The development strategy of superior commodities in Pidie Jaya regency

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Abstract. The development strategy of superior commodities in Pidie Jaya is very important to be done in such a way that the public is more prosperous in protecting the wheels of life. The developmental success of an area can be seen from the indication of economic change at the public level, but it will not work if the regional government’s contribution is lacking. The purpose of this study was to determine the areas (sub-districts) which is the base of superior commodities in Pidie Jaya Regency and to determine the most effective economic development strategies based on superior commodities in Pidie Jaya Regency. The method used to determine the base of superior commodities was the LQ (Location Quotient) analysis model. The results of this research showed that there were 4 sub-districts as the basis of superior commodities namely Bandar Dua sub-district, Pante Raja sub-district, Bandar Baru sub-district, and Meurah Dua sub-district.

1. Introduction
Growth-oriented development has brought a number of significant changes. High economic growth rates and a number of achievements were achieved. Behind the high economic growth rate and achievements, a number of problems have also been noted that have helped worsen the image of development. Increasing poverty rates, unemployment rates, urbanization, foreign debt burdens, and rising inequality, both developmentally and more stark income inequality have also resulted from the recent development [1].

Economic growth is a process of increasing the welfare of the public by passing the low stages before reaching the highest level. Economic development must also be marked by changes in social structure. The agricultural sector has an important role both at national and regional levels, as the majority of Indonesia's population still depends on the agricultural sector [2]. The agricultural sector is a support for other economic sectors so that economic development within this sector can not be overlooked.

Pidie Jaya Regency is one of the areas where the majority of the population is employed in the agricultural sector [3]. In 2018, Pidie Jaya Regency had one of the largest rice surpluses in Aceh Province. Based on this, the farmers in Pidie Jaya Regency have a golden opportunity to improve their economic standing by utilizing and leveraging their agricultural commodities. The constraint that poses a threat in the agricultural sector, particularly in rice farming, is the high uncertainty and risk of crop failures caused by climate change such as floods, droughts, pests, and diseases which cause farming losses.
Pidie Jaya Regency is one of the regencies that has several agricultural sub-sectors in Aceh Province. Currently, the Government of Pidie Jaya Regency is working to stimulate four agricultural sub-sectors in the area, namely food, plantation, horticulture, and aquaculture, including capture fisheries and marine fisheries. Their goal is to improve the local economy through development of the regional agricultural sector. These sub-sectors are spread across all sub-districts in Pidie Jaya regency except Bandar Dua and Meurah Dua, because these two sub-districts are close to fisheries and marine, farmers’ activities are more directed towards the food, plantation, and horticulture sub-sectors. Aquaculture and capture fisheries are spread throughout six other sub-districts namely Bandar Baru, Pante Raja, Trieggadeng, Meureudu, Ulim, and Jangka Buya because some of these sub-districts are located close to the coast.

For the time being, Pidie Jaya Regency’s government has identified two leading regional sub-sectors, the food and plantation sub-sector which consists of several leading commodities. The commodities from the food sub-sector are paddy and maize commodities which are spread throughout all sub-districts in Pidie Jaya Regency. Within the plantation sub-sector, the primary commodity is cocoa. These three superior commodities are widely cultivated by farmers in Pidie Jaya Regency. While other products are only supporting subsectors.

The policies that support the development of these superior commodities are weak such as the lack of availability of fertilizer, price fluctuation at the time of harvest, and a lack of subsidies for harvesting aids. additionally, Pidie Jaya Regency has not implemented a sustainable agricultural area. Based on the context described above, it is necessary to conduct research to solve the problem of how to more effectively develop the agricultural and superior commodities sector of Pidie Jaya Regency.

2. Materials and methods
This research was conducted in Pidie Jaya Regency, which is one of the main commodity-based regencies and food granaries in Aceh Province. As many as 8 sub-sample locations were chosen through random sampling, with the reason that the area was the main source of livelihood for the public in the agricultural sector. The research was conducted from mid-October to the end of December 2019.

The sampling method is done by random sampling. Members [4] of the population are chosen randomly, through the distribution of questionnaire instruments, focus group discussions (FGD), and conducting interviews with respondents who are developing superior commodities in Pidie Jaya Regency.

The sampling was taken from the farmers who were involved in the development of superior commodities in Pidie Jaya Regency. The samples in this study were farmers are still productive, and enthusiastic to increase farming productivity in developing economic business in agriculture. Six respondents were selected in each of the 8 total sub-district, with a total of 48 respondents plus 4 stakeholder respondents, which consisted of the Agriculture and Plantation service in Pidie Jaya Regency, so that there were 52 respondents overa ll There were many considerations and limitations of energy and time required by the researchers in conducting this research, therefore, the research samples were not very large [5].

2.1. LQ (Location Quotient)
LQ Analysis (Location Quotient) is an analysis tool used to determine the extent of specialization of economic sectors in a region or any sector that is a base sector or leading sector.

To identify the potential development of leading commodities based on regional potentials, and to determine the central area of the main commodity base in Pidie Jaya Regency, the Location Quotient analysis too is used (LQ) and is calculated using the following formula [6].

\[ LQ = \frac{Si/Ni}{S/N} atau \frac{Si/Ni}{Ni/N} \]  

(1)

Where:
LQ = Large coefficient of superior commodity
Si = Area of superior commodity i in each region (Sub-district).
Ni = Total area of superior commodity i in each region (Sub-district)
S = Area of superior commodity in each region (Pidie Jaya Regency)
N = Total area of superior commodity i in each region (Pidie jaya Regency)

The LQ number gives the following indications:
LQ > 1 Main commodity i is feasible to be developed in the region (Sub-district)
LQ < 1 Main commodity i is not suitable to be developed in the region (Sub-district)
LQ = 1 Main commodity i may be developed (Sub-district)

3. Result and Discussion

The development of agricultural areas in Pidie Jaya Regency is largely determined by the presence of leading commodities in the area. Superior commodities are commodities which are considered to be competitive with similar products in other regions, because besides having a comparative advantage, these commodities can also be well cultivated and have high development prospects for the future [7]. Determination of superior commodities is very useful in determining regional development priorities. Pidie Jaya is currently one of the regions that has several leading commodities within two mainstay sub-sectors, namely the food and plantation sectors.

It states that all sub-districts except Padang Jaya sub-district do not have a rice development base in north Bengkulu regency [8]. While, is intended to look at the leading commodity indicators based on the area of planting in the existing sub-district area.

One of the strategies for the development of the food crops sub-sector at the national, provincial, sub-district, or city level is through regional-based development [9]. Concerning guidelines for developing agricultural areas, the Minister of Agriculture released Decree No. 830 of 2016 concerning the determination of the location of national Agricultural quota.

The results of observations and research in Pidie Jaya Regency is there are several types of regional superior commodities that are being developed by farmers as the main staples in the agricultural sector, where the commodity has been designated as the leading regional commodity since 2012 until now. The commodities rice fields, corn, and cocoa are widely spread throughout Pidie Jaya Regency. The following are planting area, harvested area, and average production, and productivity of superior commodities in Pidie Jaya Regency.

| Commodity  | Planted Area (Ha) | Harvested Area (Ha) | Production (Ha) | Productivity (Ton) |
|------------|-------------------|---------------------|-----------------|-------------------|
| Paddy Rice | 17.118            | 17.117              | 100,701         | 5.88              |
| Corn       | 1.924             | 1.298               | 6,978           | 5.38              |
| Cocoa      | 15.070            | 8.738               | 6,990           | 0.8               |

Source:[1]

According to the above table, it can be concluded that the development of rice commodities in all eight sub-districts in Pidie Jaya Regency occurred in a total planting area of 17,118 hectares, a harvested area of 17,117 hectares, with an average productivity of 5.88 tons per hectare and total production of 100,701 tons per year. Corn commodities were developed in 1,924 hectares, with a harvested area of 1,298 hectares, with an average productivity of 5.38 tons per hectare and a total production of 6,978.25 tons. Meanwhile, cocoa was planted over as many as 15,070.0 hectares with a harvested area of 8,738 hectares, while production yielded 6,990.4 tons with a productivity of 800 kg/ha in 2019.

3.1. The determination of central commodity base in Pidie Jaya Regency

To identify a superior commodity base and non-base subsector in Pidie Jaya Regency, the LQ (Location Quotient) analysis tool can be used. The LQ calculation technique will be discussed below.
An LQ value > 1 indicates that commodity x is the basis for or a source of growth. Commodity x has a comparative advantage, the results can not only meet the needs of the region concerned but can also be exported to other regions. If the value of LQ = 1 commodity x is classified as a non-base commodity, it has no comparative advantage. Production is only sufficient to meet the needs of the region itself and can not meet other regions’ needs (export) [10]. If the value of LQ < 1 commodity x is also included as non-base. Commodity production in an area cannot meet its own needs so it must rely on imports to meet local demand. Commodities that get an LQ value > 1 are normative standards to be set as superior commodities. However, when there are many commodities in an area that produce LQ > 1, while only one commodity is sought, then the commodity that has the highest LQ is selected. Because the higher LQ value in an area shows the higher potential advantage of the commodity [11-12].

The LQ analysis method was used to determine the central commodity and base commodity in Pidie Jaya Regency. There is a superior commodity base based on planting area in several sub-districts of Pidie Jaya Regency. The following table is the LQ value of leading commodities for rice, corn, and cocoa based on the area of planting in the Pidie Jaya Regency;

| No | Sub-Districts | Rice | Corn | Cocoa |
|----|----------------|------|------|-------|
| 1  | Meureudu       | 1.18 | 0.27 | 0.89  |
| 2  | MeurahDua      | 1.33 | 1.60 | 0.55  |
| 3  | Bandar Dua     | 1.19 | 1.93 | 0.67  |
| 4  | JangkaBuya     | 1.86 | 0.05 | 0.15  |
| 5  | Ulim           | 1.10 | 0.30 | 0.98  |
| 6  | Trienggadeng   | 0.90 | 0.20 | 1.22  |
| 7  | Pante Raja     | 0.60 | 2.04 | 1.32  |
| 8  | Bandar Baru    | 0.69 | 1.03 | 1.35  |

Source: Primary Data (processed) in 2020

There is a central rice-planting base in Pidie Jaya Regency as shown in Table 3 above, based on the area of planting that obtained an LQ value > 1, Meureudu sub-district, Meurah Dua sub-district, Bandar Dua sub-district, JangkaBuya sub-district, and Ulim sub-district. Whereas for corn commodity which has LQ value > 1 are Meurah Dua sub-district, Bandar Dua sub-district, Pante Raja sub-district, and Bandar Baru sub-district. For cocoa commodities which have LQ value > 1 there was Trienggadeng sub-district, Pante Raja sub-district, and Bandar Baru sub-district.

| No | Sub-Districts | Rice | Corn | Cocoa |
|----|----------------|------|------|-------|
| 1  | Meureudu       | 1.12 | 0.23 | 0.88  |
| 2  | MeurahDua      | 1.23 | 1.67 | 0.45  |
| 3  | Bandar Dua     | 1.15 | 2.37 | 0.50  |
| 4  | JangkaBuya     | 1.52 | 0.00 | 0.12  |
| 5  | Ulim           | 1.08 | 0.33 | 0.94  |
| 6  | Trienggadeng   | 0.92 | 0.00 | 1.31  |
| 7  | Pante Raja     | 0.67 | 0.89 | 1.66  |
| 8  | Bandar Baru    | 0.74 | 1.00 | 1.52  |

Source: Primary Data (processed) in 2020

It can be concluded that for rice plants got the highest value in the Jangka Buya sub-district with a value of 1.86. For the corn crop, the highest number is in Pante Raja sub-district with a value of 2.04.
while for the cocoa, it is Bandar Baru sub-district with a value of 1.35. The results of the LQ analysis above show that the base of superior commodities in Pidie Jaya Regency is broadly planted.

Based on the LQ calculations, there is a central harvested area of rice in Pidie Jaya Regency as shown in Table 4 above with LQ values > 1 found in Meureudu sub-district, MeurahDua sub-district, Bandar Dua sub-district, JangkaBuya sub-district, and Ulim sub-district. Besides, the corn commodity that has an LQ value > 1 are MeurahDua sub-district, Bandar Dua sub-district, and Bandar Baru sub-district. Next, the cocoa commodity that has LQ value > 1 are Trienggadeng sub-district, Pante Raja sub-district, and Bandar Baru sub-district.

It can be concluded that based on the harvested area for rice commodity which gets the highest LQ value is the sub-district of Jangka Buya with a value of 1.52. For the commodity of corn, the highest LQ value is Bandar Dua sub-district with a value of 2.37, whereas for Cocoa commodity is Pante Raja sub-district with a value of 1.66. Based on the results of the LQ analysis above, it shows the base of superior commodities in Pidie Jaya Regency is widely harvested, for rice is Jangka Buya sub-district, corn is in Bandar Dua sub-district, and cocoa is Pante Raja sub-district.

Table 4. LQ Value of superior commodities based on production in Pidie Jaya regency.

| No | SUB-DISTRICTS | Rice | Corn | Cocoa |
|----|---------------|------|------|-------|
| 1  | Meureudu      | 1.07 | 0.20 | 0.78  |
| 2  | MeurahDua     | 1.03 | 1.28 | 0.35  |
| 3  | Bandar Dua    | 0.97 | 2.08 | 0.42  |
| 4  | JangkaBuya    | 1.13 | 0.00 | 0.09  |
| 5  | Ulim          | 1.06 | 0.24 | 0.85  |
| 6  | Trienggadeng  | 1.04 | 0.00 | 1.48  |
| 7  | Pante Raja    | 0.91 | 1.03 | 2.28  |
| 8  | Bandar Baru   | 0.90 | 1.34 | 2.04  |

Source: Primary Data (processed) in 2020

Based on the LQ analysis, there is a central rice production in Pidie Jaya Regency, as shown in Table 5 above which obtained LQ value > 1 is Meureudu sub-district, Meurah Dua district, Jangka Buya sub-district, Ulim district and Trienggadeng district. For the commodity of corn, the sub-districts that obtained LQ value > 1 are MeurahDua sub-district, Bandar Dua sub-district, Pante Raja Sub-district, and Bandar Baru Sub-district. While the cocoa commodity which obtained LQ value > 1 is Trienggadeng sub-district, Pante Raja sub-district, and Bandar Baru sub-district.

Table 5. LQ Value of superior commodities based on productivity in Pidie Jaya regency.

| No | Sub-Districts | Rice | Corn | Cocoa |
|----|---------------|------|------|-------|
| 1  | Meureudu      | 0.90 | 1.19 | 0.85  |
| 2  | MeurahDua     | 0.90 | 1.19 | 0.86  |
| 3  | Bandar Dua    | 0.85 | 1.27 | 0.87  |
| 4  | JangkaBuya    | 1.56 | 0.00 | 1.56  |
| 5  | Ulim          | 0.98 | 1.05 | 0.92  |
| 6  | Trienggadeng  | 1.56 | 0.00 | 1.58  |
| 7  | Pante Raja    | 0.92 | 1.13 | 0.95  |
| 8  | Bandar Baru   | 0.82 | 1.30 | 0.91  |

Source: Primary Data (processed) in 2020
Based on the LQ value, it can be concluded that the highest rice production is the Jangka Buya sub-district with a value of 1.13. For the production of corn, the highest value are Bandar Dua sub-district with a value of 2.08. While cocoa production is Pante Raja sub-district with a value of 2.28. The results of the LQ analysis above show that the base of superior commodities in Pidie Jaya Regency in production for rice is in the Jangka Buya District, the corn production base is in Bandar Dua Sub-district, while for the cocoa production base there is in Pante Raja sub-district.

Based on the LQ analysis table above, there is a basis for the productivity of rice in Pidie Jaya Regency, as shown in Table 6 above which obtained an LQ value > 1 is the sub-district of Jangka Buya and the sub-district of Trienggadeng. The central productivity of corn commodity which has a LQ value > 1 are Meureudu sub-district, Meurah Dua sub-district, Bandar Dua sub-district, Ulim sub-district, Pante Raja sub-district, and Bandar Baru sub-district. For the cocoa commodity, sub-districts that received an LQ value > 1 are the Jangka Buya sub-district and Trienggadeng sub-district.

Based on the LQ value, it can be concluded that the highest productivity of rice is in the Sub-districts of Jangka Buya and Trienggadeng with an LQ value of 1.56. Whereas for corn, there is a Bandar Baru Sub-district with a LQ value of 1.30. For cocoa productivity, there is Trienggadeng Sub-district with the LQ value of 1.58. The results of the LQ analysis above indicate that the base of superior commodities in Pidie Jaya Regency is productivity, rice is in the sub-district of Jangka Buya and Trienggadeng, while corn is in the sub-district of Bandar Dua, and cocoa is in the Trienggadeng sub-district.

The next step is to conduct an EV (Eugent Value) analysis to determine priority areas for the development of superior commodities in an effort to realize public economic development in Pidie Jaya Regency.

| No | Sub-Districts   | Average | EV (Eugent Value) |
|----|-----------------|---------|------------------|
| 1  | Bandar Dua      | 3.83    | 1                |
| 2  | Pante Raja      | 3.83    | 1                |
| 3  | Bandar Baru     | 3.92    | 2                |
| 4  | Meurah Dua      | 4.08    | 3                |
| 5  | Ulim            | 4.25    | 4                |
| 6  | Trienggadeng    | 4.58    | 5                |
| 7  | Meureudu        | 4.67    | 6                |
| 8  | Jangka Buya     | 4.92    | 7                |

Source: Primary Data (processed) in 2020

Based on the EV Value sequence, there are a number of sub-districts which are included in the central area of leading commodity development in Pidie Jaya Regency. The Sub-district ranking consists of Bandar Dua sub-district, Pante Raja sub-district, Bandar Baru sub-district and Meurah Dua sub-district. These four sub-districts are the central sub-districts of the main commodity base in Pidie Jaya Regency.

4. Conclusion
Based on the results of the LQ analysis, there are several central bases for superior commodities in Pidie Jaya Regency. Among the eight sub-districts, there are only four sub-districts that belong to base sub-districts, namely, Bandar Dua sub-district, Pante Raja sub-district, Bandar Baru sub-district, and Meurah Dua sub-district. Increasing the availability of fertilizers, the stability of harvest prices, and aiding in the procurement of harvesting aids can improve the regional economy and create sustainable agriculture bases for superior products in the sub-districts that do not yet have a central base of superior commodities.
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