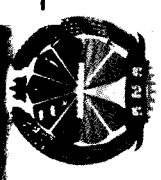


AB 10



OUTLINES OF SMALL SCALE FOOD PROCESSING For AGRO-BASED FOOD PRODUCTS



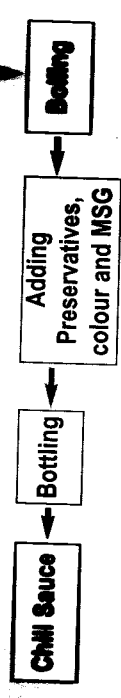
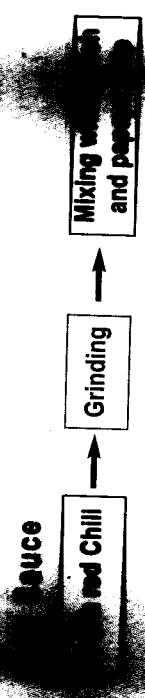
DEHYDRATED FRUITS

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MINISTRY OF AGRICULTURE, FORESTRY AND FISHERIES
IN COLLABORATION WITH THE FOOD AND AGRICULTURE
ORGANIZATION OF THE UNITED NATIONS

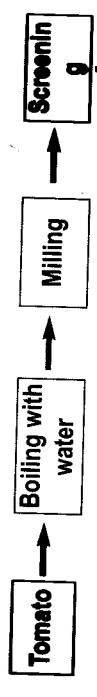
TCP/CMB/2901
May 2004

Vegetable Products

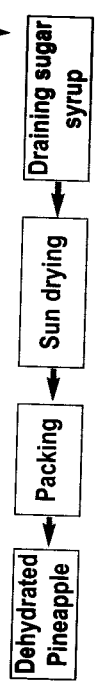
Process Flow



Tomato Sauce / Ketchup



Dehydrated Fruits (Pineapple)



Papaya pulp is added some times to chilli sauce to give body, colour and sweeter taste instead of sugar and starch. Some processors add MSG to enhance the flavour and taste. Spices and salt are added according to taste. Fruit pulp is mixed with starch and sundried in layers. Dried pulp is cut in to pieces and packed. The product is similar to a fruit bar and has a consistency like toffee.

Fruit processing is ideally suited to areas where agro-ecological conditions are favourable for growing a variety of fruits spread over both the summer and winter cropping seasons ensuring raw material flow for higher capacity utilization without having to resort to cold storage. Tomatoes, for example, could be processed into various edible forms thereby minimizing the unsettling effects of distress prices at harvest.

Processed forms of fruits, distinct from preserved forms are considered as convenience foods for which demand tends to rise with increasing population and higher average incomes.

Small scale producers could price their products competitively at a lower level than that of branded products and still make a satisfactory profit. The strategy is to aim at the

price-sensitive segment of the market which is distinctly different from that of known brands.



**Activity: Manufacture of Dehydrated Pineapple(Others fruits)
Capacity: 140 Kg/day**

Equipment			
	Quantity	Rate Riel	Cost Riel
1	Stainless steel knives	3000	9000
2	Pine apple slicer	40000	40000
3	Doe-solar tent dryer	35000	140000
3	Balance (50kg)	60000	60000
4	Aluminum Tray	16000	80000
5	Plastic vessel (50 L)	8000	40000
6	Bamboo basket	4000	20000
7	Cheese cloth, m2	2500	12500
Total			401500

Raw materials			
Ingredient	Quantity /day(Kg)	Rate Riel	Cost Riel
1	Peeled pineapple	1300	529100
2	Sugar	1400	18480
3	Antioxidant	2500	1250
4	Citric acid	3700	4070
Total			552900

Packaging			
Description	Unit	Quantity/day	Rate Riel
1	Plastic bag	kg	5000
Total			10000

Utilities			
Description	Unit	Quantity /day	Rate Riel
1	Water	m ³	1
Total			

1 Unskilled and 1 semiskilled worker needed

Recommend refractometer for sugar measuring (0-32 % Brix) - price 696000 Riel.

Profitability Estimate

Requirements		Unit
Equipment - see list	402	000 Riel
Unskilled workers	1	No
Semi-skilled workers	1	No

Production Capacity		
Per day	140	kg
Per year of 250 days	35000	kg
% utilisation assumed	67	% /yr

Costs per year		
Rent	1080	000 Riel
Semiskilled	1712	000 Riel
Unskilled workers	978	000 Riel
Electricity	0	000 Riel
Other utilities	0	000 Riel
Transport	0	000 Riel
Repair and maintenance	27	000 Riel
Others	0	000 Riel
Distribution	24546	000 Riel
TOTAL A	28343	000 Riel

Raw materials - see list		
Packing	92611	000 Riel
TOTAL B	1675	000 Riel
	94286	000 Riel

Revenue and Profit		
Market Unit Price Riels	7000	Riel/unit
Revenue	164150	000 Riels
Cash Profit per year -		
Revenue minus A and B	41522	000 Riels
Cash Profit per month	3460	000 Riels

Basic Hygiene - Precautions for Food Processing

- The presence of rodents, insects, and other animals in the facility should not be allowed because they are sources for the contamination of food with foreign material, filth, bacteria, etc.
- The facility and grounds should be free of uncut weeds, brush or tall grass.
- Improper storage of unused equipment or materials, presence of litter, waste refuse and stagnant water should be avoided.
- Unhygienic conditions in and around the shop floor can allow contamination to enter the food processing plant air borne, adherence to personnel clothing and other means
- All persons, in food preparation and handling should wear clean outer garments, and conform to hygienic practices
- Persons affected by disease in a communicable form, or while affected with boils, sores, infected wounds, or other sources of microbiological contamination, should not work in the food factory.

Process water must be of high quality as it becomes a part of or affects the quality of the product

NOTE

1. The estimates are based on standardized values for several cost items such as wages, rental for space, utilities, input-output ratios, sale price etc. and as such may not be accurate with reference to a given production circumstance and location
2. The outlines are meant to give an idea of available avenues of profitable investment and the likely profitability. Those interested in pursuing any selected activity are advised to make accurate estimates of cost and revenue with reference to their local circumstances, using this guide if necessary, to assess likely returns before embarking on investment.
3. Those interested in starting any activity could approach DAI at the following address for assistance.



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E-mail: dai-maff@camnet.com.kh
Phone/Fax: (855) 23 213 145