

# Location Quotient Analysis in Superior Product Determination in Several Sectors in Bangkalan Regency

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**Abstract.** To encourage the growth of a local economy based on superior products in Bangkalan district, it is necessary to do an analysis in the sectors of agriculture, plantation, fisheries, livestock and other sectors that can leverage the local economy. The determination of recommended superior products is expected to be the basis of local economic development and as a policy base in encouraging the development of these products in Bangkalan Regency. The analytical tool used in this study was Location Quotient (LQ). The results of the analysis showed that for each sector in the Bangkalan area were as follows, for the food crop sector for an average of LQ was 1.04, the average LQ Horticulture crop was 2.54, the average LQ plantation sector was 4.22, for the LQ Livestock Sector The average was 1.98, while the average LQ Fisheries Sector was 1.68, with the results of the FGD it could be formulated that Corn, Snake Fruit, Coconut, Beef Cattle and Milkfish were superior products in Bangkalan Regency. Therefore, it requires design and engineering of the Regency Superior Product – Based Agropolitan Model that is oriented towards regional development as well as economic growth acceleration of the people in Bangkalan Regency, which combines the use of space and resources functionally between various sectors to encourage strategic-potential economic sectors to achieve balanced, long-lasting and sustainable regional growth.

**Keywords:** LQ model, policy, superior and engineering

## 1 INTRODUCTION

The implementation of economic development can be applied to the concept of Regency Superior Products, which is the concept where one district has a superior product. Regency superior product is based on the development of regency superior commodities which are expected to encourage and accelerate economic growth and improve people's welfare. Bangkalan Regency is one of the regencies with the Human Development Index (HDI) of 62.3. By looking at the development of HDI figures for the past five years, the achievements of human development progress in Bangkalan Regency does not seem to be too significant. Bangkalan HDI figures from 2013 amounted to 60.19 gradually increasing, and most recently in 2017 amounted to 62.30. In five years it only increased 2.11. (Bangkalan in 2018), however, in

essence the area has abundant natural resource potential that has not been optimized, hence it results in dependency with other regions. The impact is that the regency is less developed than other regions in the vicinity.

**Table 1.**

No	Business Field	2015	2016	2017
1	Agriculture, Forestry, Fisheries	4.897,60	5.262,50	5,457.0
2	Mining and Excavation	4.924.5	4.313.2	4.708.2
3	Electricity and Gas Procurement	6,9	7,4	8,8
4	Water Supply, Waste Management	15,5	17,9	19,1
5	Construction	2,326.7	2.774.5	3.019,50
6	Wholesale Trade, Retail and Car Repair	2,726,2	3.060,0	3.371,10
7	Transportation and Warehousing	255,8	279.5	309.1
8	Provision of Accommodation and Food	202,8	231	258,5
9	Information and Finance	806.1	893.3	977,4
10	Other Services	132.8	141	150,9

Contributions of Bangkalan's GRDP at Current Prices According to Business Field (Billion Rupiah), 2015 -2017.

Source: GRDP, Bangkalan Regency, 2018

From table 1 it can be seen that agriculture, forestry and fisheries have the largest contributions in the economy of Bangkalan district and are superior products. The selection of superior products is expected that all efforts and development planning, including investment will be carried out in a focused manner to increase sustainable production activities from upstream to downstream. Thus, the development of superior products can be achieved if basic assumptions are met, namely the existence of synergy between various actors, sectors and their supporters. The synergy between the various actors, sectors and their supporters will result in various supply chain economic activities that are interrelated and encourage the development of (underdeveloped) regional economic activities as a whole. All actors (government, community and business world) feel involved and support the efforts to develop regency superior products according to the duties, roles and functions of each actor.

Gross Regional Domestic Product (GRDP) is an illustration of an area's ability to manage natural resources and human resources owned. This can be seen from the added value that can be created by various economic activities in the area. In 2017, the value of Bangkalan's GRDP reached around 21.67 trillion rupiah. This value increased by 7.65 percent compared to the previous year. Based on 2010 constant prices, the value of the Bangkalan GRDP in 2017 reached 17.62 trillion rupiah, an increase of 3.52 percent from the previous year.

In order to optimize the potential of natural resources in Bangkalan Regency, a formulation and planning of regional superior product - based development program is needed. So far, Bangkalan Regency does not yet have a Regency Superior Product Development

Master Plan. Therefore this upcoming activity is to formulate the development of superior products in Bangkalan Regency. The results of the formulation will be used as guidance in determining the regency superior product programs with all its limitations. In addition, the results of the formulation will be used as material for the implementation of regency economic development through a demonstration plot / pilot in the implementation of the results of the formulation.

According to the National Development Planning Agency (2018) an area is classified as an Underdeveloped Region if it meets the calculation of 6 (six) basic criteria: community economy, human resources, infrastructure, local financial capacity (fiscal gap), accessibility and regional characteristics, and based on regencies that are located in the border area between countries and small islands, disaster-prone areas, and conflict-prone areas. These six criteria are processed using 2017 Village Potential data and 2017 National Socio-Economic Survey and 2018 Regency Finance data from the Ministry of Finance so that every year the development of underdeveloped areas which has been alleviated by the Ministry of Underdeveloped Regions can be identified.

The smallest unit of underdeveloped area used on a national scale is the Regency administration area. This is in accordance with the authority of regional autonomy which is fully granted to the Regency government. Thus in a simple sense of Underdeveloped Regions are regencies that are relatively less developed compared to other regions on a national scale, and whose population is relatively underdeveloped.

The causes of an area to be less developed compared to other regions are: (1) Geographical Factors. Geographically, underdeveloped areas are relatively difficult to reach because of their remote location in the interior, hills / mountains, islands, coast and remote islands or due to other geomorphological factors, making them difficult to reach by networks, both transportation and communication media. (2) Natural Resource Factors. Some underdeveloped areas do not have the potential for natural resources, areas that have large natural resources but the surrounding environment is a protected or cannot be exploited area, and regions are underdeveloped due to excessive use of natural resources. (3) Human Resource Factors. In general, communities in underdeveloped areas have relatively low levels of education, knowledge, and skills as well as underdeveloped customary institutions. (4) Infrastructure and Facilities Factors. Limited infrastructure and means of communication, transportation, clean water, irrigation, health, education, and other services that cause communities in these underdeveloped areas to experience difficulties in carrying out economic and social activities. (5) Natural Factors and Social Conditions, namely Disaster Prone Areas and Social Conflict. Often an area experiencing natural disasters and social conflicts can cause disruption of social and economic development activities. (6) Development Policy Factors. An underdeveloped region can be caused by a number of inappropriate policies such as lacking in favor of the development of underdeveloped areas, approach and development priority errors, and not involving the customary institutions in planning and development [1].

Considering the condition of the complexity of underdeveloped areas, the concepts and policies of developing underdeveloped regions are different from the development in poverty reduction. Development of underdeveloped areas not only covers economic aspects, but also social, cultural, and security aspects (even concerning the relationship between underdeveloped areas and developed areas). It is necessary to have planned efforts to transform an area inhabited by communities with various socioeconomic problems and physical limitations, into an advanced region with a community whose quality of life is the same or not far behind compared to other Indonesian people. Development policies of underdeveloped regions in the medium term are directed at accelerating regional development. The development policies of

underdeveloped regions in the medium term are directed to accelerate the development of underdeveloped regions in a focused, measured and integrated manner that is supported by the intensity of coordination among national development actors [2].

In the direction of the National Strategy for Underdeveloped Regions, the increase and acceleration of economic growth to elevate the prosperity of the community in underdeveloped areas is realized, one of which is through the development of Regency Superior Products. Regency Superior Products is a concept where one region has a superior product. The Regency Superior Products concept is the adoption and development of the concept of OTOP (One Tambon One Product) in Thailand, OVOP (One Village One Product) in Japan, and SAKA-SAKTI (Satu Kabupaten Satu Kompetensi Inti / One District One Core Competency) that has been developed in Indonesia. Regency Superior Products are intended as a dweller to increase regency production capacity which further increases community income and employment opportunities. By selecting a product as a regency superior product, all development and investment efforts are focused on encouraging increased product activities from upstream to downstream in a supply chain system [3].

## **2 RESEARCH METHODOLOGY**

The Location Quotient (LQ) method was used in the design and approach method, assessment as well as process for finding superior commodities in Bangkalan Regency. LQ as a base sector analysis is a method for calculating the relative comparison of the contribution of a sector's added value in a region (Regency / City) to the contribution of a sector's added value on a provincial or national scale.

The LQ formulation used is:

$$LQ = (P_i/P_j)/(P_i/P_j)$$

Where:

LQ= Location Quotient

$P_i$  = GRDP or employment opportunity in sector  $i$  in Bangkalan Regency

$P_j$  = GRDP or total employment opportunities, in Bangkalan Regency

$P_i$  = GRDP or sector  $i$  employment opportunity, in East Java Province.

If the calculation result shows that  $LQ > 1$  means that it is a base sector and has the potential to be developed, while  $LQ < 1$  means it is not a base sector.

## **3 RESULT OF DISCUSSION**

Bangkalan is one of the westernmost regencies in the Madura islands. Madura Island is a part of East Java Province which is separated from other regencies included in East Java Province. Bangkalan as part of the Surabaya Metropolitan Area (SMA) city belongs to the category of the city of Order IIIa which has provisions as an area that can serve residents with a capacity of 150,000-500,000 inhabitants. Bangkalan City is one of the regency-scale regional centers of activity in the Gerbang Kertosusilo regional development unit added to the core of the regional development unit in Surabaya. As a potential area for on-farm activities, the determination of superior commodities in Bangkalan Regency is the first step towards agricultural development which is based on the concept of efficiency to achieve comparative

and competitive advantage in facing trade globalization. Steps to efficiency can be taken by using commodities that have a comparative advantage. The development of superior commodity-based regions is expected to spur the growth of an area that will ultimately increase community income. This research has a direction to identify the existing conditions of agricultural potential in Bangkalan Regency and subsequently a selection is conducted so as to bring up superior commodities perceptually by stakeholders.

Analysis of the determination of per sector basis / superior product in Bangkalan Regency is done by using Location Quotient (LQ) Analysis, that is by comparing production at the district level with production at the regency level referring to Bangkalan Regency data in Figures published by Central Bureau of Statistics of Bangkalan Regency in 2018 , which aims to find out the base sector in Bangkalan Regency. The determination of superior products appears in the classification of LQ values

**Table 2**

NO	Production Per Sector in Bangkalan Regency	Average LQ Results
1	Crops	1,04
2	Horticultural Plants	2,54
3	Plantation Sector	4,22
4	Livestock Sector	1.98
5	Fishery Sector	1,68

LQ results for the whole Bangkalan area

**Table 3**

No.	Superior Products of the Agricultural Sector Bangkalan Regency
<b>Food Crops &amp; Horticulture Subsector</b>	
1	Rice Plants
2	Corn
3	Soy
4	Groundnut
5	Cassava
6	Mango
7	Banana
8	Snake Fruit
9	Gnetum
10	Jasmine
<b>Plantation Subsector</b>	

11	Coconut
12	Kapok / Java Cotton
13	Cashew
14	Cane
<b>Livestock Subsector</b>	
15	Beef Cattle
16	Buffalo
17	Goat
18	Sheep
19	Kampong Chicken / Free-Range Chicken
<b>Fishery Subsector</b>	
20	Shrimp
21	Squid
22	Milkfish

Long List of Superior Products of the Agricultural Sector  
**Bangkalan Regency**  
**Source : Result of Analysis (2019).**

Table 3, shows that superior products that are feasible to be developed in Bangkalan Regency in the agricultural sector along with its sub-sectors are 22 commodities. After knowing the long list of superior products that are worth developing, a short list of superior products that are feasible to be developed is obtained from a Revelead Competitive Advantage analysis based on a) The public involved from upstream to downstream supply chains, so as to absorb very high labor force; b). The potential of local resources and technology for development owned (comparative advantage); c). Owned market opportunity; d). The aspirations of the Regency Government and Actors; and e). Specificity and uniqueness (competitive advantage). Revelead Competitive Advantage analysis is done by using certain criteria to determine whether a superior product is feasible to be developed or can be said to be a superior product. Then certain criteria are given a score (scoring). Determination of superior products in this way is known as scoring technique. This scoring technique will help in determining a commodity / superior economic potential.

Based on the above criteria, comparative assessment can be carried out as shown in table 4.

**Table 4**

No.	Commodity	Criteria					Total	Remarks
		1	2	3	4	5		
<b>Food Crops &amp; Horticulture Subsector</b>								
1	Rice Plants	1	1	0	1	-1	2	+
2	Corn	1	1	1	1	1	4	+
3	Soy	-1	0	0	0	-1	-2	-
4	Groundnut	0	0	0	0	0	0	-

5	Cassava	1	1	0	0	0	2	+
6	Mango	1	1	0	0	0	2	+
7	Banana	-1	1	0	0	1	1	+
8	Snake Fruit	-1	1	1	1	1	3	+
9	Gnetum	-1	0	0	-1	-1	-3	-
10	Jasmine	-1	1	0	0	0	0	-
<b>Plantation Subsector</b>								
11	Coconut	1	1	1	1	1	5	+
12	Kapok / Java Cotton	-1	0	-1	-1	-1	-4	-
13	Cashew	-1	1	0	0	1	-1	-
14	Cane	-1	0	0	-1	-1	-3	-
<b>Livestock Subsector</b>								
15	Beef Cattle	1	1	1	1	1	5	+
16	Buffalo	0	0	-1	-1	-1	-3	-
17	Goat	1	0	0	0	-1	0	-
18	Sheep	-1	-1	0	-1	-1	-4	-
19	Kampong Chicken / Free-Range Chicken	0	1	1	-1	0	1	+
<b>Fishery Subsector</b>								
20	Shrimp	0	0	1	1	-1	1	+
21	Squid	0	1	1	1	-1	2	+
22	Milkfish	1	0	0	1	-1	1	+

. Recapitulation of Scoring Criteria for Superior Product Determination  
Agricultural Sector in Bangkalan Regency

**Source : Result of Analysis (2019).**

The next step is a Focus Group Discussion (FGD) involving relevant Regional Work Unit, communities, business actors, community leaders and other stakeholders. This Focus Group Discussion (FGD) was conducted to get an understanding between the Regional Work Unit, the communities, business actors, community leaders and other relevant stakeholders. Based on the Focus Group Discussion (FGD), it can be seen 5 (five) superior products of the Bangkalan Regency's agricultural sector in accordance with the aspirations of the people and the Regional Government of Bangkalan Regency to support the acceleration of economic development in Bangkalan Regency as presented in table 4. Five superior products of the Bangkalan Regency's agricultural sector determined are Corn, Snake Fruit, Coconut, Beef Cattle and Milkfish.

**Table 4.** Priority Superior Products of the Agricultural Sector to Support the Acceleration of Economic Development in Bangkalan Regency

No.	Superior Products Agricultural Sector
1	Corn
2	Snake Fruit
3	Coconut
4	Beef Cattle
5	Milkfish

**Source : FGD (2019).**

#### **Policy Direction for Bangkalan Regency's Superior Product Development.**

Planning and structuring a comprehensive development center area for the development of strategic sectors and potential areas is very much needed in the achievement of regional development results and optimal economic acceleration of the community in Bangkalan Regency. The problem currently faced is the allocation of available space and resources that have not been able to accommodate and balance the development and potential of the strategic development sector and potential areas whose development is inseparable from other sectors and regions.

Bangkalan Regency needs design and engineering of the Regency Superior Product-Based Agropolitan Model which is oriented towards regional development as well as economic growth acceleration of the people in Bangkalan Regency, by integrating the use of space and all its functional resources between various sectors to encourage strategic-potential economic sectors to achieve balanced, long-lasting and sustainable regional growth.

This Superior Product-based Agropolitan concept is a form of planning model and spatial use planning for strategic and potential sectors which is expected to encourage the acceleration of added value increase followed by increasing regional productivity and community economy in superior product centers supported by facilities and physical infrastructure, including reliable information technology and market information systems.

To accelerate the growth and development of this Superior Product-Based Agropolitan, it requires information on the zoning of superior commodities and their supporting commodities, which is supported by the availability of adequate sources of electricity and clean water, as well as robust transportation and communication facilities. Several points to consider for adopting this Superior Product-Based Agropolitan include:

1. The acceleration of the regional and society economy, especially the people of Bangkalan Regency through the Agropolitan Model with the Community-Owned Industrial Estate that manages superior products, which are integrated with the existing economic system
2. Anticipation of agro complex products, due to the abundant demand for agrocomplex products in local, regional and national markets
3. Production and Distribution System of superior products:
  - a) Weak bargaining position of farmers / producer communities
  - b) The agro-complex industry faces global market accessibility constraints
  - c) Agrocomplex production is under heavy pressure from other regional commodities
  - d) Farmer-industry partnership system is "not fair"



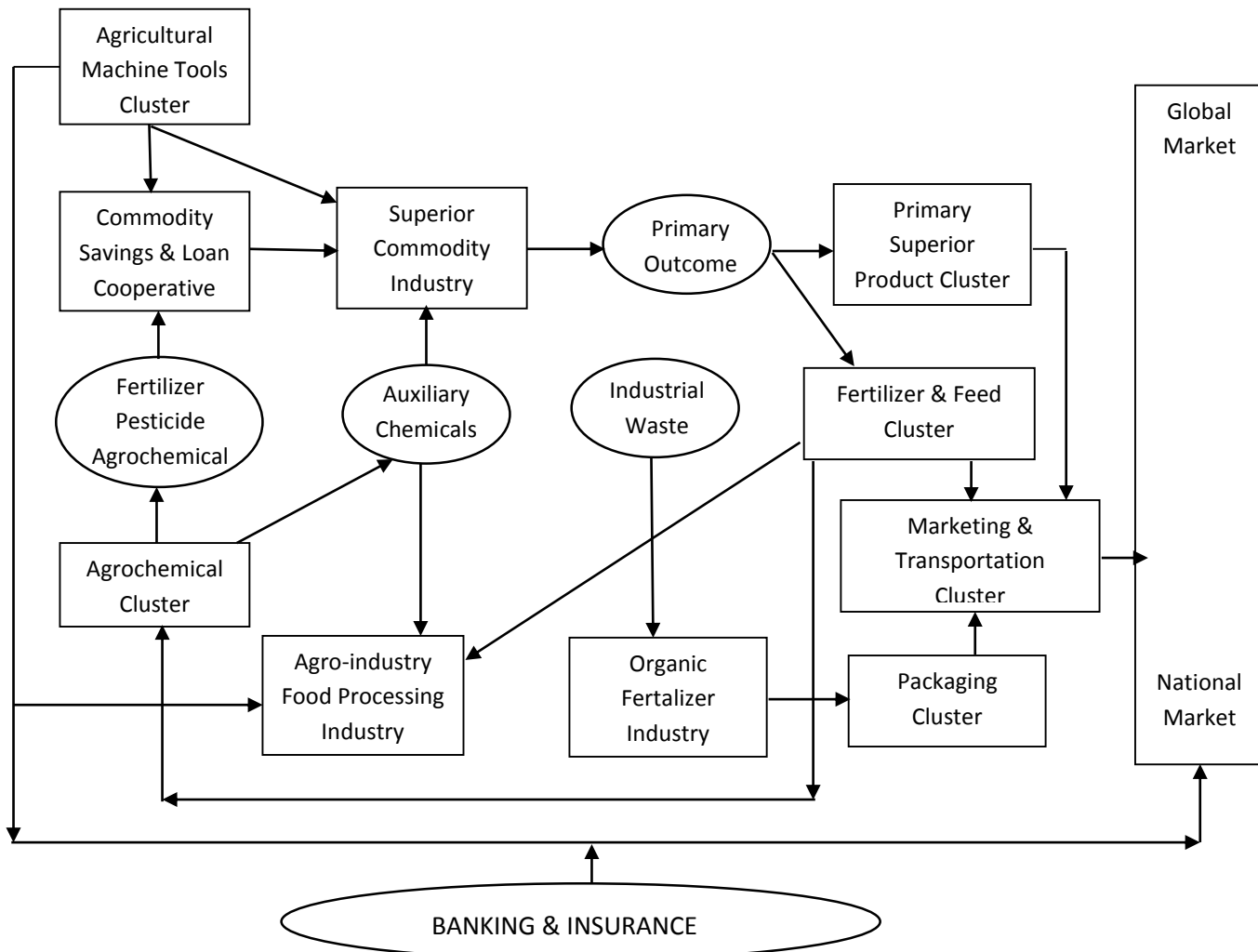
- e) The potential for marine tourism which is supported by ecotourism and agro-tourism has not been optimized
- f) Production costs are burdened by relatively high transportation costs, due to limited transportation access

4. Downstream industries are still limited to simple processed production

This economic acceleration model in principle initiates the development of Regency Superior Products which are supported by effective and relevant techno-industrial clusters with the demands of the regional economic pace as well as poverty / underdeveloped areas reduction.

The recommended superior product-based Agropolitan model is shown in Figure 1

Figure 1



Model of Economic Acceleration through Recommended Bangkalan Regency's Superior Products.

#### **4 CONCLUSION**

1. Bangkalan Regency is one of the Underdeveloped Regions in Madura Island that has a lot of potential natural resources as part of leveraging the local economy, so it is expected that the local economy will grow very well with superior product-based cultivation. Superior products recommended for economic leverage include corn, snake fruit, coconut, beef cattle, and milkfish.
2. The acceleration of the regional economy and society, especially the people of Bangkalan Regency through the Agropolitan Model with the Community-Owned Industrial Estate that manages superior products, which is integrated with the economic system that is already available is a potential strength of local economic development in the Bangkalan Regency area.
3. The Development of Regency Superior Products that are supported by techno-industrial clusters that are effective and relevant to the demands of the regional economic pace while simultaneously reducing poverty / underdeveloped areas that need special attention so that the added value of local products will be able to compete with other national products.

#### **5 RECOMMENDATION**

- 1). In macro area or in the context of a wider region, the superior potential of Bangkalan Regency is mainly in the agriculture, fishery / marine, tourism and plantation sectors. At present the agricultural sector is more focused on meeting local needs in the Bangkalan Regency and diversifying businesses for fishermen who are the majority of the community's livelihoods, so there is a need for post-harvest processing efforts to increase the added value of these superior products;
- 2). To provide solutions to problems faced by superior product business actors, as well as to be facilitator and motivator of the relationship between superior product business actors and partner companies in order to establish good partnerships by providing quality product services, there is a need for regulations from the regency government to affirm existing products in order to have accessibility in development, marketing and production;
- 3). It is necessary to support the inclusion of partner companies to increase cooperation between the government and business actors of superior products so that there is sustainability in the production process, both in terms of quality and quantity.

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