Prospects for coffee development in East Timor

Fernando Egidio Amaral

Coffee Unit, Industrial Crops Division, Department of Agriculture and Animal Husbandry, Ministry of Agriculture, Forestry and Fisheries

Abstract

Coffee is East Timor’s leading export commodity, with an estimated 16,000 ha of productive coffee gardens and an additional unproductive 16,000 ha. Some 20,000 farm families receive a substantial amount of their income from small coffee holdings, while another 15,000 get a minor portion of their income from this source. Yields are about 150–200 kg of green beans per ha, less than half their potential if improved cultivation techniques were employed. Most of the large coffee estates established in colonial times have been abandoned, and the coffee bushes on them are picked by nearby farmers.

Better and proper application of technology in coffee production needs to be made available to improve the quality for exports. The international standard requirement by OCIA gives rise to continuous inspection of organic coffee to ensure high quality products. There is an important need to improve the quality of coffee and all players in coffee development, namely the farmers’ association, government, NGOs and academics need to address this issue. It is envisaged that in 10 years time a better road network and transportation system will be in place and that improvement in the field of education and training, provision of technical expertise and extension services and better management in post harvest will be achieved. The ultimate objective is to generate income for the country.

Introduction

FOR centuries, coffee has been an export commodity, valued not only for its economic worth but also for its unique refreshing taste and soothing properties. It has long been a leading export earner for the East Timorese. Even with minimal inputs, farmers in the coffee-growing areas of Ermera, Liquica, Maun-Fahe, Ainaro and Aileu manage to obtain reasonable yields, and production will increase with better management. Three varieties of coffee, namely arabica, robusta and liberica, are grown in these five production centres. Coffee is regarded as a leading commodity with a long tradition and good marketability. In the three years following the independence referendum in East Timor, it is the one agricultural commodity that has remained profitable and export earnings have been remarkable. However, a survey needs to be conducted to determine the extent of coffee production per year for the benefit of the country.

Prospects for coffee

Following the international recognition of an independent East Timor, efforts to develop the coffee industry in the future need the close attention of government officials, academics and NGOs. At present, the government focus is on organic coffee with a view to achieving high yields with better quality and price. Coffee sales are still being hampered by quality and production deficiencies. These problems need concerted attention by key players, namely the policy makers, governmental institutions, university colleges and NGOs.

Coffee productivity is declining, with little cleaning/weeding of plantations, pruning of existing trees or planting of new trees. The average coffee production per hectare ranges from 150 to 200 kg per year. In addition, farmers have been unable to achieve a consistently high coffee quality, which leads to cyclical annual problems of low prices and difficulty in locating markets and marketing channels.

Efforts to improve coffee quality

Most areas are covered by old coffee trees, and productivity remains low with current minimal management. The following steps are proposed for improvement:
1. development and establishment of high yielding varieties of arabica coffee where suitable
2. replanting of plantations with new trees
3. development and promotion of better technology for planting, pruning, fertilising, pest control, harvesting, drying, sorting and handling.

### Vision and mission

The vision of the coffee industry in East Timor is to develop coffee plantations in a sustainable way so they are able to compete and respond to changes in markets and competition both nationally and internationally, and able to contribute increasingly to the national economy. The mission is to: a) increase the quality of coffee in East Timor; b) empower the coffee growers; c) contribute to the country’s export earnings; and d) create employment.

### Issues for the development of coffee plantations

#### Production

Coffee culture began in East Timor many decades ago and coffee has long been the country’s leading agricultural commodity. The climate in most of the country, especially the mountainous areas, is well suited to coffee production. Table 1 shows the production, areas, and farmers involved by districts in 1997, illustrating that coffee is grown in most of the 13 districts, with the majority in Ermera, followed by Manufahi, Viqueque, Baucau, Dili, Lautem and Ambeno.

Coffee production in East Timor is based on relatively unmanaged plantations, with bean-gathering and processing by villagers, and scant attention paid to cleaning/weeding, pruning, pest and disease management or planting of new trees. There has been some extension and demonstration of better management, but not much uptake by farmers. Some growers harvest and sell coffee cherry directly to industry processors, while others, without access to processors, process and sell their products in the villages, sub-districts, districts and Dili. Farmers generally receive a low price due to poor quality, owing to the lack of best practice in coffee production techniques.

The most common insect pest of coffee in East Timor is the coffee flower beetle (*Stephanodera hampei*) and the most common disease is a rust (*Hemilia vastatrix*). These affect the quantity and quality of coffee production. Common weeds which affect coffee production are alang alang (*Imperata cylindrica*) and volunteer coffee seedlings. Recently, farmers have raised concerns about decline of the common shade tree (*Paraserianthes falcataria*, formerly known as *Albizia falcataria*) caused by gall rust (Old and Dos Santos Cristovao, these proceedings), which is now common over all production centres of East Timor.

#### Harvest and post-harvest

Coffee is harvested between March and August/September. Harvesting is not continuous but occurs in three stages — the initial stage (*lelesan*), middle stage (*panen besar*) and final stage (*racutan*). The first stage involves collection of dry and damaged coffee berries.

### Table 1. Plantings, production and number of farmers in coffee production by district (1997).

<table>
<thead>
<tr>
<th>District</th>
<th>Area of Planting</th>
<th>Production (ton)</th>
<th>Average Production (kg)</th>
<th>No. of Farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TBM</td>
<td>TM</td>
<td>TT</td>
<td>Total (ha)</td>
</tr>
<tr>
<td>Covalima</td>
<td>56</td>
<td>106</td>
<td>105</td>
<td>267</td>
</tr>
<tr>
<td>Ainaro</td>
<td>542</td>
<td>3,695</td>
<td>81</td>
<td>4,318</td>
</tr>
<tr>
<td>Manufahi</td>
<td>655</td>
<td>4,325</td>
<td>1,032</td>
<td>6,012</td>
</tr>
<tr>
<td>Viqueque</td>
<td>0</td>
<td>0</td>
<td>284</td>
<td>284</td>
</tr>
<tr>
<td>Lautem</td>
<td>0</td>
<td>10</td>
<td>6</td>
<td>16</td>
</tr>
<tr>
<td>Baucau</td>
<td>15</td>
<td>56</td>
<td>60</td>
<td>131</td>
</tr>
<tr>
<td>Manatuto</td>
<td>152</td>
<td>411</td>
<td>129</td>
<td>692</td>
</tr>
<tr>
<td>Dili</td>
<td>2</td>
<td>14</td>
<td>8</td>
<td>24</td>
</tr>
<tr>
<td>Aileu</td>
<td>168</td>
<td>244</td>
<td>371</td>
<td>783</td>
</tr>
<tr>
<td>Liquica</td>
<td>1,045</td>
<td>3,244</td>
<td>1,077</td>
<td>5,366</td>
</tr>
<tr>
<td>Ermera</td>
<td>3,900</td>
<td>10,510</td>
<td>13,411</td>
<td>27,821</td>
</tr>
<tr>
<td>Bobonaro</td>
<td>263</td>
<td>815</td>
<td>986</td>
<td>2,065</td>
</tr>
<tr>
<td>Ambeno</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>6,799</td>
<td>25,434</td>
<td>17,551</td>
<td>47,784</td>
</tr>
</tbody>
</table>

*Source: Timor Timur Dalam Angka 1997.*
cherry, the middle is when the bulk of harvest occurs, and the final stage is devoted to picking the few remaining ripe, green and fallen cherries to break pest and disease cycles. In the unmanaged conditions of East Timor, many coffee trees are very tall and this poses difficulties for farmers. Much time is spent picking cherries, with little time for local sorting into red green and black cherries. This, in turn, contributes to the low quality of coffee.

Coffee is traded as dry beans, referred to as hulled (beras) or makt coffee, after removal of flesh and skins. There are two systems of processing: dry processing or Oost Indische Bereiding (OIB) and wet processing or West Indische Bereiding (WIB). Some farmers use the dry processing system where the cherry is picked and dried under the sun for 10 days and then stored until it is powdered and sold. The wet processing system in general is handled by larger processing plants, such as Cooperativa Café Timor (CCT). Since the purchasing power of CCT is limited (20–30% of the crop), not surprisingly, many farmers prefer to process their own coffee beans using the wet processing system. This process follows a procedure of collecting cherries, sorting, pulping, fermenting, washing, drying and sorting again, often in a traditional way using an open hole which allows contamination and loss of quality. Some farmers are able to use a local pulping machine for this processing, although the end product is often still poor.

**Marketing policy**

The price of coffee on the world market fluctuates widely, which poses difficulties in setting the local price. Coffee exporting countries such as Brazil, Colombia, Uganda, Ethiopia, and Angola determine the world price, with exporters in East Timor having little influence and often receiving low prices because of low quality. As the main coffee exporter in 2000, CCT exported about 20–30% of production or some 2000–3000 tonnes. Other companies wanting to buy coffee from farmers for export were restricted by the low quality. CCT can guarantee quality as it buys red cherry direct from farmers and processes immediately in the factory, which in turn enables the company to offer good prices to farmers. Other factors, in terms of marketing, that need attention, are the availability of market information, understanding of marketing channels, establishment of farmers’ associations and availability of infrastructure.

Many improvements in coffee production and marketing are needed. Access to market information is very important in considering price fluctuations and market directions and to serve as a base for policy making. A feasibility study on marketing channels is needed to provide an overview of maximum and minimum prices that must be received by farmers, middle agents and exporters. Another important factor to be taken into account is the expansion of farmer associations or groups which serve as forums to discuss and promote common interests. Appropriate infrastructure also needs upgrading, including a better telecommunication system, established associations and business partners, and better road and transportation systems.

**Expected outcomes**

Better management of coffee plantations with appropriate improved technologies should lead to better yields. It is estimated that some 16,000 ha of ageing coffee trees are no longer productive. Given that about 3200 ha can be replanted each year, it would take five years to replant 16,000 ha. To undertake this work, farmers need a better understanding of good techniques and access to micro-credit facilities. To minimise the burden on the government and farmers, selective replanting is suggested. For example, farmers with one hectare of coffee would replant and rehabilitate 0.25 ha each year for four years, to create a continuous production and income stream, where the first year planting was already productive when the third and fourth year replanting was undertaken.

In replanting, it is important to select superior seed with high yield potential and resistance to pests and diseases. In managing plantations, it is desirable to prevent trees from becoming too tall and difficult to harvest by regularly trimming primary branches, and regularly controlling pests, diseases and weeds. A combination of replanting and better management can increase production from 150–200 kg/ha to 260–300 kg/ha.

An emerging national crisis for the coffee industry, as mentioned above, is the gall rust disease caused by *Uromycladium tepperianum* which has appeared on the common coffee shade tree *Paraserianthes falcata* (formerly *Albizia falcata*). Technical staff of MAFF have commenced intensive monitoring in five production centres to develop a better understanding of the disease. It is thought initially that the problem might be best managed by replanting resistant *Para- serianthes falcata* or replacing it with *Casuarina junghuniana* and *Leucaena leucocephala*.

In terms of harvesting, it is expected that careful application of better technology, such as pruning, will make it easier and quicker to harvest coffee in the field. Attention to removal of insect-damaged fruit at early and late harvests will help with crop hygiene, especially control of *Stephanoderes hampei*.
After harvest, coffee can be processed either wet or dry, as described above. Wet processing is costly, as it involves capital investment, but it guarantees good quality. At present, MAFF staff and some NGO representatives are developing and rehabilitating several processing centres as a demonstration, with the hope that all farmers in farmer groups will be able to develop simple processing centres for use where there is no access to bigger processing factories. It is hoped to develop three or four processing centres a year over a period of five years. It is important in processing, after separation of the flesh and skin, that coffee beans are dried to an optimum moisture content of 10 to 13%, as above this range, moulds are a risk and below it, breakages may occur.

Coffee is marketed as beans with a moisture content of about 13%. It is hoped that the value of coffee exports from East Timor will increase every year. This will require better information on a weekly basis about market related issues and coffee prices, to facilitate the buying and selling process between farmers and traders and to ensure farmers do not feel they suffer financial losses. To strengthen the bargaining position between farmers and traders, there is a need to establish farmer associations at the village and district level, and it is hoped this can be encouraged to promote better marketing outcomes for farmers. Marketing also requires better infrastructure and the government is allocating budgetary support for road infrastructure that links market centres to areas of coffee production. It is hoped that in five to 10 years time road transport facilities will not be a constraint to coffee marketing.

Recommended programs and solutions to improve the coffee industry include the empowerment of human resources by providing education and training for agricultural staff, extension and training for farmers, training in organisational management and development of a professional coffee association; and increasing the quality of coffee from Timor by: establishment of one quality seed centre, replanting of 16,000 ha of old plantations, establishment of three or four processing centres a year, providing better means of production, intensive monitoring of gall rust on *Paraserianthes falcataria* and testing of alternative shade trees for coffee.