



PARTNER COUNTRY: Papua New Guinea **PROJECT:** Assessing and extending schemes to enhance the profitability of the PNG coffee industry via price premiums for quality (ASEM/2004/042)
DESCRIPTION: In conjunction with PNG smallholder farmers, researchers are working to boost profitability by re-establishing the country's reputation for quality coffee
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Smallholder coffee lift

ACIAR is working with smallholder farmers in Papua New Guinea to help them restore the country's world-wide reputation as a supplier of high-grade coffee

BY JANET LAWRENCE

Papua New Guinea's reputation as a coffee supplier has slipped in recent years, with the decline of the big colonial-era estates and an increasing reliance on smallholder farmers who struggle to meet the quality parameters set by the world's major buyers. Given that 400,000 rural households grow coffee, and a further 20,000 people are employed in its processing and marketing, the need to reverse this trend is a sizeable and economically essential challenge for the country. Today, smallholder coffee farmers produce about 85% of production—about 56,000 tonnes a year.

Previously, the estate sector was renowned for producing some of the world's best coffee, but its decline has resulted in a parallel decline in PNG's reputation as a consistent supplier of high-quality coffee. For the majority of smallholder farmers, roadside

traders pay a single price for parchment (dried beans with the skins still on) irrespective of quality, yet a reliable supply of predictable-quality coffee is crucial for PNG's engagement with the world market.

A group of ACIAR projects has recently set out to redress the problem and to improve the economic returns to smallholder coffee producers and the PNG industry generally. The economics project, now into its second year, has already included a comprehensive analysis of the major constraints affecting the quality of coffee in PNG.

The project began with a review of the marketing arrangements that have traditionally linked smallholders with processors and others in the supply chain. Australian project leader Dr Peter Batt of Curtin University in Western Australia and his PNG counterpart Tom Kukhang, chief scientist of the Coffee Industry Corporation, rose to the challenge. "We began with a scoping exercise, and from this we have learnt a massive

amount,” says Dr Batt. “Our team talked to everybody we could locate who was involved in the industry. We were determined to bridge the gap between producers and their customers.”

Dr Batt has placed a high priority on communication. “Buyers need to show the farmers how to produce better-quality coffee. While good-quality coffee starts with harvesting of the mature, red-ripe cherries, for growers to maintain production their trees need to be regularly pruned, the weeds controlled and fertilisers applied. Farmers then need to be shown how to process the coffee. This begins with pulping, fermenting, washing and drying. If any one of these stages is not performed correctly, quality will be compromised.”

From their initial findings, team members learnt how well coffee-growing fits into the smallholders’ way of life, and therefore how important it was to gain the best outcomes for producers. At the individual farm level, the need for year-round capital was evident. They found that the money received from the sale of coffee first went to meet household expenses (including school fees) and to fulfil social obligations before any thought was given to financing labour to prune the trees or to buy fertilisers and chemicals. As the coffee industry has a poor financial record, the major banks are unwilling to extend credit. Thus, there was a need to develop the capacity of farmers to manage their household expenses and their enterprise expenses.

Because of suggestions in earlier reports that market intermediaries extract excessive returns at the growers’ expense, the team analysed the marketing margins. These showed that, for green bean (the final processed product), coffee farmers in PNG receive 68–80% of the price offered by exporters in Lae. This figure indicated that the processing/exporting sector was relatively efficient and that growers were receiving reasonable

prices as a percentage of the export price. However, such margins were available only to growers close to traders and processors. Others in more remote areas lose some of the margin through the higher cost of transport.

One of the most significant results to emerge from the initial study was the much lower price farmers obtained for parchment relative to cherry. “This is one of those rare instances where farmers get paid more to do less,” Dr Batt says.

Farmers are being encouraged to sell cherry rather than to produce parchment, if they are close enough to a wet mill to deliver cherry on the day of harvest, or if the mill itself can collect the cherry. “By having more control of the process, the mill operators are able to produce a finished product with similar characteristics to the plantation-style coffees.”

Poor communication is considered responsible for the conflict that often flares between farmers and market intermediaries, due to the farmers’ lack of understanding as to how prices are determined on the international market. Farmers were unaware of the financial risks borne by traders and exporters in a volatile commodity market. The team soon realised that informing coffee farmers about risk management and the costs associated with export would improve relationships with their respective traders and exporters.

“While the Coffee Industry Corporation is eager to promote direct marketing from grower to overseas buyers, we have strongly advised against this because of the intricacy of determining price,” Dr Batt says. “Prices are determined by supply and demand on the New York Coffee Exchange and the decisions made by the financial houses to either invest or withdraw from coffee futures. If you want to be a coffee exporter, you need to be communicating with the markets and financial

(Below left) roadside traders in Papua New Guinea; (below) picking coffee.



institutions on a daily basis, and smallholder coffee farmers don't have the capacity to do this."

Since 65–70% of the PNG coffee crop is exported, the price farmers ultimately receive will depend on the prevailing price on the day the coffee is sold, he says. "Furthermore, when you're dealing with futures markets you must also be aware of currency exchange rates and shipping rates, for the final price has to factor these in. At the end of the day, farmers may have to settle for less than they expected, especially for 'Y' grade coffee that goes into making instant coffee, as this market is very price sensitive."

Dr Batt says the key is getting farmers to improve the quality and reliability of supply. "Our major challenge is to encourage smallholders to work together and to produce coffee in a reliable, consistent manner. If there are 20 farmers in a district with 500 kg of cherry ready to harvest on the same day, a processor will have no problem sending out a truck to collect it and to process it as premium coffee. The farmers get paid as the cherry is collected and, on average, receive 20% more than they would receive for processed parchment."

Dr Batt says the recent arrival in PNG of US coffee chain Starbucks is leading to a dramatic increase in the proportion of smallholder coffee sold as cherry for those farmers close enough to a commercial mill. It was

Producing coffee from harvested cherry

In PNG, the wet processing method is used: the pulp is removed from the coffee cherry after harvesting and the bean is dried, leaving it in the parchment skin. Several steps are involved.

First, the freshly harvested cherries are passed through a pulping machine where the pulp is separated from the bean. The pulp is washed away with water and may be dried and used as mulch. The beans are separated by weight as they are conveyed through water channels, the lighter beans floating to the top while the heavier, ripe beans sink to the bottom.

Next, they pass through a series of rotating drums, which separate them by size. After separation, the beans are transported to large fermentation tanks. Depending on a combination of factors—such as the condition of the beans, the climate and the altitude—the beans remain in these tanks for 12 to 48 hours, during which time the slick layer of mucilage is dissolved away from the parchment by naturally occurring enzymes.

When fermentation is complete the beans feel rather rough to touch. After rinsing they are dried to about 12% moisture for storage. The dry beans, now known as 'parchment', are stored until further processing immediately before export.

The final steps involve removal of the parchment layer, polishing to remove the final traces of parchment (optional), then grading and sorting. At this final stage, the coffee is known as 'green bean'. Upon receipt by the buyer, the green bean is then blended, roasted and ground by the final customer.



Hand-sorting green bean prior to export.

also the catalyst for developing fully inclusive quality-assurance programs giving guidelines for the physical and cup-quality characteristics.

"There are also environmental, social-welfare and equity conditions that preferred suppliers must meet. With Starbucks providing the price incentives, these developments align themselves well with our project objectives, especially in promoting the need for quality at the farm level."

Dr Batt says the key to achieving the project's overall objectives is building effective leadership: "The tribal system helps us identify natural leaders among the farmers, and they in turn can influence the formation of collaborative farmer groups and open the lines of communication between the group and the exporters. This is particularly helpful in areas more distant from the wet factories where farmers must produce parchment.

"To ensure that everyone is treated fairly and equitably, it is vital that the parchment is dried to 12% moisture. Farmers who sell parchment with higher moisture content have an unfair advantage over those with parchment at 12% moisture. With the introduction of collaborative farmer groups it is possible to bring in a strict quality assurance that reduces the variation in quality and makes it fairer for all."

Another element that has had to be considered is the value of treating the two crops harvested each year in different ways.

"With the main crop ripening from May to July, the farmers should wherever possible sell their cherry direct to wet mills. However, in December/January, a much lighter 'fly' crop is produced. As the quantities are much lower, it is better for the farmers to process it themselves. They can then store the parchment in their houses and use it like a bank account, taking a portion when they need it and selling it to boost their funds."

Dr Batt says that one of the rewarding aspects of the project, from a personal perspective, is that it is helping to improve the economics of smallholder coffee production while remaining 'in tune' with Melanesian village life. "I find this very encouraging." ■