

Boosting rice-related incomes

A range of new technologies and techniques is now available to improve the livelihoods of people who depend on rice production and processing in Africa and Asia. One simple technique is priming, which poor farmers in Asia and Africa can use to produce better rainfed rice crops in upland areas. Better post-harvest processing techniques are another way of boosting livelihoods in other areas, as these can be used to improve the quality and salability of the rice being grown. In Africa, work in Ghana has paved the way for post-harvest rice technologies like improved parboiling that could also be applied in other countries in the region.

On-farm seed priming

Priming rice seeds by soaking them in water overnight and then drying them so that they don't stick together is a low-cost technique that provides major benefits if done properly.

In fact, studies show that rice plants grown from primed rice seeds flower and mature earlier than plants from unprimed seeds, and often produce more grain. Primed rice seeds also germinate better, and the plants grow more quickly and strongly, which allows them to compete better with weeds and produce thicker, healthier stands.

How effective is the technique? Well, on-station trials in Nigeria, Cameroon, and Ghana found that priming boosted yields by 22% to 37%. Plus long-term trials with over 1600 farmers in Cameroon, the Gambia, Ghana, Nigeria and Sierra Leone have shown that producers like this simple but effective technology and are willing to adopt it. High rates of adoption, and the fact that farmers will pass this information on to other farmers, suggest that this technology could be a real winner in the race to improve people's livelihoods.





Photo: S. Mann

Post-harvest processing

In Ghana, researchers have used a range of new and improved post-harvest technologies to improve the quality of locally produced rice as part of the government's drive to cut rice imports. This work could provide a template to guide future efforts in other countries like Nigeria, Mali, Burkina Faso, Benin and Togo.

Efforts to date have already produced effective working groups and mechanisms to help Ghana's Ministry of Agriculture transfer knowledge to relevant end-users. Knowledge of new techniques is also being spread through demonstration sites set up at 10 locations in northern Ghana, and through five training manuals and a handbook of rice recipes produced by the programme.

Good examples of this work are the improvements that have been developed for traditional methods of parboiling rice. Efforts have also been made to train agricultural extension and development officers, farmer representatives, parboilers, millers and marketers, in order to teach them how to apply the improved rice post-harvest handling practices outlined in the training manuals.

How does parboiling help rice production?

In northern Ghana, paddy rice is parboiled to make milling it easier and more efficient. Most rice produced in these regions is parboiled in 40-kg batches by rural women using metal cooking pots, open fires and earth drying floors. The rice itself is grown by small-scale farmers who usually cultivate only 1-2 acres of rice. All this means that rice production and processing accounts for a large proportion of the livelihoods of the rural poor in these regions.

The problem is, however, that the parboiled rice that local women produce to earn an income varies a lot in quality and can't

compete with imported milled rice. The traditional parboiling process is also time-consuming and labour-intensive, and requires lots of firewood and water.

Outputs from the projects have included the design, development, installation and commissioning of a new type of parboiling vessel and management techniques like the planting of trees so that parboilers can obtain wood sustainably. The improved parboiling process the project has developed has a range of benefits:

- It produces a high quality product from good quality paddy,
- It doubles the processing speed,
- It halves the fuel consumption,
- It uses 30 per cent less water and
- It greatly reduces the drudgery of traditional parboiling.

For more information

For further technical information go to the RIU online database at www.researchintouse.com/database and type in **PSP25** (for rice priming) and **CPH03** (for post harvest processing) or email riuinfo@nrint.co.uk

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