THE PROSPECTS OF JAMU AGRO-INDUSTRY AS A HERBAL AGRIBUSINESS IN SUMENEP

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Abstract

Jamu is a product of natural ingredients, origin to Indonesia, which is used for health maintenance, disease treatment and prevention, the recovery of health, fitness, and beauty treatment.Treatment using herbs has been started by the ancestors of Indonesia. These natural ingredients are a legacy handed down by the ancestors of Indonesia, which has had knowledge of how to producethe natural herbs for medical, health care and beauty treatment. The purpose of this study was to determine the potential of herbal agro-industries in Sumenep, by using Exponential Comparative method and to determine the financial feasibility of herb agro-industries in Sumenep. Based on the results of this study, it showed that in the herbs agro-industry in Sumenep was ranked second leading commodity in Sumenep after cassava chips. Thus, which a very high internal rate of return (IRR) of 84.5%, it is recommended that the herbs agro-industry should be promoted and expended.

Keywords: agro-industry potential, feasibility, herbs

1. Introduction

Jamu is traditional herbal medicine product that originated from Indonesian and made from natural ingredients. Its used for health maintenance, disease prevention and treatment, recovery of health, fitness, and beauty treatment. Herbal medicine is the cultural heritage that has been consumed daily by many people in Indonesia. Madura is one famous area that is produce the fine jamu in Indonesia.People in Madura is formed the community that have long practiced traditional herbal medicine or, more commonly known herbs. In general, herbal drink that formulated from herbs have become daily consumption by the family and society in Madura, especially family of descendants palace and relatives of the King (Hand, 2003). In general, Madura herbs contain many recipes for maintaining health such as: herbal body care, postpartum herbs, herbal breast firming, maintaining stamina, and others.

Jamu Madura are available not only in Madura local market, but also outside area of Madura. Most of these prodcuts are produced by households or small-scale industry. Thus, herbal agro-industry for medical and beauty treatment are able to contribute income for the Madura region.

However, there are many obstacles faced by the herbal industry in Indonesia. Jamu that produced from chemical ingredients are circulated in market and various imported drugs (pharmaceutical and medicational products) are able to penetrate the domestic market and appear more successfulin attracting people to consume. Competition is great and this has great impact on home industry. Because jamu is a product of the cultural heritage and contribute greatly to the creation of domestic labor, necessary to create a tradition to love Indonesiaown products and to conserve the culture.

Sumenep is one ofdistrict in Madura that produce jamu asmedicational herbs. Based on the aboveexplanation, thisstudy attempted to uncover the potential and financial feasibility aspects of herbal agro-industrial in Sumenep.

2. Literature Review

a. Agro-industry

Agro-industry is a branch of agribusiness which is closely related to agriculture which includes linkages to the rear (backward linkange) and relating to the future (forward linkange). Backward

linkages concerns about the agricultural production process that requires production inputs and agricultural implements. Linkage to the front of the characteristics of agricultural products is seasonal, perishable or consumer demand quality requirements, in line with the socio-economic improvement. This activity requires handling without changing the original structure and further processing that changes the nature of origin or nature of both.

According to Soekartawi (2001), agro-industry is an industry that utilized raw material from agricultural products. Agro-industry is a process of agricultural production that vary from simple direct production to processing of modern production and the process is a series of activities that can be used as a source of income and livelihood variation in the countryside.

Developing a sustainable also requires certain requirements on the agricultural production as raw material, must be done in an integrated overlay, the continuity between the production of the season as much as possible also considered. This requires the production and storage technology that is able to maintain the continuity of the production (Baharsjah, 1992).

b. Jamu

Jamu is a traditional medicine of a known culture of Javanese society since ancient times. Javanese peopleare very knowlegable in traditional medicines. Almost all parents can give a prescription for any disease with particular concoction of leaves, roots, fruit or plants found in the garden of each house (Geertz, 1983).

Jamu is considered beneficial for health maintenance. Jamu is a herb that arise as a result of the problems face by society in earlier times, namely how to take care of the body and treating of various diseases, which at the time was not yet familiar with modern medicine. They only know the existence of those "smart" and certain herbs obtained by personal experience and expertizes. Similarly, the special treatment for women, for example: wanting to stay young, maintaining body condition during and after pregnancy, keeping the fetus healthy in the womb, keeping the intimacy of married couples (Pali, 1994).

3. Research Methods

Identification of the potential of agro-industries herbs at District Level in Sumenep using Exponential Comparative Method. Criteria and weights used in the analysis of rural agro-industries in each district with Exponential Comparative Method (MPE) using the provisions of Bank Indonesia (2010) in Harisudin etall (2010: 18) as follows:

a) the number of business units / households of rural agro-industry actors (weight value 3);

b) market, with a range of criteria commodity marketing / product (weight value 4);

c) availability of raw materials / inputs rural agro-industry (weight value 3); and

d) contribution of rural agro-industry to the economy of the region (the weight 8).

The formulation of Exponential Comparative analysis method was adopted from Marimin (2004: 22) is as follows:

$$Total\ Value\ (tonnes) = \Sigma m\ j\text{-}1\ (RKij)\ TKKj$$

Where tonnes is the total value alternative to (i), RKij is the degree of the relative importance of criteria for the selection decision-j I, TKKij is the degree of interest criteria j-th decision, TKK> 0; round, i is 1,2,3 ... n = number of decision options, and M is the number of decision criteria.

Identification of the potential of agro-industries in Sumenep medicinal use Borda method. Data used in the Borda method in the analysis of data generated Exponential Comparative Method is 5 agroindustrial featured in every district in Sumenep. The formula for calculation using borda method is as follows:

Borda value X = Σ (MPE X * Value ranking of alternative rural agro-industry)

Where X is the X rural agro-industry,

MPE X is exponentially Agroindustrial Value Comparison Method X and Value Ranking is ranking agro-industry value X.

Financial feasibility analysis of agribusiness agroindustrial herbs according Soetriono, (2006) using multiple analysis as below:

a) NPV (Net Present Value),

b) Net B / C,

c) IRR

4. Results and Discussion

Potential Herbal Agro-industry in Sumenep

Mapping agroindustrial herbs in Sumenep done by direct survey to all districts in Sumenep. Teble 1 is showed the map (spreads) agro-industry in Sumenep herbs. The distribution of jamu agro-industry in Sumenep quite broad, it is evident from the number of districts that are jamu agroindustria. Jamu agro-industryis scattered in 16 districts out of 27 districts that are in Sumenep. Agro-industry of jamu can be used as an excellent agro-industry in Sumenep because it has a fairly wide distribution.

Table 1. Distribution of Jamu Agro-Industry in Sumenep

No	Distric	Amount
1	Sumenep City	31
2	Ganding	6
3	Dasuk	5
4	Talango	5
5	Manding	4
6	Kalianget	4
7	Gapura	3
8	Ambunten	3
9	Batuan	2
10	Lenteng	2
11	Rubaru	2
12	Guluk-guluk	2
13	Saronggi	1
14	Bluto	1
15	Batang-batang	1
16	Sapeken	1
	Total amount	73

Source: Data processed, 2014

Potential (position) of jamu agro-industry at the district level in Sumenep through Exponential Method approach can be seen in Table 2. Ratings and agro-industry MPE value in each district is different. This shows that the potential of jamu agro-industry is also different in each district. Factors that affecting the potential of instant jamu agro-industry areis the number of business units/households

industry, market (marketing of commodity/product), availability of raw materials/rural production agro-industry infrastructure and rural agro-industry contribution to the regional economy.

Table 2. Potential medicinal agro-industry at the district level in Sumenep

No	Distric	MPE value	Rating
1	Sumenep City	235	2
2	Ganding	702	1
3	Dasuk	702	3
4	Talango	723	2
5	Manding	670	2
6	Kalianget	38	3
7	Gapura	94	4
8	Ambunten	94	4
9	Batuan	27	2
10	Lenteng	19	3
11	Rubaru	84	2
12	Guluk-guluk	19	3
13	Saronggi	4	4
14	Bluto	22	4
15	Batang-batang	22	4
16	Sapeken	4	3

Source: Data processed, 2014

Potential jamu agro-industry at the district level in Sumenep can be seen in Table 3. The results of the Borda analysis in Table 3 shows that the jamu agroindustrial ranks 2 out of 5 seed that has the potential of agro-industry in Sumenep. Leading commodity ranked first in Sumenep is cassava chips. Jamu agro-industry became one of the superior agro-industry in Sumenep because instant jamu agro-industry has a wide distribution in Sumenep, in addition, the raw materials are also easily obtained. The new life style that attracted people to consume the herbal medicine and "back to nature" and the support of the government to develop the area agricultural pharmacy in Sumenep is expected to be an opportunity for entrepreneurs to develop their business in jamu agro-industry.

Table 3. Potential leading commodity at the district level in Sumenep

No	Commodity	Rank	Borda value
1	Jamu	2	7.470
2	Cassava chips	1	8.259
3	Batik	5	4.581
4	Fish processed product	4	7.053
5	Sugar	3	7.249

Source: Data processed, 2014

c. Eligibility Herbal Agro-industry in Sumenep

Selection of business pattern

Financial analysis is expected to provide an overview of the prospects for the development of agribusiness of jamu agro-industry in Sumenep financially. The businessman (including employers) are encouraged to be able to restore the credit granted by financial institutions, such as commercial banks, domesticbanks, union cooperation and other financial institutions in a reasonable period of time (± 3 years). The feasibility of this model is the development of jamu agro-industry that already exist in the research area and in order to increase the independent business and the possibility of development in other area of Sumenep.

Assumptions and technical parameters

Assumptions and parameters for the jamu agro-industry financial analysis are intended to explain the general scheme of the variables that used in the calculation of financial analysis. The project period is five years, where the zero year as the basis for calculating, and the present valueis the year when the initial investment costs issued.Working day for a year is assumed 60 days (4 days per month). The following assumptions and parameters of financial analysis of jamu agro industrypresented in Table 4.

Components and Cost Structure

a. Investment costs

The investment costs are fixed costs which amount is not affected by the amount of product produced. Investment costs generally consist of license fees, leese of land, building production, production equipment, and other equipment.License fees include SIUP, SITU, industrial and business license of company registration validity period of 5 years, while for MOH license and TIN valid forever. Lease of land and buildings paid once during the project period (5 years), so every year should be excluded amortization costs for components of this land lease. At any given time be reinvested to purchase production equipment economic life of less than 5 years. Components of investment cost sequentially presented in Table 5.

b. Operating costs

Operational costs are variable costs are influenced by the size of the production. Operational cost for the year is calculated based on the number of working days for the agroindustrial production of herbal medicine (4 working days per month). Components include the operating costs, raw materials, supporting materials, marketing costs, labor costs, overhead costs, and administrative costs.

Table 4. Assumptions and Financial Analysis Technical Parameters of Jamu Agro-Industry

No	Asumption	Value	Unit	Description
1	Project period	5	Year	5 years period
2	Work day per month	4	Day	
3	Work month per year	12	Month	
4	Business scale			1 day calculation
	a. Raw material	50	kg	
	b. Production output			
	• Jamu Awet Ayu	3	kg	
	• Jamu Galian Rapet	3	kg	
	• Jamu Delima Putih	3	kg	
	• Tongkat	30	Pack	
5	Product price			
	• Jamu Awet Ayu	600	Rp/gram	
	• Jamu Galian Rapet	700	Rp/gram	
	• Jamu Delima Putih	700	Rp/gram	
	• Tongkat	40000	Rp/pack	
6	Raw material price **)		Rp/kg	
7	Supportingmaterial uses			1 month calculation
	• Bottle	10	unit	
	• Plastic bag	5	kg	
8	Labor/ employee costs			
	• Leader	1	Person	
	• Administration	1	Person	
	• part time worker	2	Person	
9	Maintenance costs	5	%/year	Equipment value
10	Discount Factor	12	%	Interest rate

**) average price for a year
Daily wage Rp. 30,000/ day

Table 5. Investment Costs

No	Costs	Rupiah	Depreciation/year
1	Licenses	1,750,000	240,000
2	Lease of land and buildings	12,000,000	2,400,000
3	Production equipments	26,440,000	5,288,000
4	Other equipment	150,000	30,000
	Total investment costs	**40,340,000**	**7,958,000**
5	Invesment cost source		
	Credit	40,340,000	
	Owner funds	0	

Table 6. Operational Costs

No	Costs	Rupiah
1	Raw materials	35,670,000
2	Supporting material	2,520,000
3	Marketing	3,600,000
4	Labor costs	18,000,000
5	Factory overhead costs	37,929,500
6	Administration and general costs	600,000
Total Cost		**98,319,500**

Investment fund and working capital

The amount of funds for working capital needs are determined by the magnitude of the initial funding requirements for one production cycle. Jamu agro-industry businesses are assumed to have the production cycle 4 days in a month (starting from the processing to the entrepreneurs received the products). Fund costs requirements can be formulated as follows:

Working funding requirements = $\frac{production\ cycle}{working\ day\ per\ year}$x operational costs per year

$= \frac{4}{48}$ x Rp 98,319,500

= Rp 8,160,519

Based on the calculation of working funding requirements above, the initial capital requirement jamu agro-industry in Sumenep is RP. 48,500,519 -which consists of the components of the investment cost of Rp40,340,000, -and initial working funding requirements for the production cycle Rp. 8,160,519. The fee requirement is assumed come from the funds of credit bank, with the credit period is five years

and interest rate is 12% per year without a grace period. The level of interest rates is treated equally with the market interest/commercialwith decreasing calculation system.

Production and Income

Based on the description assumption above, the production capacity of jamu agro-industryfor one year is 144 kg of Jamu Awet Ayu with price Rp 200,000/ kg, 144 kg of Jamu Galian Rapet with price Rp 300,000/kg, 144 kg of Jamu Delima Putih with price Rp 300,000/kg, and 1.080 packs of Tongkatwiththe price Rp.40,000/pack. Thus, the total income from the production of jamu agro-industry is Rp. 158,000,000. The following is a table that describes the production and agro-industry revenues herbal medicine.

Table 7. Production and Income Projections ofJamuAgro-Industry

Description	Unit	Production kg/month	Production kg/year	Price Rp/kg	Rupiah/year
Product variants					
• Jamu Awet Ayu	kg	12	144	200,000	28,800,000
• Jamu Galian Rapet	kg	12	144	300,000	43,200,000
• Jamu Delima Putih	kg	12	144	300,000	43,200,000
• Tongkat	pack	90	1.080	40,000	43,200,000
Total Gross Income (per year)					158,400,000

Profit/loss Projection

The calculation of the profit rate or profitability of jamu agro-industry, is an important part of financial analysis and investment planning. The profitability is calculated from the difference between income and outcome every year. Table 8 shows the rate of profit (surplus) that obtained from jamu agro-industry for one year.

Table 8. Profit/loss Projectionof Jamu Agro-industry

No	Description	Amount
1	Income	Rp 158,400,000
2	Production operational costs	Rp 98,319,500
3	Gross loss	Rp 60,080,500
4	Interest rate	Rp 4,101,233
5	Profit before tax	Rp 55,979,267

6	Depreciation costs	Rp	7,958,000
7	Profit include tax	Rp	48,021,267
8	Tax	Rp	7,203,190
9	Net profit	Rp	40,818,077
10	Margin Profit (%)		25.77

Table 8 shows the calculation of the projected annual income earned profit of Rp. 40,818,077, - with a profit margin of 25.77%. This profit will increase each year as by declining interest rate and after the businessmanjamu agro-industry finishing the creditinstallment in the third year. In the fourth year jamu agro-industry will earn the profit Rp.44,304,125.

Ca**sh Flow Projections and Project Feasibility**

Cash flow in this calculation is divided into two, cash inflow and cash outflow. Cash inflow is derived from the jamu agro-industry products for one year, with assumption the business capacity is effect to production volume that will determine the total value of sales, thus the inflow can be optimal. As for the cash outflow is derived from the investment costs, working funding costs and operating costs including credit and income tax installment payments.

For the results of the feasibility calculation jamu agro-industry investment plans, the results showed that this business is worth to held. This is supported by the data in Table 9, with a discount factor as 12% per year. Net B/C ratio is 3.18 (greater than 1) and NPV is Rp. 105,878,935.94 (greater than 0) and was obtained IRR 84.05% (greater than the discount rate). In conclusion, jamu agro-industry business is still feasible until the interest rate (discount rate) of 84.05% per year.

Table 9. Analysis of Feasibility Agroindustri herbs

Feasibily parameters	**Value**
IRR	84.05%
PBP (business) – year	1.13
DF	12%
NPV	105,878,934.94
Net B/C ratio	3.18

5. Conclusion

Based on the analysis and discussion can be summarized as follows:

1. Jamu agro-industry in Sumenep ranks second leading commodity in Sumenep after cassava chips.
2. Jamu agro-industryin Sumenep worth to be held with the Net B/C ratio 3.18, NPVRp. 105,878,935.94 and IRR 84.05% at discount rate 12%.

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