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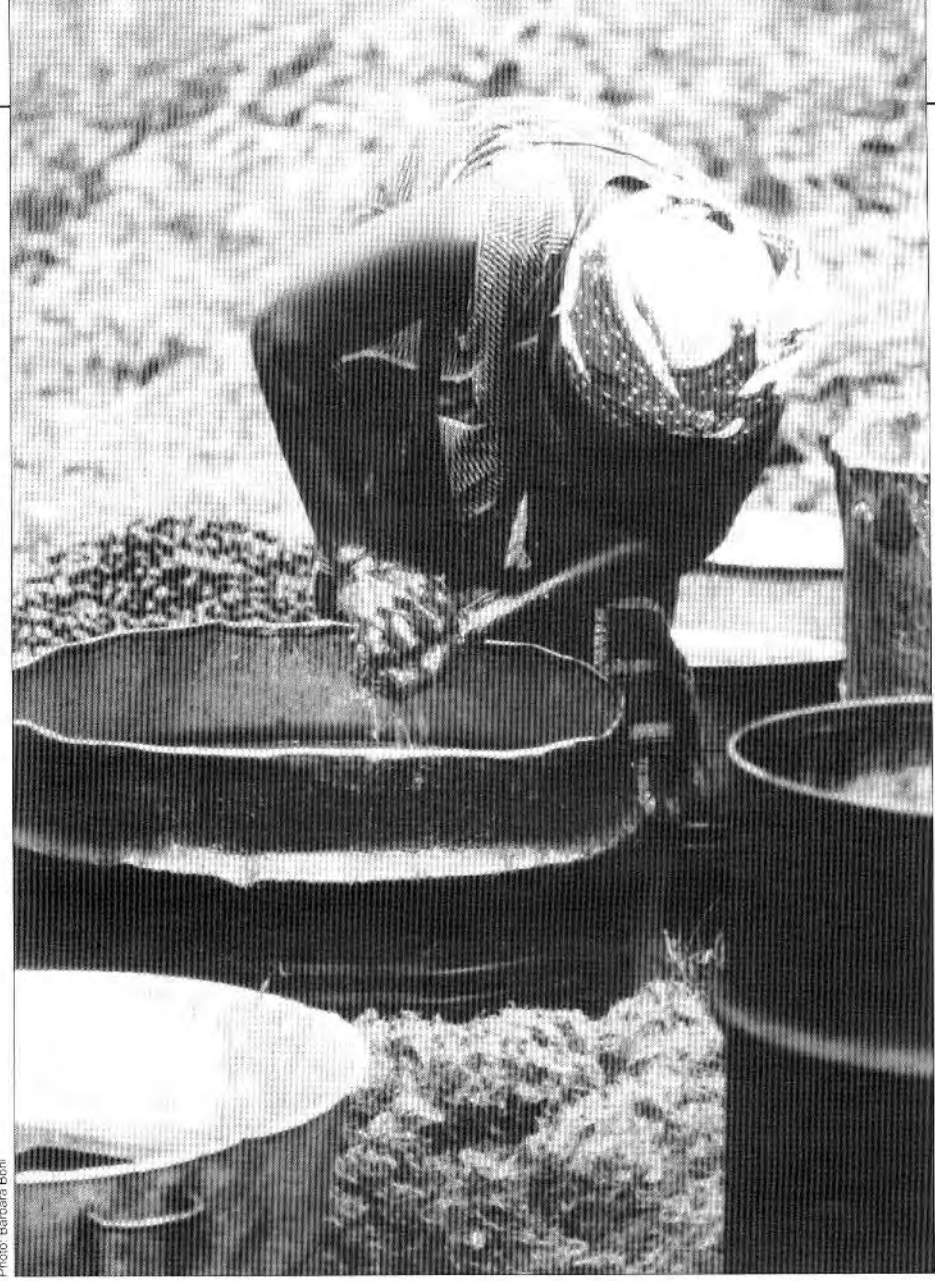

Photo: Barbara Böni

Women solve a pressing problem:

Easing the work of making palm oil

Most African women process food with traditional methods which demand much labour and bring low returns. Many technologies have been developed to ease their workload and improve processing efficiency, but few have been adopted in rural areas. The technology seems appropriate to those who designed them - mostly men - but not to the women meant to use them (ECA 1989). Moreover, they often do not address women's most urgent problems (Stamp 1990). Barbara Böni tells how women in Côte d'Ivoire helped to identify and adapt new technology to meet their needs.

In the Toura village of Dozéré in the rainforest zone of Côte d'Ivoire, ways of improving food processing were studied. The aim was to define criteria for successful development of such technology for rural areas. Over four years, the project involved socioeconomic analysis of village activities, problem identification, developing an improved technology, testing and evaluating it in the village, extending it and evaluating its adoption.

Learning by taking part

To get to know village women's problems and their views about possible improvements, a participatory approach was taken: staying in a village, observing and taking part in village activities, listening to villagers and asking questions. Special attention was given to women's workload and earning possibilities and to food processing. Having a technical training, I found it very interesting to apply sociological methods like participant observation (Casley & Kumar 1988) and informal interviews (Rhoades 1982). This helped me understand local problems and how they are interlinked.

During this process, cultural aspects were important. The traditional structures of authority and decision-making had to be respected. Although I focused on young wives as the main food processors, it proved vital to consult with and involve also the men and older women.

Local food technology

Both women and men in the village helped make an inventory of all types of food processing practised there. I observed and then participated at least twice in each process and noted all problems mentioned by the women. In a group, these points were discussed and we listed priorities for improvement.

The main problem defined by the women was the hard and tiring work of extracting oil from fruit of the oil palm (*Elaeis guineensis*). The men cut the fruit from the wild palms in their fields. The women cook it in oil drums. Usually, a group of young men pound it with pestles in a big mortar. The women then mix the mass of fruit pulp and kernels with water. The kernels settle to the bottom. The fibres are washed and squeezed out twice to remove the oil. The resulting mixture of oil and water is boiled for about two hours. After cooling, the palm oil is skimmed off. The women said the squeezing by hand was especially strenuous.

Palm oil plays an important role in human nutrition in Côte d'Ivoire, particularly in rural areas in the west, where it is often the only source of fat. Most oil made in this way is consumed directly by the producers. The remainder - perhaps 7500 tons per year - is sold through informal channels.

Criteria for improvement

An improved technology for palm-oil processing had to meet socioeconomic and cultural criteria. The villagers had to be able to afford the investment needed. The technology had to bring higher cash gains and reduce workload. The women had to be in a position to control the technology and gains.

As for technical criteria, the new technology had to be simple enough for the women to cope with, preferably similar to the traditional one. The equipment had to be strong and reliable, and local maintenance had to be possible. Its size had to suit the annual amount of raw material processed. The end product and produc-

The women wanted to find a solution to the tiring and time-consuming work of washing out and squeezing the palm oil.

tion efficiency had to be equal to or better than with the old technology.

Women's views

These criteria were discussed with the women interested in improved oil extraction. It was most important to them that the work be eased, without changing the taste of the oil. Reacting to young men's remarks that, with a "machine" (with motor), they could also make oil, the women stressed that they wanted to continue doing it themselves. Each woman could invest or repay only FCFA 1500 (about US$ 5.60) a month. The women wanted to invest no more than they could repay within a year.

The first step was to see if anyone in the village or region knew of another way of extracting oil. This was not the case. But, 600 km away, in plantations near Abidjan, there were oil presses which had been used in colonial times. The next step was to seek information from research institutes and literature on small-scale palm-oil extraction. The screw press (without motor) designed by the Royal Tropical Institute (KIT) in Amsterdam met the criteria best.

Women test and adapt

A first sample of this press was built by local manufacturers near Abidjan and initially tested by a few women living nearby. They found that the basic frame was too large and the sides of the oil receptacle were too low. These were changed.

The modified press was then brought to the village, where the women agreed to test it for a year. They expressed many ideas to improve it. The perforated cylindrical cage was replaced by a lighter one. Handles were added to make it easier to carry. Two cooking and reheating drums were added to the existing two, so that more women could work at the same time.

The women decided how to organise the use of the press. Together with the men, they chose a new processing site. The women's leader was responsible for the press, while three young women assisted those wanting to use it for the first time. For this service, they were given a small part of the produced oil or were helped later in their fields.

With the new press, about 11% more oil could be extracted from the palm fruits. Use of water and fuelwood could be reduced by 63% and 28%, respectively. The oil was of better quality: water content was lowered by 29%, and content of acids and peroxide by 57% and 59%, respectively. This means the oil can be stored longer without losing quality. The women said the work with the press was not as strenuous as the traditional method.

Confidence grows

In 1990, 19% of the village women extracted part of their palm oil with the new press. This grew to 79% in 1991 and to 94% in 1992, when 34% of all palm oil extracted in the village came from the new press.

At first, the women used the press to process only small amounts of their palm fruit. They feared that the resulting oil would not keep as long as traditional oil (up to 10 months). In 1993, for the first time, two women dared to process all their fruit with the press, having experienced that the oil keeps well.

Already in 1991, at a meeting with all 62 women in the village, I asked if they wanted to keep the press. The majority decided to buy it. To raise the FCFA 100,000 needed, I suggested that each woman using the press pay into a central fund or give part of the extracted oil, to be sold later in common. They preferred to collect the money in two rounds 4 months apart from all women, like they do for other collective activities (water-pump repair, house construction for teachers, village medical box).

More villages interested

The last stage of the project was studying the spread of the technology in the region (40,000 km^2). A reliable local manufacturer (a technical school in the region) was found which would produce the press on order. Women's leaders, project workers, extensionists, technical school directors and many others were invited for a demonstration day. Some women from the testing village showed and explained the process and answered questions.

The word began to spread. The manufacturer could sell two presses in the first year and eight in the second. It looks as though a basis has been laid for wider application of this improved food processing technology.

Merit of the approach

This success is certainly due to the approach taken: developing and testing the technology together with the end users. The research started by defining only the field of action: food technology. The specific problems to solve and the type of technology needed were defined by the women. The key step in this development process was diagnosing the existing situation together with the villagers, who set their own priorities for improvement. ■

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Note: Additional technical information about the palm-oil press can be obtained from FW Korthals-Altes, TOOL, Sarphatistraat 650, NL-1018 AV Amsterdam, Netherlands.

Photo: Barbara Boni

A simple screw press was tested by women, who suggested how it could be improved.