

Women reintroducing neglected crops

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In African rural communities women in particular have a rich traditional knowledge of the value and properties of many minor local crops. They understand their nutritional value and know they are well adapted to the local agro-climate. These crops can be grown in kitchen gardens or on farmland with far fewer inputs than commercial varieties. In many households they are known as famine crops and, in some cases, they can be processed or sold directly to provide much needed cash for such essentials as school fees and health care.

This became clear when the *International Centre for Underutilized Crops* at Southampton University was involved in a farmers' participatory survey in South Africa. The survey was part of a project to inventarise and reintroduce indigenous vegetable species suitable for cultivation in dry and semi-dry land areas in the North Transvaal and Eastern Cape. It was coordinated by the *South and East Africa Network for Underutilized Crops* (SEANUC).

The survey focused on how poor farming communities manage underutilized crops and on established and potential commodity chains from planting material to end-use. Later, practical experiences with these commodity chains were shared with the rural communities in Spitzkop in Northern Transvaal and Alice in the Eastern Cape. Whilst farmers participating in the survey identified several underutilized species, only three are discussed here: Livingstone potato (*Plectranthus esculenta*), cucurbits and *amaranthus*. Each case shows the depth of farmer knowledge and how keen they were to conserve these crops.

Knowledge

In both Spitzkop and Alice, women's knowledge of local plant species enables them to play an important role in the selection and management of seeds and planting material and the conservation of plant diversity. Their selection of edible plants is based on a wide range of criteria including palatability, quality, beliefs about health and nutrition, and commercial potential. However, the selection of crops and varieties involves more than a concern for



Photo: SEANUC

Plectranthus esculenta, popularly known as Livingstone potato.

edibility and the passing on of botanical information and skills. Their understanding of local plants extends to chemical characteristics as well, especially those that affect processing, storage, preservation and the effectiveness of their medical properties. During the study it became clear that consumer demand and preference for taste and palatability influenced the way women decided which species and varieties to grow. For example, the green leaves of *amaranthus* are popular in Africa and farmers carefully selected a special type of *amaranthus* for the canning industry. In the same way cucurbit varieties were selected according to criteria such as market demand.

During the survey, seed for cucurbits and *amaranthus*, two of the target species, was collected from community gardens where it was being maintained alongside some major vegetable species. The women in these communities knew of the uses of these species from their grandparents and were multiplying and maintaining the varieties for their own needs.

Reintroduction

However, in the case of the third species studied - *plectranthus*, popularly known as Livingstone potato -, the situation was quite different. Although the communities knew that *plectranthus* tubers were nutritious - they contain high levels of Vitamin A, protein and iron - Irish potato had become so popular after its comparatively recent introduction that the Livingstone potato had been neglected. As a result there had been such a serious loss of planting material that the communities were no longer able to maintain the necessary diversity. The farmers realized this and were eager to get *plectranthus* reintroduced. The women of the community showed the most interest in this and the project was able to provide 14 accessions of *plectranthus* - collected from the northern region of South Africa - to women in two communities in the Spitzkop area. The women characterized, evaluated and selected two lines for further trial in their gardens and were given training in propagation and crop management.

Three years later a follow up survey found that the women's groups were still maintaining all the varieties they had been given in their communal gardens. The successful re-introduction of this species would not have been possible without the skills and knowledge of the women maintaining the communal gardens and the fact that they realized the nutritional value of the tuber and were keen to see it re-establish.



Photo: SEANUC

Cucurbits showing a wide range of diversity.

Production

As indicated above the farmers' participatory survey lead to the identification and selection of three species considered desirable by the communities for multiplication, distribution and planting – *plectranthus*, *amaranthus* and cucurbits. In working with the different varieties, women showed particular skill in the identification of characteristics such as drought, disease tolerance and the ability to withstand extremes of temperature and still perform well on marginal land. Above all women farmers gave priority to crops that could be grown in mixed farming systems. The project trained community members in participatory seed production and crop management as well as such operations as watering, control of diseases and pests (only few incidences observed) and harvesting. The communities found that the mixed cropping of these crops was profitable.

In Spitzkop, farming communities are relatively poor.

Plectranthus tubers were planted in small plots of 10 x 10 m between young eucalyptus trees in a mixed cropping system that included other vegetables such as *amaranthus* and cucurbits. They were also intercropped with maize on the household's farmland. Trained women community members managed the production of these crops with a very limited amount of supervision.

Plectranthus yields under community-managed mixed cropping systems were 60 tons/ha but lower when intercropped with maize.

Scaling-up

The SEANUC programme in the region started with two farming communities but after three years, as it prepared to withdraw from Spitzkop, some 120 farmers in 20 villages were cultivating *plectranthus*. The rapid uptake of the technology confirmed the success of the project and an extensive exchange of planting materials took place between farmers. The demand for tubers was also developing on the local market and between 2001 - 2002 farmers were getting up to Rand 5 (US\$1) per 250 g for their crop, higher than the market price for Irish potato. The possibility of earning an income from cultivating *plectranthus* encouraged young men who had access to land and who might otherwise have migrated out of the area to plant the crop.

In the Eastern Cape farmers selected five lines of *plectranthus* for their palatability and taste. Yields of 70 tons/ha were recorded when leaves were harvested at two weeks intervals over a period of six weeks. Community members started to sell the cooked leaves in small saucers to people travelling by bus and taxi for Rand 7 (US\$1.30).

Also in the Eastern Cape, 83 accessions of *Cucurbita maxima* and 4 lines of *Lagenaria* were collected, characterized and evaluated in community gardens. Two accessions of *Cucurbita maxima* were well accepted by the community because of their yield and palatability. These accessions were planted in a 50 m² field and fertilized with farmyard manure. The selected lines gave yields of 40.5 tons/ha and 30.6 tons/ha respectively. The women's community groups have included these two selected types in their household production systems and have started to market harvest surpluses.

Harvesting, post-harvesting and processing

The women in the communities involved in this project harvested, sorted, graded and arranged for the cucurbits and *amaranthus* crop to be transported to market. Although there was a cash demand for *plectranthus*, it was mostly exchanged between friends and neighbours.

In terms of planning similar activities, it should be noted that the price women received for cucurbits and *amaranthus* depended

on whether they took the vegetables to market themselves, or sold them through an intermediary. The advantages of the latter practice is, of course, that the women get their money all at once rather than in bits and pieces and they save on time and transport costs. However, it also means that they are not able to determine price according to supply and demand and, because they tend to sell their crop at irregular intervals to meet incidental expenses, they are in a weak position when it comes to negotiating price. A conclusion that might be drawn here is that marketing aspects need to be taken into consideration in such projects in order to ensure that the communities benefit as much as possible from the efforts they have made to re-establish and propagate underutilized but clearly popular species.



Photo: SEANUC

Farmers preparing land for mixed cropping.

Food and income

The experience of SEANUC in South Africa has shown that women continue to use and maintain the wealth of underutilized crops and that they show considerable interest and initiative especially when it comes to crop diversification activities in their kitchen or community gardens. Underutilized crops can be brought into production in many ways and can open up new possibilities for community participatory production as well as village level processing and marketing. SEANUC experience in South Africa is just one example of the way in which underutilized crops can be used to enhance food security, improve nutrition and contribute to the sustainable rural livelihoods. ■

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