tenure insecurity, contribute to less willingness or ability to invest in longer term agricultural practices that promote agrobiodiversity.

Shying away from long-term decisions

The reduced investment in sustainable agricultural practices denies the most vulnerable groups much-needed access to diverse and nutritious diets. Farmers in these contexts are unwilling or unable to make long term management decisions on the type of crops grown, animal species reared and other food items hunted, gathered or trapped for biodiversity.

This results into persistent under development, poverty, food insecurity, chronic malnutrition and micronutrient deficiencies, especially of Vitamin A and iron (FANTA, 2011).

In Uganda, the two sub regions, of Acholi and Teso faced at least two decades of conflict between the years 1986-2006, provide a good opportunity to highlight the strong links between agrobiodiversity and nutritional security of vulnerable groups especially WRA and children under five years.

In both sub regions, approximately 24% of households reported loss of some plant and animal species over the years, and a 50% reduction in size of average land holding per household due to population increase which in turn causes rise in population density.

The years since 2006 have marked the gradual return to traditional order, resettlement and reintegration of most Internally Displaced Persons (IDPs) spearheaded by the government of Uganda. This offers an opportunity to entrench agro-biodiversity conservation and appropriate utilisation, as a core part of the resettlement initiatives.

With a combined population of up to 4.3 million (UBOS 2014), the two sub regions include a large population of vulnerable WRA and children under the age of five.

Supporting robust sustainable agriculture practices that focus on sustainable management of natural resources in these areas, will enhance agrobiodiversity and directly contribute to improvements in variety and quality of family diets, thus protecting vulnerable groups from unwarranted loss in productivity and quality of life.

In addition, improved agrobiodiversity in these regions will help to rejuvenate biodiversity in general.

Food varieties are declining

The variety and quality of food eaten by WRA and children below the age of five years has a direct and significant impact on their current and future physical and economic productivity due to influence on both physical and mental development.

The Food and Agricultural Organization (FAO) points out that in order to achieve nutrient adequacy, food groups used for children 6-23 months old are seven and minimum consumption is achieved following consumption of four food groups. For WRA, the food groups are 10 and the minimum consumption is achieved following consumption of five food groups from the list of food groups (Box 2.)

Box 2: Food groups for minimum dietary diversity in women and children

Women (FAO, 2016)

- Cereals/grains, white roots, tubers & plantains
- Pulses (beans, peas and lentils)
- Nuts and seeds
- Milk and dairy products
- Meat, poultry and fish
- Eggs
- Dark green leafy vegetables
- Other vegetables
- Vitamin A-rich fruits and vegetables
- Other fruits

Children 6-23 months (FANTA, 2011)

- Grains, roots and tubers
- Legumes and nuts
- Dairy products (milk, yoghurt, cheese)
- Flesh foods (meat, fish, poultry and liver/organ meats)
- Eggs
- Vitamin-A rich fruits and vegetables
- Other fruits and vegetables (WHO, 2008)

Research results indicate that availability of a variety of foods is coming under increased threat due to several factors such as charcoal making and land clearing for agriculture and reduced size for land holding by 50% from before 1997. The problem of small land holdings is further aggravated by issues of land conflict, with 16% of households perceiving themselves to be land tenure insecure, a perception which was highly associated with poverty and having land conflict that negatively affected land use.

Fewer crop varieties

The farming practices rely on fewer varieties and shift emphasis away from extensive farming practices that promote agrobiodiversity. Additionally, displacement of traditional agricultural practices and knowledge is further contributing to loss of agrobiodiversity as deforestation, bush burning and other practices adversely affect the environment.

The survey established that a very low proportion of households (less than 3%) maintained any other plant species that were not necessarily part of the common crops. Up to 24% of households agreed that they had lost food species previously either consumed by WRA or fed to children.

Evidence also showed a high prevalence of food insecurity among households both in Acholi and Teso, ranging from 61% to 76%, respectively. In addition, 47% of WRA and 92% of children did not meet the minimum dietary requirement which indicates high nutrition insecurity. The WRA (15-49 years) and children (6-23 months) experienced limited access to recommended food categories especially fruits, vegetables and animal source foods.

Meals eaten by children were dominated by cereals, white roots and tubers, followed by legumes and milk. Only one in every 10 children 6-23 months, met the minimum dietary diversity scores.

It was further noted that in addition to the shifts in agricultural practices, the threat to agrobiodiversity is noticeable in these regions

as a result of a combination of historical conflict and displacement of populations. This has negatively affected ability and motivation of the communities to invest in longer term agricultural systems that combine species diversity (plants and animals) and environmental conservation.

For instance, the results shows that up to 52% of households that considered themselves land insecure in Teso and Acholi, grew fewer long-term crops such as fruit trees and did not maintain diverse crops in their fields.

In addition, households kept a smaller variety of animals and few in stock, especially small ruminants and poultry, mainly for sale and not for household consumption. Foods of animal source such as eggs, milk, meats and micronutrient rich foods were the least common in the diets. This has a direct and negative effect on availability of diverse and nutritious food for the vulnerable groups due to observed low consumption within the households.

Furthermore, 52% of land tenure insecure households had for some time had inadequacy in quality of food eaten and reduced number of meals to about one meal per day.

Conclusion

Limited access to a variety of plant and animal species led to only 50% of WRA and one in every 10 children of 6-23 months meeting their minimum dietary diversity scores. This is also due to land insecurity's influence on agri-food practices.

Improving household access to species diversity can have significant effect on food and nutrition diversity of WRA and children under five years.

Creating awareness on the central role agrobiodiversity plays in the nutritional outcomes for households is vital in addition to addressing the perception of land tenure insecurity among some households, which removes the incentive to diversify agricultural practices to reduce species depletion.

FAO definition of agrobiodiversity highlights the fact that it is multi-faceted and therefore

requires integrated interventions implemented in culturally appropriate and locally relevant contexts to achieve positive results.

In the context of Teso and Acholi sub regions, this calls for an integrated approach that combines species conservation, livestock development, improvement of extension service, alternative /multi livelihoods, improvement of customary

land systems, strengthening conservation of endangered species, and creating nutrition awareness and nutrition interventions for Women of Reproductive Age and Children under five. This integrated approach can contribute to new lessons to support implementation of similar projects in regions that face the threat of biodiversity depletion.

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