

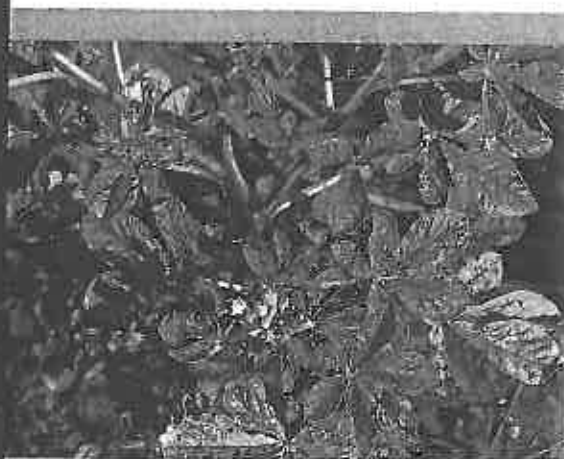
Synergy of science and tradition can yield **IMPROVED NUTRITION**

A study of two villages in the Mopane district of Limpopo has shown that indigenous knowledge integrated with scientific know-how can optimise agricultural production and help alleviate poverty in agrarian households. TIM HART and INEKE VORSTER compiled a valuable record of indigenous (or local) knowledge relating to the production of African vegetable crops.



AFRICAN VEGETABLE CROPS make a significant contribution to food security and nutrition in these rural Shangaan communities. Researchers made use of a range of data-collection approaches, or Participatory Rural Appraisal tools, ranging from workshops to informal, semi-structured interviews to participant observation. A formal questionnaire surveyed 108 randomly selected households to assess consumption patterns and the significance of African leafy vegetables as a foodstuff. By examining and recording local practices, foundations have been laid for further collaboration between science and tradition.

In the two villages, indigenous knowledge is important as a means of producing food crops. The survey showed that 96% of the respondents had consumed African vegetables during the past year and 95% said they had dried and stored some African vegetable leaves to ensure a food supply during the dry winter.



From left: Thyaka (Amaranthus); Rirhudzu (Cleome or spider plant); Tindhwembe (pumpkin/squash); Dried Guxe (Jutes Mallow).

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African leafy vegetables such as *Amaranthus*, *Cleome* (spider plant) and pumpkin/squash leaves compared very favourably with exotic crops like cabbage. African vegetables are still the predominant source of fresh produce in the villages. However, they are being gradually replaced by the availability of exotic vegetables, which residents are able to purchase using their social grants, pensions, remittances and wage-labour earnings. Despite the fact that cabbages have to be bought, they are popular among the younger generation.

African vegetables and traditional food crops are high in nutrients and thus sufficient availability and increased consumption could reduce undernourishment. Simple cropping and harvesting farming practices are in place, but there is the possibility for the implementation and integration of more scientific agricultural methods like improved intercropping – a cropping process in which two or more crops are planted together on the same piece of land so that they can share from each other's beneficial characteristics. There is also definite awareness of the need for improved soil nutrition and support in this area would be vital to optimise production.

Any intervention must take cognisance of the impact of water scarcity in the area. Limited land resources and the risk of crop failure make farmers open to new developments and there are a number of areas where practices could be improved, including rainwater harvesting and the improvement of the soil's water-retention abilities by improving soil content.

It is likely that science can collaborate with some of these households to develop technologies that will enhance current endeavours and optimise production.

Seeds are still collected and stored, but this is a declining practice and plant populations have diminished in the last 40 years. Lack of water-management skills results in seed losses through erosion as a consequence of uncontrolled run-off during summer thunderstorms.

Agricultural rituals and taboos, such as forbidding a woman to enter a cropping area or field during menstruation or for the first couple of months after giving birth, are generally only implemented by the older generation. These taboos also had an important social function in that they allowed women to rest and get their strength back. The younger generation question them and do not seem to obey them. They argue that times and social structures have changed, therefore the taboos are no longer appropriate or applicable. Young women, for example, are often head of a single-parent household and have no choice but to enter the fields, no matter how 'unclean' they might be.

African vegetables crops still have some direct economic significance, but only for a relatively small group of people. Some crops are sold in the surrounding areas in small volumes. However, there is a market and some vendors outside the villages wished they could get more varieties as there is demand for diverse produce.

Households rely on indigenous agricultural

knowledge to ensure that they produce a supplementary source of food within the constraints imposed upon them by poverty and their physical environment. However, given developments in agricultural research, it is likely that science can collaborate with some of these households to develop technologies that will enhance current endeavours and optimise production. Appropriate technologies would have to be of low cost and rely predominantly on locally available resources.

Water management and soil management are the two main challenges in the area and need to be dealt with simultaneously. If there is no intervention at this level, agriculture will decline and there won't be much point in considering other areas such as seed systems, food preparation and processing.

It is vital to record the process of how the two knowledge systems are integrated. This would provide a model that could be used as a tool for further participatory approaches like farmer field schools and participatory technology and innovation development.

The study, *The importance of indigenous knowledge in reducing poverty of rural agrarian households*, was partly funded by the National Indigenous Knowledge Systems Office of the Department of Science and Technology. The full report can be downloaded from www.hsrc.ac.za.



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