The Identification of Leading Agroindustries in South Kalimantan Province Indonesia

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ABSTRACT

Agroindustries have several positive roles in promoting regional economic development as well as improving income distribution. This study is primarily purposed to determine some leading agroindustries based on their financial, regional and distributional aspects. Research result shows that in ten districts of South Kalimantan Province Indonesia there are totally 17,881 units agroindustries consisting of 29 types. The majorities of agroindustries are large scale agroindustries. The leading agroindustries and appropriate districts as the central locations, where the agroindustries should be developed, are coconut oil and coconut cake industry in HSS, coffee powder industry in HST, brown sugar industry in BJR and salted fish industry in KTB. In addition, a further research is needed to study and formulate the strategy to improve agroindustries' bargaining position in facing market. The research should also deal with the formulation of government's supporting roles.

KEY WORDS: agroindustries, financial, regional, distributional, leading

Introduction

In the decade of the 1980s Indonesian economy experienced a different phase with the decade of the 1970s. The rate of economic growth decreased as a result of uncertain fluctuation in the world's economy. To anticipate the fluctuation the Indonesian economy needed to be restructured. Based on that fact, several deregulation packages were introduced. As a result, from the 1980s until 1990, Indonesian economy succeeded to recover. In the period, Indonesian economy grew with the average growth rate of 5.3% per year. As a part of the deregulation policy, domestic sources of income were progressively moved from gas and oil sources to the others, especially to primary sector sources. Primary products were given more attention in order to support their processing for export.

However, primary sectors growth can not be accelerated without considering the close relationships

between farm production, processing and marketing system. Yet, the trend shows that Indonesian agricultural commodities have difficulties to enter international market, because the most of commodities are exported in the form of raw materials. Actually, in international market, the potential demand for this products is quite large, when the commodities are exported in the form of processed products. Therefore, one field of industry which is most suitable to deal with this problem is agroindustries.

The development of agroindustries will absorb the excess of labor supply in farming activities which is caused by the fact that the output elasticity of labor in farm is too small. The needs of good quality input for agroindustries will push farmers to cultivate crops, cattle and fish with the high quality ones, which in turn will increase farm income. Therefore, the linkage between farm and agroindustry as a strong system of agribusiness in turn will give a positive effect to the improvement of farmer income, especially for the farmers whose products are required by agroindustries. The development of agroindustries will also provide employment for rural people to acquire value added.

Some previous researches also show that the development of agroindustrial sectors is very suitable. These sectors can give a better income multiplier for the low-income people (Luthfi, 2003). These sectors are a suitable bridge to connect the transformation process from primary sectors to secondary sectors in such a way so the economic transformation process takes place smoothly (Nasution et al., 1991). In addition, these sectors, especially in small and medium scale ones, are very suitable to be used as income generation instrument for the poor in rural areas (Hayami et al., 1987 and Anwar, 1993).

The situation as described above provides a wider chance for agroindustrial sectors to more actively contribute in national development process. Therefore an identification of which suitable agroindustries to be developed in a particular region is very important.

Research Purposes

The research was carried out for three main purposes. First, the research was purposed to make an inventory of number, type and scale of existing agroindustrial sectors in South Kalimantan Province and to investigate the general performance of these sectors. The second purpose was to determine leading agroindustries based on their classifications.

The benefits of this research are in the form of complete information regarding agroindustries's performance in South Kalimantan Province. This information also reveals five leading agroindustries which are found through a tight selection based on their financial aspects, regional aspects and distributional aspects. In turn, the information will be a very useful

insight for improving the policy of industrialisation and regional development, especially in South Kalimantan Province Indonesia.

The Roles of Agroindustries

Agroindustry is an industry or enterprise that uses or processes agricultural products as raw materials in its production process (Hsu, 1997 and Austin, 1981). Therefore agroindustry has a very close relationships to agriculture. To discuss the roles of agroindustries in regional economic development and in the improvement of income distribution, firstly the focus will be put on to the effects of the industrialisation process on agriculture in the context of the development process. Next, the discussion will lead to elaborating the roles of agroindustries and their importance.

Regarding economic development process, Rostow concludes that there are five stages of economic growth. These stages respectively are traditional society, precondition, take off, driving to maturity and the age of high mass consumption (Rostow, 1960). In the traditional society, agriculture is dominant. If the industrialisation process is conducted inappropriately, distortions will occur and economic transformation from agriculture to industry can not be a smooth process, and therefore the take off stage will fail. In addition, according to Pomfret (1992:61) the import substitution policy seems to be in appropriate. This policy discriminates against agriculture and causes slower growth rates of agricultural sectors as this policy reduces the relative prices of agricultural products.

Both of these facts, the distortion of the economic transformation process and the policy discriminating against agriculture, could end up with a situation in which the economic rate of growth is higher but income equality is worse. The explanation for this situation is as follows. Firstly, distorted economic transformation is unable to utilise resources optimally and tends to create a greater gap between the poor and the rich as the return to capital grows much faster than the return to labor, and the owners of the capital are mainly the rich. Secondly, discriminative policy will reduce the relative prices of agricultural products and therefore decrease price incentives for farmers and this in turn will reduce agricultural output levels as farmers become reluctant to increase their outputs.

This situation shows clearly that the agricultural sector is important as one of the sources of the economic development process and economic growth, and therefore should not be neglected (Pomfret, 1992; Schultz, 1964and Paukert et al., 1981). On the other hand, industrial sectors are needed as industrialisation is the engine of economic growth. The question that then arises is how to combine these two different situations.

Agroindustries provide the answer for this question.

Actually, discussions that deal with agroindustry are very limited. However works and discussions about this type of industry can be traced back to the work of Krokhotkin (1985) which shows a mutual relationships between the Soviet Union and the Hungarian People's Republic in agroindustrial development. This collaboration is based on specialisation and cooperation in the process of production to support particularly food and vegetable industries. This work is then followed by several other agroindustrial related works, but these mostly do not take agroindustrial aspects as the focus of their discussions, rather they only include agroindustry as an aspect of their whole discussions on particular topics. For example Kim and Tareq (1991) mention agroindustry in their social accounting framework and Mizala (2008) includes agroindustry as one of the four sectors discussed in his article about international industrial linkages.

There are several works, however, that are more intensively discussing agroindustry and they come to a similar conclusion that agroindustrial sectors are very important in order to accelerate regional economic development while improving income distribution as well. Overall, the importance of these sectors consists of four major points, which are: serving as a bridge for economic transformation, generating income for the poor, creating some positive externalities for society in general and helping small-scale farmers to survive (Nasution et al., 1991; Hayami et al., 1987; Anwar et al., 1991 and Schejtman, 1994).

Regarding agroindustries as economic transformation, Nasution et al. (1991), present an intensive discussion. In general, they reveal the importance of agroindustries particularly for developing countries like Indonesia. They also argue convincingly that agroindustries can serve the economic development process as an intermediary, to provide a smooth bridge for the structural transformation process going from traditional sectors which are primarily small-scale farms to secondary sectors which are industries and manufacturing. They even suggest that in the case of Indonesia for example, the government should provide a particular agency to promote agroindustrial development.
Agroindustries are also considered as income generators for the poor. The agroindustries, particularly small-scale and medium-scale ones, have effectively provided employment for unskilled labor (Hayami et al., 1987). Underemployed and unemployed labor certainly have more chance to create their incomes through working in agroindustrial sectors. Therefore agroindustries are then very important.

Besides that, agroindustries also have some spill-over effects which positively contribute to the welfare of society. About these effects, Anwar et al. (1991) state their

opinion, which is particularly based on the situation of agroindustries in Indonesia. The opinion supports the development of agroindustries, especially, the rural agroindustries. They find that the rural agroindustrial development is very suitable for sustainable development purposes, due to the fact that rural agroindustries have several positive externalities. These type of industries produce less pollution both in their production processes and in the consumption of their products. They are also lower in terms of resource exploitation, compared to the other types of industries with large economies of scale. Although they produce less return for the capital owners, who are mostly the rich, they do generate a reasonable additional income for the poor.

Finally, agroindustries also contribute quite significantly to enhance the existence of small-scale farms, and therefore prevent poor farmers from being suffered by losing their main income sources. Agroindustries can serve as a special segment of markets where the small-scale farmers can sell their products. More importantly, agroindustries can be the field where the farmers of small-scale farms can extend their businesses by processing their own agricultural products to acquire value added. This is supported by Schejtman (1994). He find that agroindustries are very important especially to support the small scale agriculture to survive.

It is now clear that agroindustries have several positive roles in the regional economic development process and so far the agroindustries seem to be more biased toward the poor and therefore very useful in addressing income inequality problem.

Research Methodology

The research was carried out in South Kalimantan Province Indonesia in 2009. Data were collected using three types of surveys namely general survey, agroindustrial survey and Social Accounting Matrix (SAM) survey.

The general survey was an exploratory survey. It was purposed to make an inventory regarding numbers, types and scales of agroindustrial activities in each district of South Kalimantan Province. Using these data, agroindustrial sectors were then divided into three groups : small-scale agroindustries (workers less than 1o people), medium-scale agroindustries (workers between 10 - 25 people) and large-scale agroindustries (workers more than 25 people). The method of data collection in this survey was the combination between direct observations in the field, interviewing informants and the investigation of previous relevant literatures. This survey output was the inventory of agroindustries in South Kalimantan Province Indonesia. The inventory listed numbers, types and scales of agroindustries. This was then used

as the sampling frame for the next survey, agroindustrial survey.

In the agroindustrial survey, primary and secondary data were collected. Primary data were acquired through direct observations of selected agroindustries in ten districts in South Kalimantan Province Indonesia. The the district were selected as the initial districts in South Kalimantan before some are divided into more districts. These observations were then combined with interviewing the particular employees of the selected agroindustries and the numbers of relevant informants. The interviews were carried out using prepared questionnaires. The selection process of agroindustries was purposively carried out in such a way so each agroindustry in South Kalimantan Province with various scales can be represented. For this survey totally the number of samples were 70 units of agroindustries. The detail of selected agroindustries can be seen in Appendix 1. Meanwhile, the informants were chosen based on their knowledge about the relevant and needed information regarding agroindustries in South Kalimantan Province. The total numbers of informants were 30 people consisted of 3 informants from each selected district in South Kalimantan Province. In addition, secondary data were gathered from relevant publications such as report from particular institutions which were closely connected to the research topic.

The SAM survey also needed primary and secondary data. As in the agroindustrial survey, secondary data were also collected from relevant institutions and publications. The types of secondary data in this survey included the Input-output Table of South Kalimantan Province, the distribution of value added, the distribution of final demand and the total output counted for each production sector in South Kalimantan Province. For primary data, total selected respondents in interview were 700 households, chosen from the whole ten districts selected of South Kalimantan Province. The respondent was chosen purposively as to represent poor and rich households. The poor households were the households of: landless farmers, ordinary farmers (farmers with land less than 2 hectares), lowest-wage non farmer workers (seasonal unskilled labor, labor in informal sectors), and low-wage non farmer workers (unskilled labor, manual labor). The rich households were the households of rich farmers (farmer with land more than 2 hectares), medium-wage non farmer workers (skilled labor, professionals) and rich non farmers (enterprise owners, managers, high-wage labor).

The determination of samples for each districts was proportional, based on the proportion of residents in a district over the total residents of South Kalimantan Province. With this sampling frame hopefully the heterogeneity of social levels in South Kalimantan Province could be represented

well. The details of the sampled households is given in Appendix 2.

The primary data consisted of the distribution of income and expenses of each household as the representation of the various levels of households as described above. This income and expenses were calculated based on sectors, factors and the levels of households.

The method of data analysis used in this research consisted of several steps as follows. In the first step, existing agroindustries were analysed in terms of their advantages in financial aspects. To develop agroindustrial sectors in South Kalimantan Province, it is important to choose some better agroindustries which are profitable as well as feasible. This analysis was using Internal Rate of Return (IRR) and Revenue Cost Ratio when determining the capabilities of agroindustries in terms of financial aspects. As a result there will be some economic incentives for people to carry them out as their business.

Having the first step proceeded, the agroindustries were then ranked based on their regional aspects. Ten agroindustries were selected to be verified further in relation to their regional aspects. This analysis used the method of economic base which counting location quotient and relative efficiency of various agroindustries in a certain district, relative to the provincial and national levels. This analysis also included linkage analysis and the analysis to determine export potential of agroindustries using the upgraded Regional Input-output Table of South Kalimantan Province.

The next step was analysing the agroindustries's capabilities in the creation of additional income for the poor and the lower level of societies. The capabilities is very important for improving income distribution in South Kalimantan Province Indonesia. This analysis included the development of macro models and then based on the models income multiplier analysis was carried out. The macro models were the Regional Input-output Table and Regional Social Accounting Matrix for South Kalimantan Province Indonesia, counted for the year of 2008.

The General Performance of Agroindustries in South Kalimantan Province

The industrial development in Indonesia is carried out gradually, which in long term is purposed to achieve a balanced economic structure between industry and agriculture. In South Kalimantan Province the growth rates of industrial sectors are continuously increasing. Based on the data gathered in this research, in South Kalimantan Province there are 17,881 units of agroindustries, which consist of 29 types of activities (Appendix 3) distributed within 10 districts of South Kalimantan Province. The distribution of types, units and locations of agroindustries

completely for South Kalimantan Province can be seen in Appendix 4.

Appendix 4 shows that in HSS district, there are 6,898 units agroindustries which consist of 19 types. The district is located more or less in the central area of South Kalimantan Province. This location could be spatially more profitable as a regional growth pole, due to the fact that agricultural products needed as raw materials for agroindustries, are produced in evenly distributed areas of South Kalimantan Province.

BJM as the capital city has only 52 units of 19 types of agroindustries. This number is the smallest among all districts in South Kalimantan Province. This situation is an indicator of that the roles of agricultural product processing in the regional economy of BJM, have been replaced by the rapid growth of trade and other industrial sectors, other than agroindustries.

In terms of the scales of agroindustries, mostly agroindustries are large scales (15,907 units). Medium scale and small scale agroindustries are respectively only 1,445 and 529 units. Small-scale agroindustries are mostly located in the district of HSU, the northern border area of South Kalimantan Province. Agroindustries in this district are mostly in the field of bamboo processing. Meanwhile, the majorities of large scale agroindustries are located in the district of HSS. In detail, the distribution of agroindustrial units based on district and scale can be seen in Appendix 5.

The description above provides general information regarding agroindustries in South Kalimantan Province. Besides this information, the collected data is also proceeded further in order to classify agroindustries based on their financial aspects (profit and feasibility), regional aspects (economic base, linkage, and export potential) and also distributional aspects (income multiplier).

The Determination of Leading Agroindustries

Using different criteria to determine leading agroindustries give different results. Therefore after analysing agroindustries based separately on their financial, regional and distributional aspects, leading agroindustries are then needed to be determined using combination of the three aspects together. For this purpose, scoring system has been applied. Each type of agroindustry is put in order according to their ranks in a certain aspects. The higher the ranks of a certain agroindustry, the more important the agroindustry is. This is the principle to determine leading agroindustries. The result of data processing based on this method is given as in Appendix 6.

As shown in Appendix 6, the highest rank of leading agroindustries is coconut oil industry with total score of 7.0. The next rank is coffee powder

industry with 13.5 and this then followed by brown sugar industry with 14.5. After that salted fish industry and coconut cake industry follow with their total scores respectively 15.5 and 21.5. These are the five leading agroindustries, which are more important compared to the other existing agroindustries in South Kalimantan Province. These agroindustries are strongly recommended to be developed further as they are staying at the higher ranks in terms of their financial, regional and distributional aspects.

As South Kalimantan Province have ten districts, the question that arise then is where to develop these agroindustries. To deal with this question Appendix 9 provides the answer. Appendix 9 gives appropriates locations for particular agroindustries based on their location quotients (LQs) and relative efficiencies (REs).

To develop coconut oil industry, a location can certainly be determined as the central of development, which is HSS district. This is due to the fact that in this area both LQ and RE for coconut oil industry are the highest. Similarly, the development of brown sugar industry can also surely be centralised in BJR as for this district both LQ and RE are the highest. However, some supports are needed in order to enable this industry to gain a wider market share, especially in the form of capital and technological supports. This is also the case of coconut cake industry. The highest LQ and RE are located in the same area, HSS. Therefore, this district is certainly suitable to be a central area for developing this type of agroindustries.

Meanwhile, for coffee powder industry, two alternatives of districts are available to be the central location of development. Based on the highest LQ, HST should be chosen. This highest LQ implies that HST is a primary supplier for coffee powder and has already had a good market share for this product. However, if the choice is based on RE, it seems that coffee powder industry in HST is not as efficient as coffee powder industry in BJR. Therefore the recommendation to accommodate these two opposite situations is to chose HST as the centre of development while also improving the efficiency of production process in this area.

Finally, for the development of salted fish industry, a problem arises as the highest LQ and RE are not located in the same district. The highest LQ is in BTL whereas the highest RE is in KTB. However, based on the existing condition in terms of the distribution of agroindustries, access to raw materials, and facilities for marketing, KTB seems to be more preferable than BTL. KTB district is an area surrounded by the sea, which is advantageous to support the development of salted fish industry, because the raw materials will greatly be available as well as be easily accessible in this area. Furthermore, the sea transportation will support much the marketing process of this product.

Conclusion and Suggestion

In ten districts of South Kalimantan Province Indonesia, the majorities of agroindustries are large scale agroindustries. There are totally 17,881 units agroindustries consisting of 29 types. From this number, 529 units are small scale agroindustries, 1,445 units are medium scale agroindustries and 15,907 units are large scale agroindustries.

Based on the research, the leading agroindustries of South Kalimantan Province are coconut oil industry, coffee powder industry , brown sugar industry, salted fish industry and coconut cake industry. These agroindustries are leading as they have the highest ranks in terms of their financial, regional and distributional aspects. Meanwhile, appropriate districts as the central locations, where these agroindustries should be developed, are HSS for coconut oil and coconut cake industry, HST for coffee powder industry , BJR for brown sugar industry and KTB for salted fish industry.

In addition, a further research is needed to study and formulate the strategy for developing these leading agroindustries in macro regional economic framework, especially in relation to the pattern of cooperation between agroindustries to improve their bargaining position in facing the market. The research should also deal with the formulation of supporting roles that government should apply in order to support the development of agroindustries.

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Appendix 1. The Units of Agroindustries Selected based on District and Scale

No	District (Initial)	Scale			Total
		Small	Medium	Large	
1	Batola (BTL)	0	2	0	2
2	Banjar (BJR)	5	0	1	6
3	Tanah Laut (TAL)	0	1	4	5
4	Tapin (TPN)	0	0	4	4
5	Hulu Sungai Selatan (HSS)	0	1	15	16
6	Hulu Sungai Tengah (HST)	0	1	10	11
7	Hulu Sungai Utara (HSU)	1	1	13	15
8	Tabalong (TBL)	1	1	4	6
9	Kotabaru (KTB)	0	2	0	2
10	Banjarmasin (BJM)	0	0	3	3
	Total	7	9	54	70

Appendix 2. The Distribution of Selected Households

No	District	Population	Total Samples	Sample distribution among household levels						
				The poor				The rich		
				1	2	3	4	5	6	7
1	BTL	232124	60	15	9	9	9	9	9	2
2	BJR	464162	119	18	24	17	25	9	9	17
3	TAL	198637	51	22	7	4	4	5	5	4
4	TPN	133600	34	5	5	5	11	2	5	2
5	HSS	190365	49	10	9	7	5	11	4	3
6	HST	228258	58	8	8	9	8	8	14	2
7	HSU	283539	73	4	4	16	14	5	19	10
8	TAB	165089	42	8	15	4	5	4	4	2
9	KTB	338047	87	13	11	8	24	7	14	10
10	BJM	495887	127	2	4	34	33	2	18	34
	Total	2729708	700	105	96	112	138	62	101	86

Household levels :
1= landless farmer
2= ordinary farmer (farmer with land less than 2 hectares)
3= rich farmer (farmer with land more than 2 hectares)
4= lowest-wage non farmer worker (seasonal unskilled labor, labor in informal sectors)
5= low wage non farmer worker (unskilled labour, manual labor)
6= medium wage non farmer worker (skilled labor, professionals)
7= rich non farmer (enterprise owners, managers, high wage labor)

Appendix 3. The Types of Agroindustries in South Kalimantan Province

No	Types
1	Soy sauce industry
2	Fish paste industry
3	Soy bean industry
4	Herb medicine industry
5	Coffee powder industry
6	Acid industry
7	Tea industry
8	Nut industry
9	Fish chip industry
10	Grape and honey industry
11	Salted fish industry
12	Dry and wet cake industry
13	Banana industry
14	Fruit industry
15	Wheat and Rice flour industry
16	Noodle industry
17	Brown sugar industry
18	Fish flour industry
19	Dried cassava industry
20	Shrimp paste industry
21	Coconut oil industry
22	Coconut cake industry
23	Cold powder industry
24	Bamboo industry
25	*Purun* industry
26	Coconut handcraft industry
27	Rice mill industry
28	Meat industry
29	Rubber industry

Appendix 4. The Distribution of Types, Units and Locations of Agroindustries

No	Districts	Agroindustries	
		Types	Units
1	BTL	9	57
2	BJR	14	219
3	TAL	15	1258
4	TPN	18	1287
5	HSS	19	6898
6	HST	16	2750
7	HSU	13	3766
8	TAB	13	1207
9	KTB	15	387
10	BJM	11	52
	Total	143	17881

Appendix 5. The Distribution of Agroindustries Based on Scales and Districts

No	Districts	Scales			Total
		Small	Medium	Large	
1	BTL	19	1	37	57
2	BJR	26	16	177	219
3	TAL	58	277	923	1258
4	TPN	29	102	1156	1287
5	HSS	35	242	6621	6898
6	HST	11	131	2608	2750
7	HSU	124	305	3337	3766
8	TAB	113	172	922	1207
9	KTB	89	192	106	387
10	BJM	25	7	20	52
	Total	529	1445	15907	17881

Appendix 6. The Score for the Determination of Leading Agroindustries

No	Types	Aspects				Total
		Finan-cial	Regional		Distribu-tiona	
			Linkages	Export		
1	Coconut oil industry	1.0	3.5	1.5	1.0	7.0
2	Coffee powder industry	2.0	1.5	5.0	5.0	13.5
3	Brown sugar industry	7.0	3.5	1.5	2.0	14.5
4	Salted fish industry	8.0	1.5	3.0	3.0	15.5
5	Coconut cake industry	5.0	8.5	4.0	4.0	21.5
6	Fish chip industry	3.0	5.5	8.0	6.0	22.5
7	Nut industry	4.0	5.5	8.0	10.0	27.5
8	Wheat and rice flour industry	6.0	10.0	8.0	7.0	31.0
9	Fruit industry	9.0	7.0	6.0	9.0	31.0
10	Bamboo industry	10.0	8.5	10.0	8.0	36.5

Appendix 7. The Locations of the Highest LQs and REs of Agroindustries in South Kalimantan Province

No	Types	Locations of the highest	
		LQ	RE
1	Coconut oil industry	HSS	HSS
2	Coffee powder industry	HST	BJR
3	Fish chip industry	KTB	KTB
4	Nut industry	HST	HST
5	Coconut cake industry	HSS	HSS
6	Wheat and rice flour industry	BJM	BJR
7	Brown sugar industry	BJR	BJR
8	Salted fish industry	BTL	KTB
9	Fruit industry	BJR	BJR
10	Bamboo industry	HSU	HSU