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The Contribution Of Indigenous Vegetables to Household Food Security

▲ lot of effort has been invested by the Government of Uganda to produce enough food for Uganda's population and a surplus for export. However, the indigenous vegetables, often referred to as traditional vegetables, have been underrated in favor of introduced exotic vegetables (Rubaihayo, 1995). Hence, the potential of traditional vegetables has not been exploited.

Traditional vegetables are perishable, low yielding and their value as commercial crops has not been explored. Yet, the majority of local farmers cannot always produce exotic vegetables because of the unavailability of seeds and/or high production costs of these vegetables. Unfortunately, the resource-poor urban and rural population often find it difficult to purchase exotic vegetables from local markets because of the high costs. They therefore, depend on traditional vegetables as a regular side dish or sauce accompanying the staple foods such as maize, cassava, sweet potatoes, banana, millet, sorghum and yams (Rubaihayo, 1994). The staple foods provide calories needed for body energy but are very low in other nutrients while the traditional vegetables have a very high nutritive value. They contain vitamin A, B, and C, proteins and

minerals such as iron, calcium, phosphorus, iodine and fluorine in varying amounts but adequate for normal growth and health. For example, vitamin A which is required to prevent blindness especially in children is found in all dark green leafy traditional vegetables such as *Amaranthus* (dodo), *Solanum aethiopicum* (Nakati), *Manihotesculenta* (cassava leaves) and *Ipomea batatas* (sweet potato leaves). On the other hand vegetables like *Solanum indicum* subsp. *distichum* (Katunkuma) are believed to control high blood pressure. The traditional vegetables, therefore, meet the major protein-calorie nutritional needs especially in children, the sick, elderly, expectant and lactating mothers (FAO, 1988).

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Unfortunately, the consumers have not been sensitized to appreciate the role of the traditional vegetables in fulfilling the above human needs.

Most of the traditional vegetables are produced throughout the developing world mainly in kitchen and home gardens. Because of the importance of these gardens, an international Workshop on Household Garden Projects was held in Bangkok, Thailand in May 1991 to consolidate lessons learned from experience with household garden projects. The workshop analyzed the relevance and effectiveness of household food production as a development intervention, targeted at the most nutritionally and economically disadvantaged people and identified viable implementation strategies of household gardens (Midmore et al., 1991).

The purpose of this paper is to prompt policy makers and development managers to reassess and give more weight to the neglected production and consumption of traditional vegetables so as to enhance nutrition, income generation and food security for small scale households. The views expressed in this paper are a result of interviews with

several people from many countries including Uganda, Ethiopia, Kenya, Tanzania, Zimbabwe, Zambia, Rwanda, Cameroon, Nigeria, Ghana, Ivory Coast, Gabon, Senegal, etc. although there is more focus on the Uganda situation:

Kitchen gardens. Kitchen gardens are common in urban centers and their suburbs. They are normally made up of very small plots of usually pure stands of traditional vegetables as part of the garden of the residence. The vegetables are produced cheaply in these gardens using compost rather than commercial fertilizers (Midmore et al., 1991)

The commonly grown traditional vegetables include *interalia* Leafy *Amaranthus* species, *Basella alba*, *Solanum aethiopicum*, *Solanum gilo*, *Solanum indicum* subsp. *distichum*, *Capsicum* species *Colocasia esculenta*, *Phaseolus vulgaris*, *Gynandropsis gynandra*, *Vigna unguiculata*, *Bidens pilosa*, *Manihot esculenta*, *Corchorus olitoris*, *Solanum nigrum*, *Abelmoschum esculenta*, *Cucurbita maxima*, and *Acalypha biparvita*. Exotic vegetables such as *Brassica oleracea*, *B. oleracea* and *Daucus carota* are also commonly grown. The yields of some fresh vegetables in Uganda are shown in Table 1.

Home gardens. Home gardens are found in villages. The plots are larger than those of kitchen gardens and a number of vegetables and other crops are mixed together including fruits, vegetables, medicinal plants, staple foods and shade trees. The home gardens in villages surrounding the suburbs of the urban centers are often planted with cabbages, cauliflower, carrots, *Amaranthus lividus* (grown in swamps and water logged soils), *Solanum gilo*, *Solanum indicum* subsp. *distichum* mostly as monocrops. These vegetables are sold in the neighboring urban and their suburbs markets.

The contribution of indigenous vegetables to household food security

The home gardens of traditional vegetables in the rural setting are characterized by intercropping systems and volunteer plants during the rainy seasons. In many developing countries, where these gardens predominate, the contribution of traditional vegetable gardening as a food production strategy has been overlooked by policy makers and extension staff in favor of exotic vegetables which are mainly produced for commercial purposes (Rubaihayo, 1994). Unfortunately, the resource-poor rural households

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Table 1. Dry matter yields of common vegetables in Uganda

Crop	Yield/ha	Reference
Cowpea	11.1 t/ha.	Ocaya, unpubl.
Cabbage	24 t/ha.	Jabber, unpubl.
Amaranthus sp.	20 t/ha.	Rubaihayo, 1994
<i>Solanum aethiopicum</i>	7.5 t/ha	Rubaihayo, 1994

do not benefit from the remarkable increase in exotic vegetable commercial production due to the costly inputs of agricultural chemicals needed for their successful production. Therefore, it is extremely important to develop research and production strategies that directly enable the poorest of the poor to produce not only traditional vegetables but also staple foods.

Although the contributions from these gardens to family welfare are supplementary in nature, such modest contributions are very important to those who have very little in the rural and urban areas. These poor people often have access to only under-utilized marginal land and others have very small pieces of land. Intensive home and kitchen gardening can turn this land into a productive source of food and economic security by using narrative agricultural practices and the traditional vegetables that are already locally adopted.

Importance of traditional vegetables. A large proportion of the Ugandan population do not consume adequate amounts of traditional vegetables to meet their daily requirement of vitamins, minerals and proteins. Even what is consumed has a large proportion of these nutrients destroyed or lost during preparation and cooking. There is reduced effectiveness in ensuring food security all year round due to the fact that very few traditional vegetables are cultivated, with the majority being collected from the wild or fields and plantations. In some of the ecosystems they are regarded as weeds and are often weeded out and are not available during the dry season (Rubaihayo, 1994). But this situation can be reversed through concerted efforts by the government to educate the general population and extension services to cover traditional vegetables and increase research to produce improved cultivars, processing, marketing and storage methods. This would lead to the increased consumption of traditional vegetables and their contribution to food security will be enhanced.

Family gardens are far more common in less well-to-do households, and constitute the major or the only source of food between harvests or when harvests fail. They provide a

critical source of energy and protein, especially to weaning-age children, the sick and elderly. Some of the traditional vegetables can continue to be productive even during the dry season although at a reduced rate due to stunted growth. Habitat destruction and migration to urban areas mean that wild foods are no longer available to these resource-poor rural farmers. Moreover, the commercialization of agriculture has displaced many indigenous crops that used to ensure a balanced rural diet (Rubaihayo, 1992).

It is important to appreciate that traditional vegetables, especially the leafy ones like *Amaranthus*, (dodo, Bugga) *Solanum aethiopicum* (Nakati) etc. can be handy under emergency circumstances and hardships arising out of civil conflicts and natural disorders that result in the displacement of communities. These traditional vegetables come into production with a short time soon after the onset of rains and can be harvested in three to four weeks after planting. These leafy vegetables could then be followed by crops like beans which take two to three months as cultivated relief food, so that purchased foods are a temporary or supplementary measure (Rubaihayo 1995b).

Women and traditional vegetables. In Uganda, though rural women are responsible for feeding their household, yet they have limited access to resources. Household gardening offers women an important means of earning income without overtly challenging cultural and social restrictions on their activities. Home and kitchen gardens can enhance women's purchasing power and food production capacity which has a direct impact on household nutrition, health and food security.

Where traditional vegetables have been commercialized such as, Malakwang (*Hibiscus* spp.) Nakati (*Solanum aethiopicum*), Egobe (*Vigna unguiculata*), Entula (*Solanum gilo*), Katunkuma (*Solanum indicum* subsp. *Disticum*), Dodo (*Amaranthus dubious*), Bbugga (*Amaranthus lividus*) particularly around the city of Kampala and in other urban areas, it is mainly the men who cultivate them. Middle men purchase these vegetables from the farmers (men) and transport them to the markets, and in the market women buy them and retail them to the general public. The sale of traditional vegetables in women-accessible markets do not only provide food security to those with purchasing capacity but the trading women are able to educate their children and, dress and provide their household with essential items in the home thus avoiding abject poverty.

Home and kitchen gardens and the environment.

Although there has not been an extensive study of the effects of traditional vegetable gardening on the environment, it is generally believed that household gardens conform to ecologically sound land management systems. Household food production uses organic farming practices which are friendly to the environment. The traditional style of household gardens is also critical in conserving diverse plant genetic resources (Midmore *et al.*, 1991).

Conclusion

Traditional vegetables are a common household food and make a substantial, though rarely appreciated contribution to the food security of the rural people in many African countries. Therefore, extensive education about their importance as a nutritionally balanced food and as a direct and indirect source of income, particularly for the resource-poor families, must be undertaken by African governments.

References

- FAO (Food and Agriculture Organization), 1988. "Traditional Food Plants." FAO Food and Nutrition Paper 42. FAO, Rome.
- Goode, P.M. 1989. "Edible plants of Uganda. The value of wild and cultivated plants as food." FAO Food and Nutrition Paper 42/1. FAO, Rome.
- Midmore, D.J., Vera Nines & Venkataraman, R. 1991. "Household gardening projects in Asia: past experience and future directions." *Technical Bulletin No. 19*. Asian Vegetable Research and Development Center.
- Rubaihayo, E. B. 1992. "The Diversity and potential use of Local Vegetables in Uganda." Pages 109-114. In: *The First National Plant Genetic Resources Workshop: Conservation and Utilization*.
- Rubaihayo, E. B. 1994. "Indigenous vegetables of Uganda." African Crop Science Conference Proceedings 1, 120-124.
- Rubaihayo, E. B. 1996b. "Conservation and use of traditional vegetables in Uganda." In: *Proceedings on Genetic Resources of Traditional Vegetables in Africa: Option for Conservation and Use*, 29-31 August 1995, ICRAF Kenya (in press).

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