

*A monthly features service about science, technology, and development*

Approx. 900 words

IDRC-F211e

GROUNDNUTS MAKE A COMEBACK

by Fibi Munene

KENYA, IDRC -- Thirty years ago, the collapse of the grandiose British Groundnut Scheme ruined the reputation of a potentially promising crop in East Africa. Only now are groundnuts starting to be taken seriously again in the region.

The problems began with shortages of cooking oil in Britain after the Second World War. Needing a quick solution to appease public opinion, the government of the day despatched a mission to its then colonies of Tanganyika (Tanzania), Northern Rhodesia (Zambia), and Kenya, to seek "a great new source of production".

After a whirlwind 10-week study, some 1.3 million hectares of virgin land in Tanzania were deemed suitable for large scale mechanized production of groundnuts, something never before attempted. The seed of the groundnut (*Arachis hypogaea*), a legume also known as peanut and monkey nut, contains up to 50 percent edible oil and 35 percent protein.

Farmed by the British Overseas Food Corporation, the lands were at Kongwa in the Central Province, Urambo in the Western Province, and Nachingwea in the Southern Province. Contour cultivation and strip cropping, alternating groundnuts with grass, was practiced on units of 12,000 hectares each.

From the outset, clearing the woody vegetation and preserving the soil proved difficult. Because of soil compaction and abrasion, Kongwa was found to be unsuitable for mechanized production of groundnuts, sunflowers...even cereals. In Urambo, unpredictable dry periods and poor fertility results in severe oil erosion, and the varieties of groundnut planted were stricken

by rosette virus, a disease that the survey had not considered. Although Nachingwea was better suited to groundnut production, rosette and leaf spot disease caused serious crop losses. And when rains delayed mechanized cultivation of the crop, the weeds took over the fields.

In the early 1950s, after investments of more than US \$80 million, the British Groundnut Scheme was abandoned. Research on the crop in Tanzania also came to a halt.

Although large-scale plantation of groundnuts has followed in other parts of the world, they are grown solely as a subsistence crop in Tanzania. Some 75 percent of Tanzania's cultivated lands are in dry, low fertility areas. Small farmers produce all important food crops -- cereals such as maize, sorghum, and rice; legumes including soybean, mixed beans, peas, and groundnuts; and cassava, sweet potato, and bananas. They use few inputs and hand tools only. Yields are low and production of soybean and groundnut has declined in recent years. The lack of high yielding varieties adapted to Tanzania's conditions and poor cultural practices are largely to blame.

To help solve this problem, a project was begun in 1980 by the Faculty of Agriculture, Forestry and Veterinary Science of the University of Dar-es-Salaam, with the support of a grant from Canada's International Development Research Centre (IDRC). The project aims to develop high-yielding varieties of food legumes adapted to Tanzania's various agro-climatic conditions. And while groundnuts are the main crop being studied, the researchers are also interested in soybean and green gram varieties.

A collection of Bambarra groundnut (Voandzeia subterranea) will also be made and screened. The Bambarra nut is one of the most drought-resistant legumes, but virtually no research has been carried out on its improvement. In addition, agronomic experiments will be undertaken to develop a package of practices for various areas in the country.

In Mozambique, south of Tanzania, groundnut cultivation has experienced similar problems. Some 200,000 hectares -- less than 4 percent of the country's

cultivated lands -- are planted to groundnut, mainly along the coast. The yields of 120 to 400 kg/ha are low compared to the 1000-1500 kg/ha obtained in other African countries.

Neglected during the colonial era because it was a subsistence crop, groundnut has great potential in the country, both for local consumption and for export. Researchers estimate that 50 percent of Mozambique's agricultural land is suited to its production. The most serious problem limiting yields is disease: rosette and leaf spot are again threats, and a new disease, groundnut rust, is also causing heavy losses.

In 1975, a research program on groundnut was initiated at the University Eduardo Mondlane in cooperation with scientists at the Instituto Nacional de Investigaçao Agricola (INIA). A modest germ plasm base of different varieties was established and available cultivars were multiplied and screened for yield, resistance to disease and pests, and protein and oil content.

This program is now continuing with IDRC support to develop better-adapted varieties and improve cultural practices. More than 200 local and exotic cultivars are being screened for disease and pest resistance, high yields, and high oil and protein content. Improvements to cropping systems will also be made and introduced to farmers. And as small farmers often grow groundnuts with maize, the best groundnut varieties for intercropping will be selected.

Compared to the British Groundnut Scheme, these projects are certainly modest, but they have the potential of bringing lasting improvements in groundnut production. As and the Tanzanian project leader notes: "Groundnut research in Tanzania began with the IDRC-supported project because we did not inherit any useful information from the Groundnut Scheme. Local people were not involved in the Scheme except as labourers. At present, Tanzanians are the executors of the groundnut improvement program. The advantages of this approach are obvious.