

# SMALL-SCALE FOOD PROCESSING ENTERPRISES IN MALAYSIA

Ghani Senik  
Food Technology Research Station  
MARDI, 16800 Pasir Puteh  
Kelantan, Malaysia

## ABSTRACT

*Small-scale food enterprises have played a very important role in the Malaysian economy, particularly in terms of employment generation, better income distribution and as a training ground for entrepreneurs before they invest in larger enterprises. Small-scale food enterprises also have important linkages to related industries such as the manufacture of machinery, and food packaging materials, and suppliers of food ingredients. It is envisaged that small-scale food enterprises will continue to expand in line with policies and incentives introduced by the government.*

## INTRODUCTION

It is usual to discuss small- and medium-scale industries in Malaysia as a single group. There are an estimated 30,000 such enterprises in Malaysia. A recent survey conducted by the Ministry of International Trade and Industry showed that they are of four main types: processed foods (33%), wood products, (24%), fabricated metal (15%) and building materials (9%) (Malaysian Industrial Development Authority *et al.* 1985). These small and medium-sized industries play a very important role in the Malaysian economy, especially in terms of generating employment. They also have a favorable impact on income distribution in the country, and serve as a training ground in developing the skills of industrial workers and entrepreneurs.

## THE FOOD INDUSTRY

There are more than 9000 food processing factories in Malaysia, of which 95% are classified as small-scale. Small-scale enterprises are defined as those which have shareholders' funds or net assets of US\$200,000 or less, while a medium-size

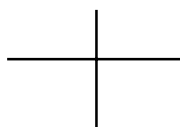
enterprise is one with net assets of US\$200,001 - US\$1.0 million. Food processing companies are generally perceived as agro-based industries which have a strong backward linkage. However this is not the case in Malaysia, where it is estimated that over 70% of the raw materials used in food processing are imported (Ministry of International Trade and Industry 1993). This is particularly true in the production of animal feed and wheat-based products.

## Profile of Small-Scale Food Processing

Small-scale food processing enterprises exhibit certain characteristics which distinguish them from their large-scale counterparts (Chee 1986).

They are usually organized as a family business, or have a single proprietor. However, as the enterprise expands, a partnership normally evolves, leading eventually to the formation of a limited company. The location of the enterprises tends to be evenly distributed. They are found in both rural and urban areas, although some have already been relocated in industrial areas.

Keywords: Small-scale food processors, resource utilization, potential products, issues and problems, relevant policies and incentives.



Many small-scale food enterprises operate under a simple organizational structure, consisting of the manager-owner assisted by a few workers.

The products are generally relatively cheap and of rather low quality. Marketing is done directly or through agents.

### **CURRENT STATUS OF FOOD RESOURCE UTILIZATION**

The utilization of food commodities such as meat, fish, vegetables, fruits and grains do not differ very much from one part of Malaysia to another. The utilization of food resources can be described under various headings.

#### **Meat Processing**

Malaysia has more than 32 companies which are involved in meat processing. The major products are sausages, canned chicken and canned pork. Cooked long-life meat dishes in pouches is processed for both domestic and export markets. In small-scale processing, meat is made into various traditional food products such as meat floss, dried curried or spiced meats, and meatballs. There are more than 50 small-scale entrepreneurs actively involved in this.

#### **Dairy Products**

The dairy product industry is largely dependent on imported dairy milk powder. At present, Malaysia's imports of dairy products show an annual growth rate of 11.5%. Milk powder is normally repacked or processed further into products such as sweetened condensed milk, ice-cream, yoghurt and flavored drinks.

Malaysia is also producing some fresh milk for local consumption. This is either sold as fresh milk or processed into 'dاده', a traditional yoghurt drink flavored with e.g. cocoa or rosewater. These activities are being carried out under the supervision of the Veterinary Service Department of Malaysia, which has processing facilities at its milk collecting centers in various parts of the country. These centers also act as marketing outlets for the fresh milk produced by small-scale dairy farmers who own a few dairy cows.

2

#### **Fish Products**

On the coast of Peninsular Malaysia, especially in the states of Kelantan, Terengganu and some parts of Pahang, fish are processed into snacks called 'keropok' (dried fish crackers). More than 100 small-scale processors are engaged in this business. The crackers are made by mixing minced fish meat with sago flour, tapioca flour, salt and monosodium glutamate. The mixture is then moulded into cylinders, steamed, cooled, sliced and sun-dried.

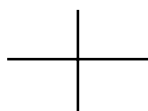
Other popular products made from fish are fishballs, salted dried fish and fermented fish. Salted fish are processed by soaking the degutted fish in a saturated brine solution overnight, before drying them in hot sun for two or three days. These activities are mostly located near fish landing sites.

Anchovies are processed by blanching them in a mild brine solution and drying them in the sun. The product is sold as dried anchovies, and there is a very good market demand for them in Malaysia. In some areas, anchovies are processed by fermenting them in a saturated solution of salt for six months. They are then boiled with tamarind, lemon juice, palm sugar, salt, permitted preservative and other ingredients to make a fish sauce. This product is sold in bottles of various sizes, usually in local markets.

#### **Vegetables**

Most vegetables are grown for fresh consumption. However there is some processing of vegetables, such as chili peppers pickled in vinegar, drinks made from ginger, and pickled amaranthus. The main problem in vegetable processing is the shortage of raw materials. Chili peppers are also being used in the preparation of various kinds of chili sauce, used for dipping snack products such as fish crackers and roasted fish or meat. They are also eaten mixed with noodles and other pasta products.

Many small-scale entrepreneurs who process chili-based products have to depend on imported dried chilis from India or China. Similarly, the tomato puree which is used in tomato sauce factories is imported from abroad. Soybeans imported from USA, China and Canada are widely used to make soy



sauce, tofu (=beancurd), and soybean milk drinks and other products. Soybean processing has become a very lucrative business. Today, total sales from the soy sauce industry alone account for more than US\$ 41 million each year, and this is increasing.

Pumpkins are grown widely after the tobacco crop in tobacco-growing areas of Kelantan. Pumpkin has become a traditional dish during certain parts of the year. It is processed by cooking it in a heavy syrup of palm sugar. Pumpkin is also widely used in the preparation of traditional cakes. It is recorded that more than 20 kinds of traditional cakes are prepared from pumpkin, but these have yet to be promoted commercially. They are normally processed by family households and sold in traditional outlets such as restaurants, office canteens, coffee stalls and market stalls.

### **Root Crops**

Two root crops which are being extensively processed into snack products are cassava and sweet potato. Sweet potato is grown in the tailings left after tin mining, while most cassava is grown in clay loamy soils.

Small-scale entrepreneurs are normally involved in the processing of snack products from cassava. Much of it is being carried out by groups of women under the Department of Agriculture, the Rubber Smallholders' Development Authority, and other government agencies which are involved in the eradication of poverty in Malaysia.

Suitable varieties of cassava are the non-bitter type. Roots are dug up 6 - 9 months after planting, and are washed, peeled, soaked in a brine solution and then cut into slices less than 1 mm thick. The slices are then deep fried, cooled and packed in bulk for further repacking.

In some places, cassava is being processed into snacks by grating it and mixing it with flour and other ingredients. The mixture is then molded into cylinders 2 - 5 cm in diameter, steamed, cooled and dried in the hot sun or mechanically dried before deep frying. This type of product is available in various flavors and colors.

Besides being processed into snacks, cassava is also used in the production of a

traditional fermented product known as 'tapai'. It is processed by cutting the cassava roots transversely into lengths of 5 - 7 cm, or into cubes 2 - 3 cm across. The pieces are then inoculated with a traditionally prepared yeast culture. MARDI has developed pure cultures of *Amylomyces* and *Saccharomyces* which are available for sale to the industry. After 3 - 4 days, the product is ready to be marketed. Again, this activity is being carried out by small-scale processors who either plant their own cassava or buy it from traditional farmers who grow cassava as part of their normal agricultural activities. Thus this product is very much localized in rural areas. Tapai is normally sold in open-air markets or in street stalls. Similarly, sweet potato is being processed into flour and snack products.

### **Fruit**

Many different kinds of fruits are grown in Malaysia, but except for pineapple they are mainly grown on a small scale. A few commercial farms have started to produce banana, guava, papaya and starfruit on a larger scale, mainly for local consumption but also for export.

Pineapple is normally processed into canned products such as pineapple cubes in syrup. Small-scale food processors mainly use pineapple for dried products, pickles, jelly, confectionery, fruit juice and cordial drinks.

Fruits such as jackfruit and guava are processed by being dried, pickled, or made into jam and fruit drinks.

Malaysia has many types of indigenous fruits, which are not being used to their full potential. They are grown sporadically on a small scale by farmers, and the fruits are seasonal in nature. Encouragement is being given to farmers or processors to pickle these fruits, since the pickles sell well in Malaysia. At present, Malaysia is still importing more than US\$ 2 - 3 million worth of pickled fruits from neighbouring countries each year. Altogether, Malaysia is importing more than US\$15 million worth of processed fruit each year.

Bananas are widely used in snack food production. Mature bananas 90 - 95 days after flower setting are the most suitable for snack products. The bananas are peeled and sliced, and the slices cooked in hot oil at

190°C. The crisp slices are then cooled and packed in plastic. Products of this nature are normally processed by women's groups, under the supervision of various government agencies involved in improving the livelihood of rural people.

This type of venture tends to expand as time passes, particularly in terms of technological improvement, product diversification and market coverage.

There are several other types of banana snacks, including banana crackers with various flavors, sugar-coated banana snacks, salted banana snacks and spicy banana snacks. These products are available in packs of various sizes, and are normally graded into various categories based on shape, size and color, in keeping with market requirements.

Durian is popularly known as the 'King of Fruits' in Malaysia. Besides being eaten fresh, it is processed into various traditional products such as durian cake (locally known as '*lempuk*'), the fermented '*tempoyak*', or *dodol* (durian cooked with glutinous rice, palm sugar and coconut milk).

Durian can also be processed into modern products such as durian powder, which in turn can be used for biscuits, cakes and ice-cream. Durian is also being used to make candy. The flesh is cooked with condensed milk and sugar until a moisture content of 10% is reached.

### **Palm Based Products**

The most widely utilized palms are coconut and sago. Other species are found sporadically, but it is not economic to process them.

#### ***Coconut***

Coconut palms are found abundantly throughout Malaysia, and are grown on plantations as well as by smallholders. Coconut meat is processed into desiccated coconut, instant milk powder, and instant coconut cream powder. These products are being manufactured on a large scale to cater for local and export markets. Products from small-scale food processors are limited to a few product lines such as coconut candy,

bottled coconut sap and palm sugar. These products are sold domestically. The scale of such processing is small, and methods of production are traditional and very laborious.

Other products from coconuts are canned green coconut milk, nata de coco\*, various hard candies, copra, vinegar and '*kerisek*', a local product made by roasting grated coconut meat and grinding it into a paste. *Kerisek* is widely used in traditional cooking.

#### ***Sago***

Sago palms are abundant in Sarawak, and are found sporadically in swampy areas in other parts of Malaysia. Sago palms in Sarawak are utilized for the production of sago pearls and starch. Sago starch is used as a stabilizer and thickener, and as a substitute for modified corn starch. Malaysia is exporting more than 25,000 mt of sago starch each year, worth more than US\$4 million, to Singapore, United Kingdom, Hong Kong and Taiwan. Many of the sago processing factories are small establishments which use traditional methods of starch extraction. Efforts are being made to modernize their production. Another popular product made from sago is *tabaloi*, a snack food which has been modernized in its production.

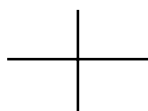
#### **Coffee**

Coffee is grown under coconut palms in Malaysia, either in plantations or on smallholder farms. Dried coffee beans are used for the production of various types of coffee powder and coffee powder mixtures. There are more than 20 small-scale processors of coffee powder in Malaysia. About 45% of the beans they use are produced locally, the remainder are imported. Coffee powder mixtures are produced by roasting the beans mixed with granulated sugar, margarine and other permitted fillers, and grinding the result into a coarse or fine powder.

#### **Cocoa**

Malaysia is the world's fifth largest producer of cocoa beans. The beans are sold

\* Nata de coco: Green coconut milk mixed with sugar and fermented in an acidic medium to form a firm, clear jelly. (Ed.)



dried as a primary product to the processors, who in turn process the beans into cocoa butter, cocoa powder and chocolate. Cocoa liquor and cocoa are also produced in small quantities. Cocoa butter is processed for export, while cocoa powder and chocolate are sold on the domestic market.

### **Spices**

At present there are more than 150 small-scale processors of spices, most of whom produce around 100 - 200 kg of finished product per day. Ground pepper and curry powder are common spices, but each processor produces more than one product line. Marketing is normally confined to the local community. Malaysia's spice industry is worth more than US\$12 million per year, and is continuing to expand.

The technology for producing spice powders is very simple. Coarse grinding is followed by fine grinding. The machinery used is normally a hammer mill with various sieve sizes for coarse grinding, and a series of two to three disc grinders for fine grinding. In some factories a more advanced grinding machine is used.

The preparation of mixed spices has undergone some changes quite recently. In place of the traditional dry powders, many consumers prefer various forms of paste. These are relatively new products, and are more convenient to use.

The spice industry in Malaysia is heavily dependent on imported raw materials such as dried chili peppers from China and India, and cloves from Indonesia. Tumeric, coriander seed, cumin seed, cinnamon and other spices are also imported.

### **Cereal Products**

Wheat is the major grain used in the manufacturing of biscuits, bakery products, noodles, cookies and snack products.

Malaysia is a importer of wheat grain. This is milled into wheat flour and processed in various ways. Bread is widely consumed in Malaysia, and is produced by more than 1000 bakeries throughout the country. Most of these are small, and make cakes and pastries as well as bread. The machinery used normally includes standard items such as

a dough mixer, a roller, a moulder, an oven and a bread slicer. The capital cost for setting up a bread factory is around US\$70,000 - 80,000.00.

Supermarkets, minimarkets and retail shops are the usual market outlets for this type of product.

Rice is used in the manufacture of vermicelli, pastries and various snacks. These products are made by small processors in both urban and rural areas. Wet products made from rice are numerous. These include traditional cakes and buns made in the early morning and sold by evening the same day. These products are sold on food stalls, and in school canteens, restaurants and markets, and many Malaysians have the habit of eating them for breakfast. These products have the potential for further development, but need improvement in terms of preparation, packaging and machinery usage. Glutinous rice is used in the manufacture of a puffed snack product called '*bepang*', by mixing it with palm sugar and glucose syrup as a binder. This snack product is popular throughout Malaysia, and is available in many forms and flavors. A number of other traditional products are made from rice.

### **POTENTIAL PRODUCTS TO BE PROMOTED**

Many food products which are being processed by small-scale entrepreneurs are highly acceptable to consumers. These products have the potential to expand their market size, especially if there are improvements in product quality, and attractive packaging. More aggressive market strategies and promotion are also needed. The availability of good quality raw materials, and whether it is cheaper to produce these locally or import them, are also very important factors to be considered. Some of the potential products are as follows:

#### **Snacks**

Fish crackers, a local snack made from fish, are popular among Malaysian people. They are available either as a ready-to-eat product, or as an uncooked dried product with a moisture content of 5 - 7%, which still has to be fried.

Nutritionally, fish crackers are rich in

protein (15% minimum), Ca and P. They are made in a variety of shapes, sizes and flavors. This product has export potential.

There are also some traditional snack products based on wheat flour, which are known by their local names (e.g. *gegetas*, *lidah buaya* etc.). These products are prepared by deep frying and are packed in plastic. They have a protein content of 6 - 8%, with 80 - 90% carbohydrate. The potential of these products is very high, if they are packaged in an attractive way, and if a range of products are sold in a single package as gifts.

### **Frozen Foods**

Frozen ready-to-eat foods are becoming more popular as housewives and office workers become busier. Frozen foods made from chicken, such as small goods and speciality products, should be promoted among small-scale enterprises. Frozen snacks and cookies made from wheat, such as curry puffs and doughnuts, are now being sold by supermarkets, and are well received by consumers. Frozen products processed by rheon machines are also beginning to make their way into supermarkets.

Thus prepared ready-to-eat food in frozen form is another area worthy of promotion.

### **Cocoa Products**

The manufacture of cocoa products such as chocolate drinks and chocolate products is being encouraged by the Cocoa Board of Malaysia. Such products are well supported by a constant supply of locally grown cocoa beans.

### **Tropical Fruit Products**

There are ample opportunities for tropical fruit products to enter the world market. Such products include fruit concentrate and pulp, fruit juices and also dehydrated fruit, confectionery jelly, fruit nectar, pickled fruit and many others. At present, local demand for some of these products is met by imports, such as mango juice from India.

### **Meat, Fish and Chicken Floss**

Floss made from meat, fish or chicken floss is another product which has potential for export. However, this product needs improvement in terms of quality, packaging and labeling.

## **PROBLEMS OF SMALL-SCALE FOOD ENTERPRISES**

### **Major Constraints in Food Processing**

The establishment and successful operation of small-scale food processing enterprises face several constraints.

#### ***Insufficient Supply of Good-quality Raw Materials***

Vegetable production in Malaysia is mainly on a small scale. Mixed cropping is practiced, and farmers grow crops mainly for fresh consumption. There are usually insufficient vegetables for processing.

Fruits are normally seasonal and perishable. Malaysia lacks a proper postharvest handling system for fruit except on commercial farms. Since fruit is being grown on many small, scattered farms, collection is inefficient and quality is inconsistent.

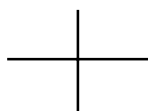
Some raw materials such as soybean and dried chili peppers are imported, since it is cheaper to import them than produce them locally.

#### ***Low Level of Technology***

Small-scale food processing enterprises generally use traditional methods of processing such as pickling and snack food production. This is because of financial constraints, which means that they cannot afford sophisticated machinery, and a lack of technical information.

#### ***Research and Development (R&D)***

No research activity is undertaken at a factory level. Most of the research and development on food processing technology is



undertaken by research institutions such as the Food Technology Research Centre, MARDI and some universities.

### ***Competitive Market***

Many small-scale food enterprises are all processing much the same type of products, such as sauces, snacks, beverages and bakery products. These are all items which require a low initial capital investment and a low level of technology. Because of the number of firms involved, they face stiff competition in terms of their market share.

However, some enterprises are able to expand their enterprises, because they are innovative and have an aggressive market strategy.

### ***Quality Problems***

The product quality of small-scale food enterprises is inconsistent, due to a lack of facilities for quality control or awareness of the need for these, and due to poor manufacturing practices.

### ***Lack of Small-Scale Food Processors' Associations***

There is no association of small-scale food processors, or if such an association exists it is inactive. The lack of any organization to safeguard the interests of its members has led enterprises to compete among themselves for the same market share by lowering their selling prices.

### ***Food Regulations***

Some products such as chili sauce, tomato sauce and soy sauce often have a high level of preservative added, which is against food regulations.

### ***Food Packaging***

Some entrepreneurs still produce goods packed in low-quality packaging material with a rather unattractive packaging design.

### ***Level of Educational Background***

Entrepreneurs with an elementary school

education tend to be less receptive to new technologies compared to their counterparts who have a college education. This has made it difficult to transfer new technology and improve productivity.

### ***Lack of Industrial Sites***

Many small-scale food enterprises operate as backyard industries located near the owner's house. They need better premises with a proper drainage and sewage system. The industrial sites offered are too expensive for them to afford.

### ***Lack of Finance***

This is a common problem facing small-scale food entrepreneurs. Financial institutions have more confidence in big industries, while small-scale industries have little collateral. They also have problems in preparing a project paper to show the viability of their business and its future plans.

### ***Management***

Most small-scale food enterprises are managed by the owners, who do not know modern techniques of management, including book-keeping and maintaining proper records. They are not innovative and motivated. They tend to be satisfied with what they have achieved.

## **POLICIES AND INCENTIVES FOR THE DEVELOPMENT OF FOOD PROCESSING**

To support the growth of food processing enterprises, an Industrial Master Plan was introduced in the 1980s.

### **Industrial Master Plan (IMP)**

Malaysia's National Agricultural Policy aims at achieving a balanced development of agriculture and industry, with improved integration of the two. Government incentives to develop agriculture will lead to increased efficiency in the food processing industry. The Government's commitment to assist in the healthy growth of the private sector is seen in its implementation of the Industrial Master Plan (IMP), which sets the framework and



guidelines for the establishment of new industries up to 1995. This represents an important measure taken by the Government to attract private investment to areas offering greater comparative advantage. The priority products identified for active development under the IMP can be classified into resource-based sectors and others. The resource-based sectors cover rubber products, palm oil and wood products, and also include food processing.

For food processing, the specific development objectives of the IMP are as follows:

- To develop a modern food processing industry, meeting Malaysia's food needs in conformity with modern hygienic standards;
- To establish export oriented as well as import substituting products; *and*
- To develop industries which utilize more local raw materials and substitute for imported raw materials.

In order to attain these objectives, the IMP recommended the designation of all products made from cocoa fruit and vegetables as priority products for export. Animal feed has been identified as a priority product for the substitution of local raw materials for imported ones.

As guidelines for the future development of these subsectors, each was provided with a quantitative target with respect to growth rates in output, exports and imports.

### **Incentive Schemes**

In general, there are no special incentive schemes for the food processing sector. The incentive schemes available are equally applicable to all manufacturing industries.

There are four main types of incentives, namely; general incentives, export incentives, incentives for research and development, and incentives for training. Each of these is briefly described below:

#### ***General Incentives***

General incentives which are relevant to manufacturing establishments in Malaysia are:

- Pioneer status, in which companies are tax free for up to 10 years (subject to certain qualifications);

- Investment tax allowance (ITA), by which companies can be given an allowance of up to 100% with respect to quality capital expenditures incurred within five years;
- An abatement of adjusted income; and a
- Reinvestment allowance

#### ***Incentives for Exports***

In addition to the general incentives, manufacturers producing for export markets are entitled to:

- Export credit financing;
- An abatement of adjusted income for export;
- An export allowance;
- A double deduction of export credit insurance premium;
- A double deduction for promotion of exports; and an
- Industrial building allowance

#### ***Incentives for Research and Development (R&D)***

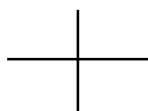
Incentives for R&D take the form of allowable deductions for certain types of expenditures related to R&D activities, a double deduction for contributions to R&D, and tax exemptions for new firms using newly developed technology.

#### ***Incentives for Training***

Various tax deductions are given for expenditure related to the upgrading of skills, such as the building of training centers and approved training expenses.

### **CONCLUSION**

It is envisaged that small-scale food processing will continue to play a very important role in the Malaysian economy. To maintain industrial growth, the Malaysian government has various policies and incentives, applicable not only to food processing but to other industries as well. Many government agencies are also involved in supporting the development of small-scale food processing enterprises by providing technical expertise, and financial and marketing assistance.



## REFERENCES

- Chee, P.L. 1986. *Small Industry in Malaysia*. Kuala Lumpur Berita Publishing Sendirian Berhad.
- Food Technology Research Centre, MARDI. 1992. *Situation and Outlook of the Malaysian Food Processing Sector. Vol. 1. Technical Review of MARDI Food Technology Research Plan*. MARDI, Serdang, Selangor.
- Malaysian Industrial Development Authority (MIDA) and United Nations Industrial Development Organization (UNIDO). 1985. *Food Processing Industry, Vol. 11. Part 3. A report on the Medium- and Long-term Industrial Master Plan of Malaysia (1986-1995)*. Kuala Lumpur.
- Ministry of International Trade and Industry. 1993. *Policy and Status of SMIs in Malaysia*. Small and Medium Scale Industries Division, Ministry of International Trade and Industry (MITI), Malaysia.

