

Keeping control of processing and

Higher production is not enough for smallholders. The harvest brings them more value if they can process it into higher-value products or store it until needed (or prices have risen) and can transport it to where it can be used or sold. Their decision to increase production largely depends on their ability to control the processing and use of the additional yield after harvest. Philippe Teller tells how this is being achieved by cassava farmers in Haiti.

Philippe Teller

Programmes to promote local processing and storage of farm products have gained in importance in many parts of Central America. Their aim is to ensure that local needs for basic foods such as flour, bread, sugar and oil are met year-round, and that processing activities to increase the value of the product and provide more income take place in the farming communities. Village service centres for processing cassava are an example of this.

Bread of the tropics

Cassava (*Manihot esculenta*, also known as manioc or tapioca) is highly perishable: the roots rot quickly after harvest. Postharvest treatment can make it into a stable product that can be stored for several months, making the producer less dependent on market price fluctuations.

In Haiti, it was commonly made into cassava bread, which people especially like to eat with peanut butter, avocado or guava paste. But this delicious local food has been increasingly replaced by French bread, making the country dependent on wheat imports. One reason for the decline of cassava is that it is hard work to make cassava bread: to harvest the roots, carry them, scrape them by hand on a grating board, press out the toxic fluid and cook them on a griddle over a wood fire. The ratio between the effort made and economic gains is very poor (about US\$2 for a day's work). Growing cassava and making cassava bread seemed to be dying out.

The cassavery

Close observation of old people who still know how to make cassava bread, and taking part in the actual work, revealed how complex and difficult it is to produce. Improvements were sought to reduce the labour inputs for the most strenuous tasks: scraping and pressing.

The community of Ste Thérèse was the first to experiment with a "cassavery" or local service centre for cassava processing. It has three parts:

- a cleaning area, with shade roof and cement floor, where the roots can be peeled and washed in large cement containers;
- a milling section, with roof and sloped cement floor to allow easier cleaning; here, a grate fixed to a wooden drum revolves 800 times per minute, run by a small electric motor (the only motor in the whole operation). It can mill as much cassava in 20 minutes as 5 people can mill by hand in 8 hours. Attached to the

mill are two presses inspired by the traditional leverage model but able to do in 40 minutes what used to take an entire day;

- a kitchen, with wood stoves covered with large metal baking sheets.

The women and men who make the bread bring their cassava, fuelwood, salt, knives and cooking spoons into the community-owned cassavery. If they want to work at night, they also bring lamps. Some hand-carts are available for transport inside the centre.

A hired worker operates and maintains the mill and presses, but the cassava owners help him bring the products from



Photo: Suraphong Kongthantuk

The weaving associations sell their handwoven silk products to the Panmai group. The products are then collected in the Panmai group shop and sold to customers directly or transported to Bangkok for further sale.



Photo: Suraphong Kongthantuk

Women as innovators: in NE Thailand, village women experiment with natural dyeing techniques for their handwoven silk. Here they are experimenting with coconut husk, a dye-stuff which is abundantly available.

marketing

mill to press. He stays into the evenings, when the producers find more time (and coolness) for the work. For his services, the producers pay him a fee, plus the cassava-processing byproducts for feeding pigs.

At first, producers brought only small amounts of cassava to see how the new cassavery worked. Gradually, as they saw the advantages, they began to bring more - and to grow more. Now, ten years after the first centre started, it operates at full capacity both day and night as soon as cassava is ready to harvest. Over 50 other centres of this type have since been set up in Haiti.

Technical improvements

Over the years, many technicians and local handymen have improved the cassaveries. The mills are now more compact, less expensive, easier to maintain and more efficient. The presses are quicker, smaller and more reliable. Technology has been developed to mill the cassava without a motor. The manually-operated mills work up to ten times more efficiently than the traditional grating method and cost only 1/7 the price of the motorised mill.

Traditionally, cassava was baked on a "comal", a flat clay platter resting on three stones. In a country threatened by deforestation like Haiti, development must include ways of saving fuelwood. The best-equipped cassaveries use enclosed wood burners with a chimney in which the draft can be regulated. These burn one fourth the quantity of fuelwood formerly needed for cooking cassava bread.

Modern marketing image

The cassava bread is both eaten at home and sold, mainly on the local market. Mechanisation has improved product quality, as the mill grates more finely than the traditional method. As the mechanical press works more quickly than manual pressing, the product can be cooked more quickly after milling and is thus fresher.

Cassava used to have the image of being prepared by sweating peasants leaning over grating boards for hours producing "cassava suée" (sweaty cassava). The peasants now sell their product using the creole term "cassava électrique", completely changing the image of this local food.

Also changes in product presentation have been made. Traditional cassava bread was large and varied in size. In the cassaveries, the cooking plates are perfectly round and exactly 80 cm in diameter, so the products can be piled and transported easily. Experiments were then made with small cassava breads, 18 cm in

Weaving threads together makes strong cloth

Marketing is an important postharvest activity. Why produce more if you cannot use or sell it? But how can marketing be organised so that the small-scale producers gain as much benefit as possible? Here is an example of silk marketing in Thailand.

Silk weaving is an important traditional activity of women in northeast Thailand. Village women asked ATA (Appropriate Technology Association) to support them in their efforts to sell the surplus of their handwoven silk cloth. Since 1984 ATA has been assisting several villages in Roi-et Province to improve the quality of their silk cloth, the dyeing techniques and the marketing of the products. Initially ATA took responsibility for selling the products. At the same time, women's weaving associations were formed in the villages. In 1991 a business organisation for marketing the products was established: the Panmai Group.

How does this set-up work? In each of the 24 villages there is a weaving association, whose members make silk cloth. Each association elects 5 members who are responsible for:

- production plan: at the beginning of each weaving season the committee checks with the members how much they expect to weave that season; during a meeting with the project staff and Panmai Group, the quantities, colours and patterns of products are decided upon;
- supply of raw materials;
- quality control;
- pricing (depending on pattern, size and quality);
- bookkeeping.

The weaving associations sell the products to the Panmai Group, which sells the products to consumers. Selected members usually take part in promotional activities in the region and in Bangkok. Their products are especially valued for the use of natural dyes, handwoven cloth, special patterns and, in general, the good quality. They give explanations and demonstrations to interest the consumers.

All members of the weaving associations hold shares in the Panmai Group, presently 25%, but this is expected to increase soon to at least 50% of the shares. The rest are owned by ATA and some other interested nongovernmental organisations (NGOs) in the area. The Panmai Executive Committee consists of elected members of the weaving associations, some ATA staff members and people from other shareholding NGOs. Members of the Panmai Group are obliged to sell their produce to the Group. At the end of the year, the profits of Panmai are divided among the shareholders.

Source: Developing tools together: a report of a study on the role of participation in the development of tools, equipment and techniques in Appropriate Technology Programmes by J van der Bliiek and L van Veldhuizen. 1993. ETC Foundation, PO Box 64, NL-3830 AB Leusden, Netherlands.

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diameter, just right for an individual portion. Producers found that they could sell the smaller breads at up to three times the price per weight of the large ones. The standardisation in sizes of cassava bread has improved its image and gives the buyer the guarantee of buying modern "cassava électrique" - even when an electric motor is not used!

Signs of success

A recent evaluation revealed that the cassaveries are popular for the following reasons:

- The product is ready to eat, like other "modern" foods, and was well-liked already before technical innovation. It can be easily sold locally, but also transports well, so any surplus can be sold on more distant markets.
- The local product is locally processed. The producers continue to own it during and after processing. The income stays in the village.
- Because the same person processes and sells the product, there are few problems of work organisation and discipline. Those who come first get served first. If one wants the help of relatives or friends to peel, wash or cook the cassava, they can come along to the centre.

This allows traditions of mutual help and family solidarity to continue.

- The common problems of processing cooperatives are avoided. There, the raw material is bought from the farmers, hired workers process it, the profits from sales are shared among the members. This requires good management and reliable bookkeeping A cassavery is small enough for the users to understand how it functions and manage it themselves.
- When a centre has reached full capacity, a similar small centre can be set up in another village, rather than expanding or modernising the existing one to a point that exceeds local management capacities. Moreover, a larger number of small centres keeps transport ways short and provides a good off-farm source of income for more rural communities.

Reference

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