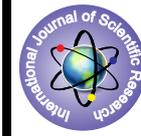


Raw Material Supply Analysis Small Group of Industries Food Processing in the District Malang Cassava



Management

KEYWORDS: Inventories of raw materials, small industry, food processing.

Subakir	Management Science Department, Faculty of Economics, PGRI Adi Buana University, Surabaya, East Java of Indonesia.
Priyono	Management Science Department, Faculty of Economics, PGRI Adi Buana University, Surabaya, East Java of Indonesia
Rahayu Puji Suci	Management Science Department, Faculty of Economics Widya Gama University, Malang, East Java of Indonesia

ABSTRACT

This study aims to analyze the growth of production and consumption, materials and forms of processed food products, the system guarantees the availability of food staple (cassava) for the needs of small industry, supply and demand processing technology, the synthesis of the opportunities, constraints, and policy development in the agro-industry based rural cassava. Used is descriptive analysis by observing the strengths, weaknesses, opportunities and threats as a SWOT analysis (Strength, Weakness, Opportunity, Threat). Based on the diagram of the analysis indicated that the position of entrepreneurs in the development of cassava agroindustry are in quadrant III region. This position is a situation that is not so bad, because there are opportunities for development although there are internal weaknesses. The strategy should the government do in this position is an opportunity to market the widest and suppress imports and exports provide access to the perpetrators of agro business loans. So agro-based raw materials of local food available in sufficient quantities in each research area, although there are fluctuations in supply between seasons every year

INTRODUCTION

Nationally the growth of demand for food processing products during the period 1998 to 1999 reached 207% ± (Department of Industry, 2004) (1). Therefore, it needs to be developed both in the aspect of process technology, equipment and managerial aspects. Field observations indicate that the majority of small industries in the procurement of raw materials rely on intuition combined with the usual product marketing. Such an approach is often constrained by the rate of production and sales due to not be able to walk normally, so it opens the opportunity for the introduction and implementation of an inventory system in accordance with the behavior of the marketing environment. Government food policy is biased to commodities resulting pattern of staple food rice society, the former variety (rice, cassava, corn, sago, bananas, etc..) In accordance with the potential and the local culture, are now experiencing changes that tend toward a single staple food pattern (rice). The results of the analysis based on data from the National Socioeconomic Survey (SUSENAS) showed that the decline in local food consumption (level of participation and the level of consumption) continues. The participation rate of rice consumption reached nearly 100 percent, while the level of participation of local food such as cassava consumption only amounted to 36.7 percent, the higher income groups, the participation rate is smaller food (Anonymous, 2003) (2).

One very important factor in the success of food diversity programs and systems guarantee the availability of food raw materials is carrying out product development which has properties very practical, available in any size, if it is used there is no rest and easy to obtain. Forms of food prepared and ready to eat though are the best choices (Baharsyah, 1994) (3). Cassava has a good potential to be developed into food staples other than rice (Suprapti, 2005) (4), cassava commonly consumed in the form of sweet potato, tiwul (cassava) as well as a mixture of rice (in the form of oyek). The use of cassava as a mixture of rice (oyek) found in most of Java, Sumatra and Kalimantan. According Suryana et al. (1990) (5), for the direct consumption of cassava has become a commodity inferior. Cassava used for the substitution of rice among the poor, especially in the dry season where rice prices are relatively high.

Safety, quality, and diversity is a condition that must be met in meeting the food needs of the population adequately, equitable and affordable (Yusdja, Y and M. Iqbal. 2002) (6). In 2002, total food industry in Indonesia was 843,334 pieces. Of this amount, the majority of domestic industry (93.6%), followed by small-scale industries (5.9%) and large-scale industries / enterprises

(GAPMMI, 2004). So far the attention of potential employers of traditional food is still lacking (Nainggolan, 2004) (7). More specifically, a strategic food security policy is essentially directed to solving problems and achieving food security development (Nainggolan, 2006; Apriyantono, 2006) (8).

Porter (1985) (9). argues that in starting operations to consider some key elements-called value chain (value chain) of a business. The value chain of business activities is as described in Figure 1

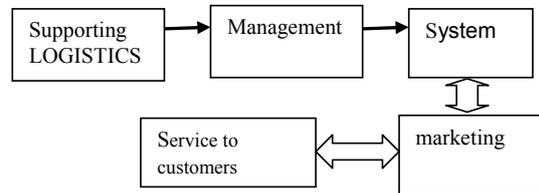


Figure 1. Value Chain Operations

Logistic support (supplier) is the main supporting element in business activities which are mainly engaged in the production of goods. The success of a business that produces goods is determined by the management of the production system and its relationship with suppliers of raw materials or logistics.

METHODS RESEARCH

This research was conducted in the district Malang and focus on agro-industry (small industries) food processing raw material commodity with cassava. Respondents include small industrial entrepreneurs locally-based food and household distinguish between households who consume local foods that consume cassava and rice. In addition, the data collection was also conducted interviews with cassava farmers, officials from the relevant Department of Agriculture, Department of Trade and Industry, Local Government and Regional Food Security Agency Guidance.

Fluctuations cassava analyzed using the coefficient of variation of prices in series than the coefficient of variation in rice prices. Furthermore, to illustrate the cost of production and cost analysis of cassava farm income coefficient of variation of prices commodity estimates as follows (Singarimbun and Effendi, 1995:5) (10):

$$\frac{\left\{ \sum (x_T - \bar{x}_T)^2 \right\} / (n-1)}{\bar{x}_T}$$

CV = x 100%

where: CV = Coefficient of Variation
 = Commodity prices in the year t T
 = Average price of commodities per month in T
 n = number of months per year (n = 12)
 Farm income is calculated as follows:

p = TP - TB
 where: p = farm business profit
 TP = total farm income
 TB = total cost of farming

In addition, agro-industries (small scale industries based on raw cassava) were analyzed descriptively by observing the strengths, weaknesses, opportunities and threats as a SWOT analysis (Strength, Weakness, Opportunity, Threat). The focus of the analysis is not only the performance but also the performance of the industry as a whole. With SWOT analysis is expected to help address the weaknesses and threats, and maximize strengths. Power that will be able to take advantage of market opportunities.

RESULTS

hilly areas and watersheds, one of the districts affected by landslides caused by heavy rains are Tirtoyudo District. Flood prone areas spread over several districts namely Singosari (flood / mud), District Dau, District Bantur (5 years), District Tirtoyudo (flash floods due to deforestation Pujiharjo village, Purwodadi), Kasembon (Village Bayem), District Sumberpucung (Village Trenyang), District Bantur (Village Sumberbening), District Donomulyo (Village Banjarejo), District Sumbermanjing Wetan (Village Kedungbanteng), District Ampelgading (Village Leb-akharjo), District Jabung (Ivory Twin Villages), District Lawang (Village Srigading) and Sub Wajak (Picis stilt village).

Table 1 setting functions in the area of Malang Regency Year 2000 - 2010

NO.	AREA	HA	(%)
1.	Annual Aquaculture	83153.04	25.59
2.	Seasonal Cultivation	18936.75	5.83
3.	Protected Limited	40554.87	12.48
4.	Protected Absolute	13036.13	4.01
5.	Other Protected	56462.84	17.38
6.	Buffer	100,096.58	30.81
7.	Spring Protection	172.04	0.05
8.	River Protection	7307.74	2.25
9.	Reservoir Protection	2841.84	0.87
10.	Protection	2358.49	0.73
	Number	3.24.920,32	100.00

Source: Spatial Plan of Malang Regency, 2002

Malang is a district that has a level considered high enough economic activity. This is evident from the large amount of Gross Regional Domestic Product (GRDP) Malang were ranked 6th out of 33 districts / cities in East Java province

Table 2. Contribution of Each Sector Gross Regional Domestic Product (GRDP) Malang Top Year Constant Prices (2000-2004) (percent).

No.	No Group Sector /Sector	2000	2001	2002	2003	2004	average
1.	Primary Sector Group	31.23	30.79	30.45	29.24	30.59	30.46

	1.1 Agriculture	30.56	30.09	29.74	28.53	29.86	29.76
	1.2 Mining and Quarrying	0.67	0.69	0.71	0.71	0.73	0.70
2.	Secondary Sector Group	18:19	18:53	18:58	18:33	18:86	18:50
	2.1 Processing Industry	14:39	14:59	14:60	14:44	14:89	14:58
	2.2 Electricity and Water Supply	2:15	2:32	2:36	2:28	2:30	2:28
	2.3 Building	1.66	1.63	1.61	1.61	1.67	1.64
3.	Tertiary Sector Group	50.58	50.68	50.79	51.18	50.55	50.76
	3.1 Trade, Hotels and Restaurants	22:54	22:55	22:95	23:53	23:53	23:02
	3.2 Transportation and Communication	8:32	8:19	8:05	7:96	7:86	8:08
	3.3 Finance, Real Estate and Business Services	4:98	5:34	5:44	5:36	5:29	5:28
	3.4 Services	14:75	14:59	14:53	14:34	13:86	14:41
	Total	100.00	100.00	100.00	100.00	100.00	100.00

Sources: Malang in Figures 2004 (processed).

Table 2 describes the role of each sector to GDP.

Role in the sector are grouped into three basic sectors, namely the primary sector, secondary and tertiary. Primary sector includes agriculture, mining and extractive sectors. The role of the primary sector contributed the last five years an average of 30.59%, which is dominated by the agricultural sector contributed an average of 29.76%.

DISCUSSION

Technology flour is one alternative process semi-finished products are recommended because it is more durable stored, easily blended (made of composite), enriched nutrients (fortified), formed and cooked to a faster-paced demands of modern life practical (Balit Postharvest Agriculture, 2002) (11)..

Cassava is very popular in the area of Java that lack of water as

a food staple. Based on the shape cassava were divided into 5 groups: 1) cassava logs, 2) cassava chips (thinly sliced), 3) cassava pellets, 4) cassava flour and 5) cassava cubes. In general, cassava logs and pellets used as raw material for animal feed, whereas in the form of cassava flour is used as a food ingredient. Cassava in the form of chips used as an industrial starch, dextrin, and glucose (Oramahi, 2005) (12).

The use of cassava for food products (Figure 1), Table 1 presented a variety of industry groups large and medium scale food in Indonesia using raw cassava

picture

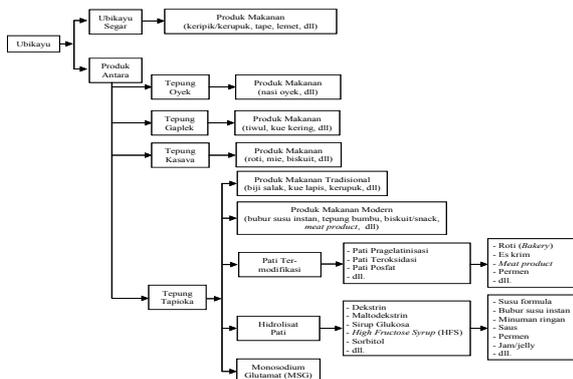


Figure 2 Schematic of cassava for Various Food Products

Table 3 Cassava-Based Food Industry Group

No.	Shape Raw Materials	Industrial Users
1.	Wet cassava	a. Ind.. pelumatan fruits and vegetables b. Ind.. rice milling and rice penyosohan c. Ind.. wheat flour d. Ind.. flour from whole grains, seeds, nuts, tubers, fruit e. Ind.. starch cassava (tapioca) f. Ind.. various kinds of starch palma g. Ind.. breads, pastries and the like h. Ind.. variety of crackers i. Ind.. thunderstorm and shrimp paste
2.	Cassava / Cassava (cassava)	a. Ind.. canning fruits and vegetables b. Ind.. rice milling and rice penyosohan c. Ind.. milling and cleaning of other cereals d. Ind.. flour from whole grains, seeds, nuts, tubers, fruit e. Ind.. starch cassava (tapioca) f. Ind.. various kinds of starch palma g. Ind.. breads, pastries and the like h. Ind.. variety of crackers
3.	Cassava flour (dried cassava flour)	a. Ind.. pelumatan fruits and vegetables b. Ind.. flour from whole grains, seeds, nuts, tubers, fruit c. Ind.. breads, pastries and the like d. Ind.. other sugar e. Ind.. macaroni, noodles, spaghetti, vermicelli, glass noodles and the like f. Ind.. Tea processing g. Ind.. soy sauce h. Ind.. variety of crackers i. Ind.. thundersorm and shrimp paste
4.	Kasava flour (cassava flour)	a. Ind.. processing and preserving of meat b. Ind.. breads, pastries and the like c. Ind.. diet of chocolate and confectionery d. Ind.. macaroni, noodles, spaghetti, vermicelli, glass noodles and the like e. Ind.. soy sauce f. Ind.. chips / dent from soy beans / legumes other g. Ind.. variety of crackers h. Ind.. thundersorm and shrimp paste

5.	Tapioca starch (tapioca flour)	a. Ind.. processing and preserving of meat b. Ind.. canning of fish and other aquatic biota c. Ind.. treatment for fish and other aquatic biota d. Ind.. pelumatan fruits and vegetables e. Ind.. ice cream f. Ind.. stripping and cleaning of grain than coffee g. Ind.. stripping and cleaning a separate beans from farms h. Ind.. starch cassava (tapioca) i. Ind.. various kinds of starch palma j. Ind.. breads, pastries and the like k. Ind.. granulated sugar l. Ind.. cocoa powder m. Ind.. diet of chocolate and confectionery n. Ind.. macaroni, noodles, spaghetti, vermicelli, glass noodles and the like o. Ind.. ice cube p. Ind.. soy sauce q. Ind.. oncom r. Ind.. chips / dent from soy beans / legumes other s. Ind.. variety of crackers t. Ind.. thunderstorm and shrimp paste u. Ind.. malt and malt beverages containing
6.	Ceriping cassava (cassava chips)	a. Ind.. milling and grain cleaning b. Ind.. starch cassava (tapioca) c. Ind.. variety of crackers
7.	Dregs tapioca (tapioca waste)	a. Ind.. starch cassava (tapioca) b. Ind.. soy sauce

Sources: Large and Medium Manufacturing Statistics Indonesia (BPS, 2003).

The survey results indicate that the market is used in the manufacture of starch noodle products (whether or not instant noodles), crackers, flour spices (coating mix), assorted snack / snack (snack food), processed meat products (meat product), cereals, beverages, spices, instant by instant baby porridge.

Table 4 Types of Traditional Food-Based cassava diKabupaten Malang, East Java Province.

No.	Type of food	Raw materials	Ways of processing
1.	Tiwul	Cassava	Steamed
2.	Boiled cassava	Fresh cassava	Boiled
3.	Fried cassava	Fresh cassava	Fried
4.	Onde-onde	Fresh cassava	Fried
5.	Putty	Fresh cassava	Fried
6.	Billy	Cassava	Steamed
7.	Kaolin / Lemet	Fresh cassava	Steamed
8.	Tape	Fresh cassava	+ Steamed Fermented
9.	Jongkong	Fresh cassava	Steamed
10.	Chips	Fresh cassava	Fried
11.	Chips	Fresh cassava	Fried
12.	Kemplang	Fresh cassava	Boiled
13.	Compote	Fresh cassava	Steamed
14.	Gethuk	Fresh cassava	+ + Steamed Dried
15.	Crackers	Tapioca starch	Fried
16.	Alen-alen	Tapioca starch	Fried
17.	Putu Tegal	Fresh cassava	Steamed
18.	Ceriping	Fresh cassava	Fried
	Poding cassava	Fresh cassava	Steamed

Source: Primary Data, 2005

Table 4.3 below shows the structure of costs and revenues gatot agro instant. Agro-industry is able to produce instant gatot 600 kg per month of raw materials as much as 1,200 kg of dried cassava. With a total cost of Rp 969,000 and Rp 1,500,000 selling price, profits of Rp 531,000.

Table 5 Cost and Revenue Structure Industry Instant Billy Malang (USD / month), 2005.

Commentary	Number	Unit	Price (USD / unit)	Value (USD)
Cost: Cassava	1200	kg	500	600 000
Labor	6	person	30,000	180 000
BBM	12th	liter	2000	24,000
Packing	600	wrap	275	165 000
Total cost	-	-	-	969 000
Revenue	600	kg	2500	1.5 million
Profit	-	-	-	531 000
R / C ratio				1.55

Agroindustry instant tiwul produce 500 kg of product per month of raw materials as much as 1,000 kg of dried cassava. The total cost of production of instant tiwul Rp 807,500 and Rp selling products is 1,250,000. Thus the profit of Rp 442 000 (Table 4.). The cost structure and tiwul instant instant gatot very similar. Agro make instant tiwul usually make instant gatot processing is not much different.

Table 6 Cost and Revenue Structure Industry Instant tiwul in Malang (USD / month), 2005.

Commentary	Number	Unit	Price (USD / unit)	Value (USD)
Cost: Cassava	1000	kg	500	500 000
Labor	6	person	30,000	150 000
BBM	10th	liter	2000	20,000
Packing	500	wrap	275	137 500
Total cost	-	-	-	969 000
Revenue	500	kg	2500	1.25 million
Profit	-	-	-	442 500
R / C ratio				1.29

The average price of fresh cassava in Malang regency was Rp 344/kg to Rp 89 standard deviations / kg. The coefficient of variation of cassava prices tend to be slightly down from 22:59 per cent in 2000 to 18.70 percent in 2003, and rose again to 32.19 percent in 2004, while the coefficient variais rice prices tend to fall from 14:45 percent in 2004 to 4:09 percent in 2004. Meanwhile, the coefficient of variation of cassava during the period 2000 to 2004 was 25.78 percent or greater of the rice (9.19%). This indicates that cassava prices fluctuate more than other food prices, the price variation rice .coefisien other crops decline, except for the tapioca, which rose from 6.76 to 9.35 percent.

One businessman agro gatot instant and instant tiwul equipment assistance of the District Government Trenggalek be electric powered oven capacity is very large, which could tiwul gatot instant drying and several hundred pounds in a day or much faster than drying in the sun. This tool was never used by the agro-industry entrepreneurs. Employers still prefer using sunlight for drying because it is cheaper and relatively small number of products. Large-capacity oven with electric power only suitable for use by agro-industry production capacity is very large so that the product can be tiwul and gatot instant dry.

Made from raw cassava agro-industrial development in East Java is influenced by several factors (internal and external) that can be strengths and weaknesses and the opportunities and threats.

The components of the internal factors that contains the strengths and weaknesses of agro Table 7. Potential opportunities for the development of human-resource aspect is particularly strong motivation to try, then leadership, education and

skill levels. Strong Motivation is visible from the agribusiness sincerity in trying and solve problems.

Table 7. Components of Internal factors (strengths and weaknesses) Agribusiness cassava in East Java, 2005.

No	Internal variables	Strength (+)			Weaknesses (-)		
		Weight	Scale	Value	Weight	Scale	Value
1.	Aspects of HR						
	a. Leadership within the company	0.1	3	0.3			
	b. Motivation in trying?	0.15	4	0.6			
	c. The level of education of agribusiness	0.05	3	0.15			
	d. Skill levels.	0.1	3	0.3			
	e. The level of technology adoption.				0.1	4	0.4
	f. Gender inequality				0.1	5	0.5
2.	Aspects of SDA:						
	a. Availability of land	0.1	3	0.3			
	b. Tenure				0.05	3	0.15
	c. Availability of / Var.unggul	0.05	4	0.2			
	d. Access to resources or raw materials	0.1	3	0.3			
3.	Institutional aspects:						
	a. Institutional structure				0.05	3	0.15
	b. Mechanism of action of institutional				0.05	3	0.15
	c. Coordination				0.15	4	0.6
4.	Aspects of business / activity:						
	a. Diversity efforts				0.15	4	0.6
	b. Management	0.05	3	0.15			
	c. The patent				0.05	3	0.15
	d. Trademark	0.05	3	0.15			
	e. Reputation by consumers	0.05	3	0.15			
	f. Cost of business				0.1	4	0.4
	g. Business profits				0.05	3	0.15
	h. Availability of raw materials	0.1	4	0.4			
	i. The distribution network				0.15	4	0.4
	j. Product Diversity	0.1	5	0.5			
	Number	1.00		3.50	1.00		3.85

Notes: Internal factors = (+ 3.50) + (- 3.85) = - 0.35

Institutional structure and mechanism of action of cassava agroindustry in Malang is a weakness enough to affect the success. Business organizations which only consists of the leadership and management of workers with less efficient (kinship) is a weakness. Unless it less agro interact well and can even negatively influence each other.

Table 8 shows the opportunities and threats cassava agroindustry development in Malang and about policies government supports the development of the industry is that the assessment is not burdensome and easier licensing procedures. The factor that is still a threat is no policy that encourages the export or

import pressing and also about marketing. Performance counseling also looks weak.

Table 8 Components of External Factors (Opportunities and Threats) Cassava-Based Agricultural Development in East Java in 2005.

No	Internal variables	Opportunity (+)			Threats (-)		
		Weight	Scale	Value	Weight	Scale	Value
1.	Aspects of government policy:						
	a. Government policy (Law / Regulation) that encourage exports				0.1	3	0.3
	b. How policy of import				0.05	3	0.15
	c. Determination of tax	0.05	4	0.2			
	d. Market policies				0.1	3	0.3
	e. Licensing.	0.1	4	0.4			
	f. Performance extension				0.05	3	0.15
2.	Geographical Aspects						
	a. Climate	0.1	3	0.3			
	b. Geography	0.05	5	0.25			
	c. Location	0.05	5	0.25			
	d. Market access	0.1	5	0.5			
3.	Aspects of Technology						
	a. Cultivation / Farming	0.1	3	0.3			
	b. Alsintan				0.05	4	0.2
	c. Post-harvest	0.05	4	0.2			
	d. Processing results	0.1	5	0.5			
4.	Socio-economic and cultural aspects						
	a. Marketing results				0.1	4	0.4
	b. Competition in a free market				0.15	3	0.45
	c. Transport problems	0.1	3	0.3			
	d. Access to credit				0.1	4	0.4
	e. The partnership?	0.1	3	0.3			
	f. Consumer needs	0.1	5	0.5			
	g. Changes in consumer tastes				0.05	2	0.1
	h. Product substitution				0.1	3	0.3
	i. Number of products (market absorption)				0.15	5	0.75
	Number	1.00		4.0	1.00		3.50

Notes: Internal factors = (+ 4.0) + (- 3.5) = 0.5 +

Commodities Cassava is one of the mainstays of Malang regency. Agroecosystem geography and location strongly support the development of cassava industry. Access to the market is also relatively easy for smooth transport. From the geographical aspect no serious threat.

Technology of production and processing of cassava is widely available, both in terms of cultivation, harvest, post-harvest and food industries. Technological problems almost said no, except in the case of tools and processing machines that have not been so efficient.

SWOT Analysis Diagram

Assessment results of the analysis of internal factors (Table 5) and external factors (Table 6) can be described in a diagram with X = (- 0.86) and Y = (+0.4) Figure 2.

	Chance		
Turnaround strategy		Aggressive strategy	
III XY (-0.35; + 0.5)			I
		Y (+0.5)	
Weakness			Strength
	X (-0.35)		
Defensive strategy		Diversification strategy	
IV			II
	Threat		

Figure 3 Diagram SWOT Analysis cassava Agribusiness Development in East Java, 2005

Based on the diagram of the analysis indicated that the position of entrepreneurs in the development of cassava agroindustry are in quadrant III region. This position is a situation that is not so bad, because there are opportunities for development although there are internal weaknesses. The strategy should the government do in this position is an opportunity to market the widest on exports and depress. imports as well as providing access to business loans to agro-industry actors. Existing strength must be maintained, for example, aspects of human resources. Natural resources and institutional businesses. Weaknesses need to be remedied by increasing interaction with other relevant institutions. Sideline, patents and production cost efficiencies to be fought to support the success of the cassava industry. In Table 7 it can be seen the performance of the strategy formulation development of agro-industrial raw material of cassava in East Java that combines factors of strengths and weaknesses (internal) with factors opportunities and threats (external).

Table 9 Formulation of Strategy Performance Made from Raw Cassava Agro-Industry Development in East Java, 2005.

Factor Internal Factor Internal	Strength (S) - Motivation attempt - Raw materials sufficient - A variety of reasonably	Weaknesses (W) - Low level of technology adoption - Diversity less effort - The distribution network is less - Potensi the woman has not dioptimal - Coordination of entrepreneurs
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<p>Opportunities (O) - Processing technology - Market access - Consumer needs</p>	<p>SO Strategies - Motivation is strong, enough raw materials, and a variety of products that can be produced and the availability of technology's processing should be authorized to expand access to markets outside the district and meet the needs of consumers according to taste.</p>	<p>WO Strategies - Weaknesses are still many (rate of technology adoption, Diver-sitas business, distribution network, and the lack of coordination pernan women entrepreneurs) can be overcome by the use of processing technologies in order to quality products according to customer needs and increase market access</p>
<p>Threats (T) - Market absorption - Market access - Consumer needs</p>	<p>ST Strategies - Strength of existing (raw materials and motivation-man keanekaraga products) must be increased in order to attract the free market and reduce the competitive market unhealthy.</p>	<p>WT Strategies - To increase market absorption and tackle the real problems that exist required the improvement of technology adoption pe-ngolahan outcomes, diversity of distribution network business, the role of women, and improving inter Hubu with similar employers.</p>

Source: Primary Data, 2005, processed.

Various aspects need to be considered in efforts to develop agro-based local food. Availability of raw materials is a local resource is the main factor. Another factor to consider is the processing

Local food-based agro-industry requires raw materials of agricultural products suitable for technology, human resources, markets, and government policies.

processing into food products. Agricultural products from local production will facilitate agro producers get it. While more near sources of raw materials, the price could be cheaper than buying raw materials from other areas, which are located further away. that local agricultural production sufficient for agro raw materials in the region. It could be said that the agro-industry has grown along with the availability of raw materials is relatively sufficient.

Equipment for processing is relatively simple and the manual. Some use the machine for agro-processing products, such as agro-machinery milling on tapioca, instant tiwul, for drying products such as agro-crackers, still using the sun. Scale agrobusinesses is critical types of tools used. The tools used are generally simple for relatively small-scale validity. Help kiln (oven) for an electric-powered instant gatot and instant tiwul in Malang is not used because the size is too big. If the device is still operating will cost a relatively large so that the agro entrepreneurs still prefer drying in the sun. Technically, the type of equipment needed are easy to obtain and for the device to be economically viable agro entrepreneurs definitely trying to buy it.

Skilled workforce needed for agro-although to some extent it does not require high skills. Generally, skills are not acquired through formal education, but the owners and workers get through the experience. If it is still profitable then agro entrepreneurs trying to bring skilled workers from outside the area. Through the practical training that is not too difficult for employers agro weeks to get skilled manpower. Basically labor to work in the agro-based local food available in a growing number of agro enough to be supported in an area of adequate human resources. In this case, managers must have a soul agro entrepreneurs (entrepreneurship). Tenacity as an entrepreneur will encourage businesses in keen to see every opportunity and with a strong will to overcome all obstacles encountered.

Products produced by agro commonly sold in local markets, namely in the region or district. Some products are sold outside the region, in terms of marketing of agro products to consider

four major components of marketing, namely (i) the quality of the product (product), (ii) marketing (place), (iii) the price of the product sold (price), and (iv) the promotion or advertising (promotion). Quality products should be made as good as possible so that the bus a interisting consumer interest. Place strategically market the product should be easily accessible to consumers.

Investment waste processing equipment is necessary for starch agroindustry. Disposal of waste without any treatment at all harmful polluting the surrounding community or along watersheds through waste. Keep in District Government policy support for agro-industrial waste tapioka flour. While investasi fatherly relative agro equipment not needed, or partly be met from the market such as generators, because generally using simple equipment.

Policy of the central and local governments to encourage agro-based local food is needed. Development of adequate infrastructure, such as roads, telecommunications and electricity networks, will expedite the processing and distribution. Giving credit with cheaper interest rates for working capital and the purchase of equipment for small and medium-scale agro-industries to ease the burden of the cost of production. Giving raskin should only staple food rice areas. As for the region instead of rice staple food should be consumed foodstuffs suitable local community. Giving rice for staple food in the region instead of rice will only encourage people to abandon traditional staple foods and switch to rice. Basically, people should be encouraged to use local food as a staple meal to reduce dependency on rice.

The government also needs to encourage partnerships between entrepreneurs of small and medium-scale agro-industries with a relatively larger employers. This partnership will be beneficial, especially in marketing. Expected that large employers can reach a broader market so that small businesses can increase their production capacity.

CONCLUSIONS AND POLICY IMPLICATIONS

CONCLUSIONS

1) (a). Agro-food-based raw materials locally available in sufficient numbers in each area of research, although there are fluctuations in supply between seasons every year. Cassava farming is still profitable despite the relatively small; (b). Most of the population in the study area, especially those living in rural areas, consuming cassava as a staple meal fit generated by farmland. Meanwhile, the sourcing of rice consumed by households, including rural households from purchases. Types of local food consumed by households for cassava in the form of fresh cassava household food consumption pattern is biased to the food sources of carbohydrates, not as varied as in the Pattern of Food expectancy, as well as for food consumption substantially. Consumption of staple food in the country is more diverse than in urban areas (c). Most households consume cassava as the food staple in the form of a mixture by mixing rice for consumption of cassava, the cassava / sweetpotato for maize consumption. Types of processed foods that use raw cassava cooking by households as a snack relative plenty, yet still traditional way of cooking (steamed, boiled, fried) and no new food is processed; (d). The imbalance of energy consumption based on energy and expenses are generally higher in rural than in urban areas. For energy consumption derived from cassava is consumed mostly mixed-use rice, some single consumed as a staple food. While single in sago consumed as a staple food. Variety of locally processed food but its still pretty much traditional or no new food.

2) (a). Nationally range of products processed from cassava quite a lot, even used for non-food industries. Nevertheless, the local form of processed food in the study area are relatively much less than the potential that exists nationally. This is mainly related to the tastes of the local population, (b). Agro products that can be used as a staple food is instant tiwul of Malang. Other agro products consumed as food additives. Local food-based agro-industry are relatively profitable but it is difficult to expand due to limited market demand. Competition among manufacturers of other districts to agroindustry in Malang.

3) food processing technologies at the household level is a tech-

nology that is traditional. Similarly, agro-processing technology for many to manual, only a few are using mechanical equipment. The relatively small scale of production has not been encouraging agro entrepreneurs to use technology modern though such technology readily available from both government and private institutions.

4) Fluctuations in the price of cassava, corn and sago relatively greater than the price of rice. Food prices locally, but rice, greatly influenced the market mechanism so that the number of supply greatly affect the sale price because the demand is relatively fixed. Agro-industry is in a position of cassava-based U-turn, which overcome the drawbacks that exist for utilize opportunities available. While agro corn and sago are in a defensive position, which address the weaknesses and threats to survival.

Policy Implications

Production of cassava and maize in the study area could be improved such as by improved cultivation techniques. For example, the use of quality seeds and fertilizer on cassava farming in

Malang. Production of raw materials and growing agro entrepreneurs will make it easier for acquire agro raw materials. Although it could be harmful to farmers because the selling price will decrease if the demand remains.

By continuously government should promote the use of local food to food staples. Giving rice to the poor for all regions in Indonesia needs to be revisited. Regional staple food instead of rice should be given to local food assistance. This is in addition to retaining local staple foods also increase the price received by farmers if the government is willing to buy local food to subsidized food aid.

Government needs to provide facilities for the development of the local food industry. These facilities may include among others, export policies, market promotion, such as intensive fostering entrepreneurship, product quality, open access to financial credit, and the provision of processing technology. Besides, it is necessary to encourage partnerships between small and medium-scale entrepreneurs to large-scale entrepreneurs, especially in terms of quality of product marketing and development.

REFERENCE

- East Java Provincial Agriculture Office. , 2004. Annual Report, 2004. Surabaya. | Anonimous. , 2003. Assessment of Food Supply and Consumption Analysis. BBKP | Cooperation, Ministry of Agriculture with the Faculty of Agriculture, IPB. | Jakarta. | Baharsyah, S. 1994. Diversification Through Food Product Development. No. Food, | Magazine. 18, Vol. V. Jakarta. | Suprapti, ML 2005. Tapioca Starch: Preparation and Utilization. Canisius, | Yogyakarta. | Suryana, A. , 2005. Direction, Strategy and Agricultural Development Programme | 2005-2009. Agency for Agricultural Research and Development. Department | of Agriculture. | Yusdja, Y and M. Iqbal. 2002. Development of Agro-industry wisdom. Monograph | Series 21. Social Research Institute of Agricultural Economics. Bogor. | Nainggolan, K. , 2004. Traditional Food Strategy and Policy in the Food Security. | BBKP, the Department of Agriculture. Jakarta. | Apriyantono, A. , 2006. Performance and Development Strategic National Food | Policy. Paper presented at the "National Legislative Members Silaturahmi | PKS", in the Auditorium of BPPT, Jl. . H. Thamrin. 8, Jakarta, 30 April 2006. | Porter ME, 1985. Competitive Advantage. Creating and Sustaining Superior | Performance. The Free Press. A Division of Macmillan Inc. New York. | Singarimbun, Masri dan Sofian Effendi, 1995, Metode Penelitian Survai , PT. Pustaka LP3ES Indonesia, Jakarta | Postharvest Research Institute for Agriculture. 2002. Technical Guidance Process | Various Flour Foodstuffs Sources of Local Carbohydrates. Jakarta. | Oramahi, HA 2005. Cassava Processing "Chips" Farmers Can Increase Revenues? | Sovereignty of the People, June 24, 2005, p. 10. |