Research Into Use

You name it, **cassava can do it**

Faced with a 30-40% surplus in cassava production in Ghana, researchers decided to get creative. They discovered that cassava-based products can be used as alternatives to expensive imported raw materials to produce a wide range of products – from pastries to plywood.

The processing techniques they've developed mean that fresh cassava can be converted into high-quality cassava flour, plywood and paperboard adhesive, glucose syrup and industrial and potable alcohol. Processing industries in **Ghana** and **Nigeria** are now using the techniques to supply national, regional and international markets. This work meets the needs of countries with a relatively low level of development where expensive imported enzymes, adhesives and wheat flour are too expensive.

Improved livelihoods for farmers and savings for industry

So, do these technologies really work and do they help the poor? The answer is definitely 'yes'. The project that produced them began by working with a single group of poor cassava growers in its target area where growers (mostly women) produced about 6 tonnes of cassava per year. However, about 1.7 tonnes of this was simply left unharvested in the ground because there was no market for it.

Starting with 22 members, this first group began turning their surplus cassava into flour and selling it to local bakers. Steady success followed, and by 2002 the group contained 60 farmers all of whom had bank accounts – one definite measure of success.

Photo: J. Esser

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Plus, about a third of them had been able to take out and repay small loans to buy farm implements and pay for school fees. This wouldn't have been possible before as micro-finance previously considered agri-businesses a risky investment. By 2004, the group's earnings from selling processed cassava had risen to £2,552 per year – a substantial extra income for these poor producers.

Agro-processors provide a vital link

Inadequate organization is another key problem that this work has found ways to overcome. For example, cassava flour can also be used to replace wheat flour in plywood production, where it's one element of the glue used. But, larger industrial users like plywood mills are often afraid that farmers won't be able to guarantee a supply.

The answer is to get much larger commercial processors involved who can set up a network of farmers and primary processors to ensure supplies. Independent conflict resolution systems also have to be put in place, however. One way is to have an extension officer, NGO representative, or government body, arbitrate between the different parties over issues like payments, prices, quality and timeliness.

The main driver behind cassava processing for industry must be the private sector. But, there are obvious benefits for businesses that should encourage this. One plywood company estimates, for example, that it's saving £24,000 every year as a result of switching from imported wheat flour to local cassava flour.

What's happening now...and where?

By 2005, there were three commercial processors in Ghana acting as market intermediaries for 5,000 farmers at 15 different locations. They're supplying 15 plywood mills and 6 food industries in Ghana and 9 regional and export markets. A fourth processor has recently started work in Brong Ahafo and has orders to source 700 tonnes of cassava flour per year from 3,000 local farms. But this company sees a potential market for 1,400 tonnes of cassava per year, and this could involve about 10,000 farmers to ensure a reliable supply of raw materials.

A fifth Ghanaian company and a company in Nigeria are also about to adopt the glucose syrup technology. The Nigerian company is setting up a plant near Lagos which could supply 1,000 tonnes of syrup per year to local food and pharmaceutical industries.

Where else could this technology be used?

Countries like Uganda, Malawi, Tanzania and Zambia might be able to make use of this option. However, it has to be remembered that it can only be usefully used if enough surplus cassava is being produced to meet the demands of industry without affecting the supply of cassava as food. This situation is not likely to occur everywhere, so careful studies will be needed to identify those areas that are suited.

Do the sums first

In addition, suitable local industry needs to exist that is willing to make use of local alternatives to imported products. A good starting product is the use of cassava in plywood glue production, as it has a low quality specification and none of the consumer problems associated with food products. But baseline studies are needed to assess levels of supply and demand. Markets must be clearly identified and cost-benefit analyses and business plans prepared to show that technically-feasible initiatives make sound commercial sense.

For more information

For further technical information go to the RIU online database at **www.researchintouse.com/database** and type in **CPH21** or email **riuinfo@nrint.co.uk**

This *New Options Showcase* was developed from research funded by the UK Department for International Development (DFID). The views expressed are not necessarily those of DFID. Details of the researchers involved are given in the database. Research Into Use (RIU) is managed by Natural Resources International Ltd., in partnership with Nkoola Institutional Development Associates Ltd. (NIDA), and Michael Flint and Performance Assessment Resource Centre. RIU is funded by DFID.

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Writing, design and layout: SCRIPTORIA (www.scriptoria.co.uk)