

BUSINESS SET-UP GUIDE

Production of Banana Chips

Business Profile Summary

You will need a market that can support sales of at least K73 per day.

You will need around K3,000 to start the business.

Profit potential for this business is around K3,000 per year.

Sales

You will need a market that can support the sale of K400 - K600 per week. This guide is focussed on starting a small scale banana chip making business, selling the product in trade stores, supermarkets, clubs, hotels or markets.

There exists a strong demand for banana chips as most people enjoy eating snacks.

While fresh cooking bananas are widely available, banana chips are not easily available in many parts of the country. Making chips increases the shelf life of the product in times of abundant harvest.

Location

The owner has several options for selling the product as follows:

1. at the local market;
2. through shops; and
3. through hotels & clubs.

If the owner wishes to sell direct to the end customer, then the location with the highest traffic should be chosen. This will generally mean higher expenses in the form of rent.

If the owner wishes to sell through shops, hotels or clubs, then the business can be started from your house. However, the owner will have to accept a lower mark-up to allow for a margin to be made for the shop owner.

Food Preparation Area

The Food Preparation area must be clean and hygienic. It should be large enough to carry out the various stages of banana chip making & packing to include.:

1. storing the cooking bananas;
2. peeling and slicing;
3. soaking in salt water;
4. frying;
5. draining of oil;

6. packing and sealing; and
7. storing the finished product.

Costing the Business

Equipment Cost

The following list represents a range of possible equipment needed for establishing a small scale banana chip producing business:

Item	Estimated cost - kina	Purpose	Update cost
Equipment			
Wok or frying pan	100	fry chips	
Gas burners (2)	150	stove top cooking	
Pots with lids 5-6 ¹	200	storage	
Knives	50	cutting food	
Spoons, wooden ladles	60	stirring for uniform frying	
Cooling trays (2)	120	cooling hot fried chips prior to packing	
Bag sealer	320	packing fried chips	
Total Equipment	1000		

The prices used are estimated average cost based on Port Moresby prices at the time this guide was prepared. A column has been provided for the user to update these costs.

The above capital requirements are based on the principle of starting a small scale banana chip producing operation with minimum outlay of capital. This business can be of larger scale through the introduction of a deep fryer, and slicing machine.

Staff

A basic banana chip operation could be started by an owner helped by a family member.

Position	Main Responsibility	Monthly Salary
Owner	Manage business- decide prices, prepare chips, procure supplies, supervise all staff	K450
Helper (1)	Assist in all areas	K150
Total		K600

Raw Materials

Product costing is detailed in Annex I.

Your major raw material is cooking bananas. Availability and price you pay for bananas will be determined to some extent by the weather conditions. In times of drought, availability will be less and price will be high. Try and buy regularly from a few farmers. Once your suppliers know that you will be buying regularly, they will adjust their production to meet your demand and they should be willing to offer you a special price.

¹ The pots can be substituted with plastic buckets with lids at a much lower cost.

Based on the costing in Annex I, your raw material cost will be .75 toea per 100 gram package. Raw materials include the raw banana, oil, salt, packaging and label.

Licences/Registration

The size and nature of this business does not require company registration and should be set-up as a sole proprietor or partnership.

Please contact the nearest provincial authorities or NCDC to obtain details of licences required. For the purpose of this guide, the annual licence fee is estimated at K150.00.

Operating Cost

A banana chip producing business has certain operational costs. Some of these costs are:

- paid once when you establish services such as water, electricity ;
- some are paid on a monthly basis.

When you start your business you will usually need some working capital (money) to establish services, pay certain yearly expenses and to meet some of your monthly operational costs until the business can generate enough income to meet these costs. In the case of a banana chip producing business this should only be for the first month.

The size and nature of this business probably will not warrant renting a new place. Electricity is not needed, but water is essential to the operation. Hence the operating costs listed below are on the basis of incremental costs incurred to run the business. For the purposes of this guide, it has been assumed that the product will be sold through a market stall.

Below is a table showing the start-up and monthly operating cost associated with a banana chip producing business.

Operational cost	Initial working capital	Monthly
Water charges	10	10
Cleaning supplies	50	25
Miscellaneous	55	25
Total operating cost	115	60

Start-up costs

Besides the equipment cost you will need money to meet a number of other cost in order to start your business as shown in the following table:

Item	Total	Update
Equipment	1000	
Staff	600	
Licence and Registration	150	
Raw materials (first month)	912	
Operating expenses	115	
Total start-up cost	2777	

The cost to start a banana chip producing business is around K3,000.

Profitability

Monthly Profit and Loss

	Break even sales			
	73	80	90	100
Sale per day	73	80	90	100
Sales per month (25 days)	1824	2000	2250	2500
Cost of raw materials	912	1000	1125	1250
Gross profit	912	1000	1125	1250
Operational expenses				
Rent (market stall)	220	220	220	220
Wages	600	600	600	600
Electricity	10	10	10	10
Water	10	10	10	10
Office supplies	15	15	15	15
Cleaning supplies	25	25	25	25
Miscellaneous	25	25	25	25
Total	912	912	912	912
Operating profit per month before tax	0	88	213	338

Break even sales

If we assume a mark-up of 100 % on all products then the break even sales for this business is K73 per day. This means that if you sell less than K73 per day, you will make a loss. If you sell more than K73 per day, you will make a profit.

Financing the Business

The size and nature of this business is such that savings must necessarily be used for financing the business.

Business Planning

Before turning your idea into an operating business, collect information and make plans to see if your business will be successful. Just like an engineer who prepares a plan before building a bridge, a business owner needs to prepare a business plan.

A business plan is a written document that describes in detail all aspects of your business. Preparing a business plan will help you to think carefully and find out if there are any weaknesses in your business idea.

Most importantly, a business plan gives an opportunity to try out your business idea on paper rather than in reality. It is much better to do a business plan and find out that the idea is not good than to start a business that will fail.

Where can you get help?

There are a number of organisations that can help you establish this business to include:

Name of Organisation	Address	Phone/Fax	Assistance
Small Business Development Corporation	P O Box 286 Waigani P.O. Box 1106 Kokopo P.O. Box 1613 Mt. Hagen P.O. Box 1092 Wewak	Ph 3250100 Fx 325-0801 Ph 982 8201 Fx 982 8664 Ph 542 1067 Fx 542 1275 Ph 856 3201 Fx 856 3204	Start Your Business training and business advise and assistance.
Small Business Development Corporation	P.O. Box 103, Lae	Ph 472 1677 Fx 472 3876	Technical training in food processing. Advice and assistance. Sourcing of equipment
Appropriate Technology & Community Development Institute	Private Mail Bag Lae, Morobe	473-4781 473-4303	Technical information and books Skills training. Technical advice.
Food Technology Section of the Department of Applied Science	Private Mail Bag Lae Morobe Prov.	Ph 473-4555 Fx 472-4067	Training and on-the-job experience
Appropriate Technology Development Institute	UniTech, Lae, Private Mail Bag, Lae, Morobe Province	473-4776	Technical Information Skills Training Consulting Services Technical Advice Business Training
Food Processing & Preservation Unit (FPPU)	P.O. Box 19 UniTech Lae	473-4562 475-7868	Technical training in food processing & preservation quality control & hygiene. Sourcing of equipment

Suppliers

Contact Addresses/Numbers

Name of Supplier	Location	Mailing Address	Phone	Fax
Cooking Equipment, Utensils etc.				
Brian Bell & Company Pty Ltd	Port Moresby	P O Box 1228, Boroko	3255411	3250167
	Goroka	P O Box 336, Goroka	7321622	7322048
	Mount Hagen	P O Box 88, Mt Hagen	5421999	5423279
	Eriku, Lae		4721433	4721548
	Malekula Street, Lae		4723377	4723368
	Lae	P O Box 255, Lae		
	Kokopo/ Rabaul	P O Box 1338, Rabaul	9829027	9829141
T.E. (PNG) Pty Ltd	Waigani	P O Box 1388, Boroko	3256322	3250350
	Port Moresby			
	Voco Point	P O Box 669, Lae	4726262	4721323
	Lae		4726246	
Kai Kai Cookware	Taraka, Lae	P O Box 565, Lae	4720511	4757299
Bag Sealer				
Rutec by Variform (PNG) Pty Ltd	Port Moresby	P O Box 304, Waigani	3211592	3217301
Packaging Materials				
Lam's Trading Pty Ltd	Waigani, Port Moresby	P O Box 88, Boroko	3253321 3232382	3232802
W H Industries Pty Ltd	Port Moresby	P O Box 5020, Boroko	3251155	3251308
Colorpak Pty Ltd	Lae	P O Box 58, Lae	4757077	4757493
	Port Moresby	P O Box 126, Jacksons	3233644	
NPC & Austraphane Marketing	Port Moresby	P O Box 1175, Boroko	3253211 3253182	3255618
Raw Material Suppliers				
Patrick Transport	Gabutu, Port Moresby	P O Box 1758, Boroko	3217490 3217300	3217228
Alotau Enterprises	Alotau	P O Box 27, Alotau	6411246 6411366	6411270
Garamut Enterprises Pty Ltd	Wewak	P O Box 96, Wewak	8562106 8562356	8562324
	Maprik	P O Box 166, Vanimo	8581219	
George Seto & Co Pty Ltd	Wewak	P O Box 69, Wewak	8562822	8562439
Madang Wholesale Pty Ltd	North Coast Road, Madang	NIL	8523611	
Voco Point Trading Pty Ltd	Voco Point, Lae	P O Box 4121, Lae	4724300 4724864	4723042
N Poya (Group) Pty Ltd	Banz Minj	P O Box 57, Banz	5462273 5465521	5462325 5462325
Seeto Kui	Lae	P O Box 456, Lae	4721111 4720906	4721335 4720890
	Gordons, Port Moresby	P O Box 1405, Boroko	3254700	3257208
			3254215 3254761	
Super Value Store Pty Ltd	Lae Mt Hagen	P O Box 1988, Lae P O Box 165, Mt Hagen	4721688 5422764	4726103 5422763

Name of Supplier	Location	Mailing Address	Phone	Fax
	Port Moresby	P O Box 1180, Port Moresby	3252965	3230820
M & S Tsang Pty Ltd	Madang	P O Box 19, Madang	8522428	8523016
Kabuka Trading Pty Ltd	Dobel, Mt Hagen	P O Box 264, Mt Hagen	5451355	
Associated Distributors Niugini	Lae	P O Box 4019, Lae	4724666	4720085 4723198

Appendix I

Costing and pricing - Fried Banana Chips (100 gms)

Ingredients:

Bunch of cooking bananas

Water

Salt, cooking oil

Plastic bag

Label

Costing:

Ingredients	Qty	Cost kina	Update
Cooking bananas	100gms	0.60	
Salt, cooking oil	To taste	0.05	
Plastic bag		0.05	
Label		0.05	
Total raw material cost		0.75	
Cost per 100 gms bag		.75	

Selling price:

Obviously your selling price cannot be below kina 0.73

To determine your selling price try and investigate prices for similar items available. If there is a similar item, then your price will be close to that price.

As you will be selling your product through shops, hotels or clubs, so you would have to allow a reasonable margin for the reseller.

Probably a reasonable price for the above product will be K1.50.

Be prepared to review prices if your product is not selling.

Appendix II

How to produce banana chips

Banana Chips or Crisps are deep fried snack - a small or casual meal. Cooking type bananas produce good Chips/Crisps. It is easy to make and the product is very tasty.

The small-scale production requires but a few equipment, viz.: A stove (Gas, Diesel fired or even a Firewood Stove), Kitchen knives, Peelers, Cutting boards, Plastic buckets, Cooking pots, Containers, Frying pan or Wok, Long Spoons or ladles, Cheese cloth, Colander, Trays and Baskets, Plastic Pouches, Candles & old Hacksaw blade or a small Electric Impulse Heat Sealer and Weighing scale.

Production of Banana Chips

Good large size green cooking bananas slices are cut cross wise to give circular shape. Bigger size fruits are preferred to produce large size slices and an attractive product. Different varieties give products of different colour, flavour and taste. Crosswise slicing gives uniform, circular, attractive, product and is universally adopted for commercial production. This way as the slicing is faster the production 'increases.

The steps involved in Banana Chips processing are:

1. **Selection:** Good quality, green cooking bananas is preferred. Kiau-Kiau - variety is considered suitable for making chips.
2. **Cutting and Peeling:** Using a knife, banana bunches are separated from the main stem and individual bananas hands are separated from the bunches. Using a hand peeler, bananas are peeled and immediately sliced cross wise into thin, round slices. As some varieties with latex cause itching or irritation while handling, it is better to rub the hands with salt before peeling and slicing.
3. **Immersion in salt water:** Immediately after slicing the slices are placed in salt water @ 3 to 5% of salt to the water. Added salt gets in to the slices and improves taste and acceptability of the product. If slices are not placed in water, they turn Brown and later give an unacceptable dark product.
4. **Frying:** Keep a large shallow Frying Pan or wok over a suitable stove (with adjustments for flame/heat control). The frying pan should be thick bottomed and with side rings for easy handling. A good edible vegetable cooking oil is used for frying. Bring the oil to fuming hot temperature. The long spoon or ladle used for taking out the fried chips from the wok can be either a big perforated one, of 8 to 12 inches in diameter and with long handle or of a large diameter wire mesh spoon with bamboo handle. The salt soaked slices are then dropped one by one manually into the hot oil in the frying pan. Never put the slices together in clusters into the oil as the slices being starchy stick to each other and are difficult to separate later. The normal practice followed is:

- Holding slices in left hand and dropping in rapid succession the separated slices one by one into the hot oil, or
- Slices taken out from the salt solution, separated and arranged either on a cheese cloth or on the dry big spoon itself and then carefully dropped into the hot oil.

The frying temperature is maintained around 150 to 160°C (just fuming) and frying time around 3 - 5 minutes depending on the slice thickness. Slices are deep-fried to golden yellow colour (till the bubbles seize) and taken out immediately using big perforated spoon. Over frying turns the chips dark and this will be considered an unattractive product.

5. **Draining of oil:** Deep fried chips are put into perforated Colander for the excess oil to drain out and later transferred to a wide plastic or aluminium tray lined with craft paper or kitchen towel which absorbs/removes excess oil in chips and product is allowed to cool.
6. **Packing:** Chips should never be packed while hot since hot air inside the pack condenses into water, which moistens the crisps resulting in soft, soggy chips. After cooling, chips are packed manually in plastic pouches and sealed airtight using either Hacksaw blade over candle flame or an electric impulse plastic sealer.

NOTE: Taro, Sweet Potato, Potato and Cassava chips can be made in the same way except that their pre-frying preparation will differ.