SELECTION OF COMPETITIVE COMMODITIES AND DEVELOPMENT CLUSTER AGROINDUSTRY PLANTATION SUB SECTOR IN STRENGTHENING REGIONAL INNOVATION SYSTEM IN SOUTH SUMATERA USING AHP AND SWOT ANALYSIS APPROACH

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ABSTRACTS

Government in an effort to increase global competitiveness make a plan through RPJPN document (2005-2025) which implies a gradual transformation to develop a competitive economy through such basic principles: sustainable management, increase national productivity through the acquisition, deployment, implementation, and creation (innovation) science and technology according to its competence and excellence area. Thus, the challenge is an effort to improve competitiveness through the development and implementation of the system of innovation (innovation driven economy). National innovation system (SINAS) consists of the support of some of the regional innovation system (SIDA) to form industrial clusters based on thematic areas featured. South Sumatra Province in the establishment of industrial clusters based commodities in the regions is based on the results of the deliberations of local government without the support of educational approaches undertaken in determining the thematic featured. The development of industrial clusters can be used as a starting point area that can facilitate the development of regional innovation actors in taking steps in advancing the strategic policy areas. Thus this study aims to determine the commodity and superior product made with an academic approach to the draft in order to have acceptable properties and operations. In this study the determination of commodity and superior product made by a scientific approach using AHP and SWOT. Results from this study is the flagship product of coffee, rubber and palm oil commodities based priority areas that have good industrial value chain to be developed by the actors of innovation in formulating policies and programs to support the regional superior products based commodities that are competitive nationally and globally.

Keywords : Competitiveness, Innovation Actors, Science And Technology, SINAS, SIDA, Value Chain, AHP, SWOT

INTRODUCTION

The process of determining commodity based industry clusters in the regions is based on the results of the deliberations of local government without the support of educational approaches undertaken in determining the thematic featured . The development of industrial clusters can be used as supporting area that can facilitate the development of regional innovation actors in taking steps in advancing the strategic policy areas . National innovation system policy direction document RPJPN 2010-2025 and 2005-2025 directed that in transforming the economy of which is based on the comparative advantage of natural

resource based economy to a competitive advantage to do with the basic principles of managing the national productivity improvement through innovation . It requires perspective and act systemically and systematically in the National Innovation System (SIN) (BPPT, 2012). The concept of a triple helix dynamic knowledge flow relationship between the three actors of innovation that is U - Universities , I - Industry , and G - Government as an institution of stakeholders that support the success of the innovation system (Henry Etzkowitz, 2008). The process of determining commodity based industry clusters in the regions is based on the results of the deliberations of local government without the support of educational approaches undertaken in determining the thematic featured . The development of industrial clusters can be used as a landing area that can facilitate the development of regional innovation actors in taking steps in advancing the strategic policy areas.

This study aims to determine the commodities featured area is done by academic approach the draft in order to have acceptable properties and operations (Ciptomulyono, 2010). Decision making MCDM is a method of alternative electtion process decisions consider with objective criteria or more than one who is in a situation which is contrary (conflicting). MCDM approach made the choice because of the ability of this method in the decision on the selection if the process is more than one decision maker where every decision has a conflict between the criteria or objective in the selection of superior products. One of MCDM method used in this paper is AHP (Analytical Hierarchy Process). AHP method is to decompose complex decision problem becomes structured in a simpler form hierarchically. This approach was developed on the basis of the theory of preference measurement by performing pairwise comparisons for all the decision criteria are both quantitatively and qualitatively. AHP method use 10 expert respondent who are representative of triple helix. In addition it is also used Value Chain Analysis approach to determine the value chain of the leading commodity into a superior product selected in the framework of the strengthening of SIDA in the province of South Sumatra. To make local government policies and programs that support superior product selected is done with SWOT analysis approach.

METHODOLOGY

This study conducted several stages as follows :

1. Determine the leading commodity approach LQ (Location Quotient) Method. LQ method used to define the sector or commodity that has a good potential to be developed in the region with a view density ertentu business sector in a region compared to the same sector in the aggregate.

2. Gives weighting to the criteria and sub-criteria approach AHP.
    Graphically , the problem can be constructed as a decision diagram AHP -rise , which began with the target , then the criteria , and alternatives. The working principle of AHP is a simplification of a complex persolan unstructured , strategic and dynamic into its parts , and arrange in a hierarchy. Then the level of importance of each variable given a numeric value subjectively about the significance of these variables are relatively compared to other variables . From the various considerations do then do the synthesis to define a variable that has a high priority and serves to affect the outcome of the system (Saaty, 2000). This study using purposive sampling technique samples taken by way of interviews and questionnaires to the respondents experts representing actors of innovation that consists of 3 people from academia , 3 people from the business , and 4 from the government who in accordance with the research needs.

3. Determining third leading commodity with priority matrix. weights derived from the method ahp multiplied by the value of the priority of an expert assessment thus been three commodities which have the highest priority value.

4. Do a search tree industry for 3 leading commodity with value chain analysis. The value chain approach is done with a view of the capacity and capability of the region to establish a value chain towards superior products that have been determined by two kativitas values: main and supporting activities (Porters, 1994).

5. Perform swot analysis to determine strategies that can be performed by actors of innovation by strengthening the criteria SIDA and commodities in the regions of South Sumatera. SWOT analysis is to identify the various factors systematically to formulate a strategy . This analysis is based on the logic that maximizes Strength (S) and Opportunities (O) but simultaneously to minimize Weakness (W) and Threats (T) . Strategic decision making process is always associated with the development of the mission , objectives and policies of the organization / company. The fourth factor is made into a matrix contain S-0, S-T, W-O and W-T strategies depends on solution for problem that become input this matrix, researchers can take the strategy resulting from this matrix (Rangkuti, 2002)

RESULTS AND DISCUSSION

The result of the calculation LQ as follows :

Table 1. Selected Commodities Approach Based on LQ

No.	Competitive Commodities
1	Vegetables
2	Holticulture
3	Panili
4	Chocolate
5	Coconut
6	Palm Oil
7	Cinnamon
8	Gambir
9	Pepper
10	Clove
11	Tobacco
12	Sugar palm
13	Kapok
14	Arecca nut
15	Cane
16	Coffee
17	Rubber
18	Candlenut
19	Rice
20	Nilam
21	Fishery
22	Livestock
23	Forestry

Source : LQ Approach, Data Processed

Based on literature and judgement experts, there are 7 main criteria and 24 sub criteria which are important for selecting potential commodities of South Sumatera. Pair wise comparison are performed for the main and sub-criteria numbers, in order to determine weight factors that will be used in priority matrix calculation.

Table 2. Weighting of Main Criteria And Sub-Criteria used AHP

Criteria	Sub-Criteria	AHP Weight
Raw Material **(0,147)**	Supply Of Raw Material (W1)	0,403
	The Quality And Quantity(W2)	0,242
	Local Content(W3)	0,210
	Price(W4)	0,144
Human Resource **(0,135)**	Availability Of Labor(W5)	0,347
	Availability Of Facilities(W6)	0,177
	Ability Skill(W7)	0,476
Market Access **(0,180)**	The Level Of Demand For The Product(W8)	0,307
	Access & Network Marketing(W9)	0,378
	The Level Of Product Sale(W10)	0,315
Technology And Innovation **(0,144)**	Local Technology(W15)	0,146
	Diversification(W16)	0,132
	Visionary(W17)	0,165
	Support R & D(W18)	0,197
	Intensity Technology(W19)	0,228
	Environmental Management (W20)	0,132
Social Capital And Institutional **(0,075)**	Society Support . & NGO(W21)	0,370
	Local Government Support(W22)	0,630
Contribution To The Economy **(0,107)**	Contribution To The Economy(W23)	0,254
	Increased Income And Employment(W24)	0,746

Source : Expert Choice 11 AHP Weight Score

The weight of each sub- criterion is multiplied by the value of the respondents' rating of experts in order to obtain a score as follows :

Table 3. Recapitulation Determination of Main Commodities

No.	Competitive Commodities	Respondents Prority Values							ẋ (mean)
		1	2	3	4	5	6	7	
1	Vegetables	4,25	4,23	4,25	3,86	4,06	3,76	4,15	4,08
2	Holticulture	4,35	4,33	4,35	4,09	4,44	4,05	4,22	4,26
3	Panili	4,14	4,12	4,14	4,01	4,03	3,96	4,09	4,07
4	Chocolate	4,12	3,86	4,09	3,64	3,76	3,77	4,26	3,93
5	Coconut	4,19	4,17	4,19	4,07	4,08	3,97	4,09	4,11
6	Palm Oil	4,55	4,52	4,52	4,40	4,41	4,06	4,68	4,45
7	Cinnamon	4,12	4,11	4,12	3,73	4,02	3,64	4,02	3,97
8	Gambir	3,98	4,00	4,02	4,14	4,16	4,05	3,96	4,04
9	Pepper	4,03	4,05	4,07	3,94	3,96	3,85	3,93	3,98
10	Clove	4,03	4,05	4,07	3,94	3,96	3,85	3,96	3,98
11	Tobacco	3,93	3,95	3,97	3,84	3,86	3,74	3,86	3,88
12	Sugar palm	3,93	3,95	3,97	3,84	3,86	3,74	3,86	3,88
13	Kapok	3,94	3,96	3,98	3,85	3,87	3,76	3,87	3,89
14	Arecca nut	3,98	4,00	4,02	3,89	3,91	3,80	3,91	3,93
15	Cane	3,91	3,93	3,95	3,82	3,84	3,73	3,84	3,86
16	Coffee	4,74	4,64	4,66	4,48	4,15	4,50	4,62	4,54
17	Rubber	4,44	4,50	4,60	4,52	4,42	4,31	4,63	4,49
18	Candlenut	3,87	3,85	3,87	3,74	3,76	3,65	3,76	3,79
19	Rice	4,06	4,04	4,06	3,93	3,95	3,84	3,95	3,98
20	Nilam	4,00	3,98	4,00	3,88	3,89	3,78	3,90	3,92
21	Fishery	3,97	3,95	3,99	3,86	3,88	4,52	3,84	4,00
22	Livestock	3,93	3,91	3,93	3,80	3,82	3,71	3,82	3,84
23	Forestry	4,00	3,98	4,02	3,89	3,91	3,80	3,87	3,93

Source : Excel 2010, Data Processed

This study found that selected to three commodities; namely coffee , rubber and palm oil in accordance with the initial conditions of the region of South Sumatera. However, the products produced from these products is still very little. The third of these commodities should be developed in order to form the downstream sector of the commodity-based industry clusters add value to products and producers. Therefore government, academia, and business (innovation actors/triple helix) can work together to make downstream by the leading commodity. Based on SWOT analysis recommending strategies such as strategy for coffee is making infrastructure research and development , innovation centers as well as commodity-based SME Center, setting up institutions that can be facilitators for the business world and academia to the needs of technology and product innovation. rubber commodity strategy was to establish a rubber product hilirisari one tire factory in the port area of Southern Sumatra. strategies for palm oil is integrating with swamp buffaloes and environmentally friendly farm management. This study also proposed that the infrastructure that accommodates the needs of every actor innovation about need technology and product innovation based on commodities.

CONCLUSIONS AND RECOMMENDATIONS

Based on the result of all research process elected three leading commodities , namely coffee (4,54) , rubber (4,49) , and palm oil (4,45). Industrial value chain to be developed by the actors of innovation in formulating policies and programs to support the regional superior products based commodities elected that are competitive nationally and globally.

AHP approach find that weight each main criteria are raw materials (14.7 %) , human resources (13.5 %) , market access (18 %) , infrastructure (21.3 %) , technology and innovation (14.4 %) , social capital (7.5 %) , and the contribution to the economy (10.7 %). Infrastructure and market access needs to be more antention to triple helix actors. Therefore, South of Sumatera Province must have Innovation Center/IKM Center to accommodate low of infrastructure and network market access.

This research only focus on to the plantation sub-sector so that in future studies to do research on other sub- sectors which are considered potential match regional needs.

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