# Identification of Priority Food Potential in Pidie District

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## Abstract

In this study the priority food studied is rice commodity. The area of rice commodity production centers is based on Location Quotient (LQ) consists of 11 sub-districts: Glumpang Baro, Mutiara, Tangse, Keumala, Mila, Delima, Peukan Baro, Kembang Tanjong, Simpang Tiga, Batee and Muara Tiga. Meanwhile for the buffer sub-districts for rice production, it is become the government priority to support and encourage agricultural development in the food sector as sub-districts included in the priority list of rice commodity development in Pidie District in an effort to support national rice self-sufficiency.

**Keywords:** LQ; Priority Food Commodities; Pidie Regency

## Introduction

Food is anything that comes from biological and water sources, both processed and unprocessed, and are intended as food or drinks for human consumption. These include food crops, food raw materials and other materials used in the preparation process, processing or making food or drinks (Saparinto and Hidayati., 2006).

According to Suryana (2005), countries or regions have good food security if they are able to provide a stable and sustainable food supply for the entire population. With good food security, there will be sufficient nutritional needs for a healthy and intelligent generation. The purpose of this study was to find out which sub-district which became the center of rice commodity production in Pidie District.

According to Dillon (2004), the role of the agricultural sector is the basis for the continuity of sustainable economic development which is expected to be able to provide solutions to Indonesia's problems, because the agricultural sector has the same four functions for the development of a nation; 1) adequate domestic food; 2) provision of employment and business; 3) supply of industrial raw materials, and 4) as a foreign exchange earner.

The goal is to reduce disparities between regions and it is expected that the role of rural development will increase, as well as regional development which driven by regional competitiveness and regional superior products and increasing balance of growth between the west coast and the east coast as a basis for economic growth (RPJM., 2014).

The term "development" is defined as doing something that is not from zero, or not making something that previously did not exist, but doing something that actually already exists but the quality and quantity is increased or expanded. So, in terms of "community development", it implies the understanding that the community being developed is actually already has the capacity and it needs to be increased (Rustiadi et al., 2005).

Blakely in Kuncoro (2004) defines regional economic development as a process in which local governments and all components of society manage various existing resources and form a partnership pattern to create new employment and stimulate the development of economic activities within the area.

Various regional development concepts have developed and are applied in Indonesia. According to Bappenas (2010) various regional development concepts that have been implemented include: 1) The concept of regional development based on resource characteristics; 2) the concept of spatial-based regional development; 3) the concept of integrated regional development, this concept emphasizes collaboration between sectors to improve community welfare and poverty reduction in disadvantaged areas; 4) the concept of regional development based on clusters, this concept is focused on the interrelationship and dependence between actors in the production network to service, the successful cluster is a cluster that is specialized, has competitiveness and comparative advantage, and is oriented externally.

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According to Adiyoga (1999), the ability of the agricultural sector to make a direct contribution to economic growth and the welfare of farm household depends on the level of farm income itself. Thus, the level of income of food crops is the main determinant of the income of rice farmers, and also appears as one of the important factors that condition agricultural growth. The level of farming income is largely determined by the efficiency of farmers in allocating their resources into various alternative production activities.

Saputra U. H (2002) stated that superior agricultural commodities are oriented to the preservation of environmental resources. In terms of commodity perspective, agriculture consists of food crops, plantation, forestry, horticulture, livestock and fisheries. Meanwhile, in terms of the science of development perspective, agriculture is built from hard sciences and soft sciences both in the power of basic, applied and advanced science and its synthesized science.

The food commodity business in Pidie Regency in the last ten years can be seen in Table 1.

The arrangement of food centers in Pidie District is still not detailed as it is expected to be good for policy makers or for policy formulation in Pidie District.

### Research Purposes

This study is aimed to find out areas with a priority food commodity base in Pidie District to facilitate policy making in the future development of rice food commodities.

**Table 1** Planted area, harvested area, and Corn production in Pidie district, 2007-2016

| Year | Planted Area (Hectare) | Harvested Area (Hectare) | Production (Ton) | Productivity (Ton/Hectare) |
|---|---|---|---|---|
| 2007 | 496 | 306 | 942 | 3.08 |
| 2008 | 1.255 | 783 | 2.410 | 3,08 |
| 2009 | 454 | 306 | 942 | 3,08 |
| 2010 | 378 | 299 | 920 | 3,08 |
| 2011 | 366 | 225 | 830 | 3,69 |
| 2012 | 751 | 186 | 679 | 3,65 |
| 2013 | - | 346 | 1.259 | 3,64 |
| 2014 | 285 | 337 | 1.440 | 4,27 |
| 2015 | 271 | 91 | 389 | 4,27 |
| 2016 | 1.130 | 711 | 522 | 0,73 |

Source: Badan pusat statistik of Pidie district, 2017

## *Methodology*

This research was carried out in Pidie District, which was determined intentionally in choosing secondary data to study potential areas of rice food, therefore the data used was secondary data assisted by literature.

## *Research Population and Samples*

The population and sample of this study were all sub-districts within Pidie District.

## *Source and Data Collection*

The data used in this study are secondary data obtained from Badan Pusat Statistik (Central Bureau of Statistics; BPS) and Dinas Pertanian Pangan (Food Agriculture Department) publication data in Pidie District.

## *Data Analysis Methodology*

This research is a descriptive study carried out with secondary data exploration methods starting from the general condition of food crops in Pidie Regency covering planting area, harvest area, production and productivity in the last five years, where the data is analyzed using the Location Quotient (LQ) method to identify potential development areas, namely; development of rice food in Pidie District Location Quotient (LQ) which is calculated by the following formula (Warpani., 1984):

$$LQ = \frac{Si/Ni}{S/N} \; or \; \frac{Si/Ni}{Ni/N}$$

Annotations:

LQ       = The magnitude of the commodity coefficient of rice food crops
Si        = The area of rice crop food commodities in each region (District)
Ni        = The total area of rice food crop commodities in each region (District)
S         = Area of rice food crops in each region (Pidie Regency)
N        = The total area of food crops in each region (Kabupaten Pidie)

The LQ score indicates:

LQ >1 Rice crop commodities are feasible to be developed in the region (Sub-district)
LQ <1 Rice crop commodities are not feasible to be developed in the region (Sub-district)
LQ =1 Rice crop commodities are may be developed in the region (Sub-district)

*Results and Discussion*

Location Quotient (LQ) analysis describes a roadmap of priority food areas with a total harvest area and food production in the Pidie District area. LQ > 1 means base sector. In other words, commodity X in a region has a comparative advantage (the production exceeds the needs, so that it can be sold outside the production area); LQ = 1 means not a base sector. In other words, commodity X in an area has no superiority (production is only able to meet its own production area); and LQ <1 means the sector is not a base. In other words, commodity X in an area cannot fulfill its own needs so it needs supplies from outside the production area.

Based on the results of the LQ analysis of food commodity in Pidie District which is a central commodity in Pidie Regency, food commodities in Pidie Regency are regional assets that have a positive impact on the regional economic and people economic movements in Pidie District. The food commodities in Pidie Regency each district has different planting and production seasons of each food commodity. Therefore, it needs LQ analysis to be able to set the priority commodity centers. LQ analysis is calculated based on the harvested area, production and productivity of each food commodity in each sub-district.

Table 2 explains the rice commodity based on the harvested area cultivated by farmers, with LQ values> 1 including 16 sub-districts: Mane, Glumpang Baro, Mutiara, Mutiara Timur, Keumala, Titeue, Sakti, Mila, Padang Tiji, Delima, Indrajaya, Peukan Baro, Kembang Tanjong, Simpang Tiga, Pidie and Muara Tiga. Harvest area for soybean commodity with LQ> 1 including seven sub-districts: Geumpang, Glumpang Tiga, Tiro/ Trusep, Tangse, Padang Tiji, Grong-grong and Batee. Harvest area of corn commodity with LQ> 1 including eight sub-districts: Geumpang, Mane, Tiro/ Trusep, Tangse, Titeu, Sakti, Mila and Padang Tiji.

**Table 2** LQ Value of food commodity based on harvest area in Pidie district

| No | Sub-Districts | Rice (Hectare) | Soybean (Hectare) | Corn (Hectare) |
|----|---------------|----------------|-------------------|----------------|
| 1  | Geumpang      | 0.99 | 1.11 | 2.52 |
| 2  | Mane          | 1.02 | -    | 5.23 |
| 3  | Glumpang Tiga | 0.99 | 1.66 | -    |
| 4  | Glumpang Baro | 1.03 | -    | -    |
| 5  | Mutiara       | 1.03 | -    | -    |
| 6  | Mutiara Timur | 1.00 | 0.93 | -    |
| 7  | Tiro/Truseb   | 0.97 | 2.03 | 2.41 |
| 8  | Tangse        | 0.86 | 6.28 | 2.17 |
| 9  | Keumala       | 1.02 | 0.40 | -    |
| 10 | Titeue        | 1.01 | 0.45 | 1.11 |
| 11 | Sakti         | 1.02 | -    | 2.22 |
| 12 | Mila          | 1.03 | -    | 1.20 |
| 13 | Padang Tiji   | 1.00 | 1.13 | 1.02 |
| 14 | Delima        | 1.00 | 0.91 | -    |
| 15 | Grong-grong   | 0.89 | 5.13 | -    |
| 16 | Indrajaya     | 1.03 | -    | -    |
| 17 | Peukan Baro   | 1.03 | -    | -    |
| 18 | Kembang Tanjong | 1.03 | -  | -    |
| 19 | Simpang Tiga  | 1.03 | -    | -    |
| 20 | Pidie         | 1.01 | 0.76 | 0.63 |
| 21 | Batee         | 0.94 | 3.51 | -    |
| 22 | Muara Tiga    | 1.03 | -    | -    |

Source: Processed data, 2018

**Table 3** LQ value of food commodity based on production in Pidie regency

| No | Sub-Districts | Rice (Hectare) | Soybean (Hectare) | Corn (Hectare) |
|----|---------------|----------------|-------------------|----------------|
| 1  | Geumpang      | 0.99 | 1.99 | 2.35 |
| 2  | Mane          | 1.00 | -    | 5.25 |
| 3  | Glumpang Tiga | 0.99 | 2.74 | -    |
| 4  | Glumpang Baro | 1.01 | -    | -    |
| 5  | Mutiara       | 1.01 | -    | -    |
| 6  | Mutiara Timur | 1.00 | 1.53 | -    |
| 7  | Tiro/Truseb   | 0.99 | 3.78 | 1.03 |
| 8  | Tangse        | 0.99 | 3.02 | -    |
| 9  | Keumala       | 1.00 | 0.25 | -    |
| 10 | Titeue        | 1.00 | 0.36 | 0.41 |
| 11 | Sakti         | 1.00 | -    | 4.28 |
| 12 | Mila          | 1.01 | -    | -    |
| 13 | Padang Tiji   | 1.00 | 1.43 | 2.22 |
| 14 | Delima        | 1.00 | 0.91 | -    |
| 15 | Grong-grong   | 0.97 | 9.41 | -    |
| 16 | Indrajaya     | 1.01 | -    | -    |
| 17 | Peukan Baro   | 1.01 | -    | -    |
| 18 | Kembang Tanjong | 1.01 | - | -    |
| 19 | Simpang Tiga  | 1.01 | -    | -    |
| 20 | Pidie         | 1.00 | 0.68 | 1.14 |
| 21 | Batee         | 1.01 | -    | -    |
| 22 | Muara Tiga    | 1.01 | -    | -    |

Source: Processed data, 2018

Table 3 explains the rice commodity based on the production currently cultivated by farmers, with LQ> 1 including 17 sub-districts: Mane, Glumpang Baro, Mutiara, Mutiara Timur, Keumala, Titeue, Sakti, Mila, Padang Tiji, Delima, Indrajaya, Peukan Baro, Kembang Tanjong, Simpang Tiga, Pidie, Bate and Muara Tiga. Soybean commodities are based on production, with LQ> 1 including seven sub-districts: Geumpang, Glumpang Tiga, Mutiara Timur, Tiro/ Truseb, Tangse, Padang Tiji and Grong-grong. Corn commodities are based on production, with LQ> 1 including six sub-districts: Geumpang, Mane, Tiro/ Truseb, Sakti, Padang Tiji and Pidie.

Table 4 explains that rice commodities are based on the productivity currently obtained by farmers, with LQ> 1 including 12 sub-districts: Glumpang Baro, Mutiara, Tangse, Keumala, Mila, Delima, Indrajaya, Peukan Baro, Kembang Tanjong, Simpang Tiga, Bate and Muara Tiga. Soybean commodities based on productivity with LQ> 1 include 10 sub-districts: Geumpang, Glumpang Tiga, Mutiara Timur, Tiro/ Truseb, Keumala, Titeue, Padang Tiji, Delima, Grong-grong and Pidie. Corn commodities based on productivity with LQ> 1 include five sub-districts: Geumpang, Mane, Sakti, Padang Tiji and Pidie.

**Table 4** LQ value of food commodity based on productivity in Pidie regency

| No | Sub-Districts | Rice (Hectare) | Soybean (Hectare) | Corn (Hectare) |
|----|---------------|----------------|-------------------|----------------|
| 1 | Geumpang | 0.77 | 2.22 | 1.85 |
| 2 | Mane | 0.91 | - | 2.40 |
| 3 | Glumpang Tiga | 0.98 | 2.57 | - |
| 4 | Glumpang Baro | 1.23 | - | - |
| 5 | Mutiara | 1.23 | - | - |
| 6 | Mutiara Timur | 0.98 | 2.58 | - |
| 7 | Tiro/Truseb | 0.86 | 2.52 | 0.93 |
| 8 | Tangse | 1.16 | 0.77 | - |
| 9 | Keumala | 1.12 | 1.13 | - |
| 10 | Titeue | 0.98 | 1.27 | 0.93 |
| 11 | Sakti | 0.73 | - | 3.73 |
| 12 | Mila | 1.23 | - | - |
| 13 | Padang Tiji | 0.63 | 1.28 | 3.55 |
| 14 | Delima | 1.06 | 1.71 | - |
| 15 | Grong-grong | 0.97 | 2.64 | - |
| 16 | Indrajaya | 1.23 | - | - |
| 17 | Peukan Baro | 1.23 | - | - |
| 18 | Kembang Tanjong | 1.23 | - | - |
| 19 | Simpang Tiga | 1.23 | - | - |
| 20 | Pidie | 0.70 | 1.01 | 3.28 |
| 21 | Batee | 1.23 | - | - |
| 22 | Muara Tiga | 1.23 | - | - |

Source: Processed data, 2018

Rice is a commodity that is very potential to be developed in an integrated and sustainable manner in Pidie Regency; based on the supportive results of LQ analysis, planting area, harvest area, production and productivity. Based on the acquisition of LQ values that have been obtained, then the analysis of the Eugent Value is then carried out to determine priority areas for rice commodity development in an effort to support the economic growth of the community in Pidie District.

Based on EV Value, several sub-districts can be established to become priority areas for rice commodity development in Pidie District. The main priority of the rice development area including 6 sub-districts: Glumpang Baro, Mutiara, Indrajaya, Peukan Baro, Kembang Tanjong and Simpang Tiga. The second priority of rice development areas including 2 sub-districts: Muara Tiga, Mila. The third priority of the rice development areas is Keumala District. The fourth priority of the rice development areas is Titeue District. The fifth priority for rice development areas including 2 sub-districts: Mane and Delima. While the following sub-districts: Sakti, Mutiara Timur, Batee, Padang Tiji, Geumpang, Pidie, Tiro / Trusep, Glumpang Tiga, Tangse and Grong-Grong, are become the government's priority to support and encourage agricultural development in the food sector as sub-districts included in the priority list of rice commodity development in Pidie District.

**Table 5** Determination of priority areas for rice development in Pidie district

| No | Sub-Districts | Averages | EV (*Eugent Value*) |
|----|---------------|----------|---------------------|
| 1  | Glumpang Baro | 6.50  | 6 |
| 2  | Mutiara | 6.50 | 6 |
| 3  | Indrajaya | 6.50 | 6 |
| 4  | Peukan Baro | 6.50 | 6 |
| 5  | Kembang Tanjong | 6.50 | 6 |
| 6  | Simpang Tiga | 6.50 | 6 |
| 7  | Muara Tiga | 7.75 | 7.5 |
| 8  | Mila | 7.75 | 7.5 |
| 9  | Keumala | 10.75 | 9 |
| 10 | Titeue | 13.25 | 10 |
| 11 | Mane | 13.50 | 11.5 |
| 12 | Delima | 13.50 | 11.5 |
| 13 | Sakti | 14.25 | 13 |
| 14 | Mutiara Timur | 15.00 | 14.5 |
| 15 | Batee | 15.00 | 14.5 |
| 16 | Padang Tiji | 16.00 | 16 |
| 17 | Geumpang | 16.13 | 17 |
| 18 | Pidie | 16.25 | 18 |
| 19 | Tiro/Truseb | 17.50 | 19 |
| 20 | Glumpang Tiga | 17.88 | 20.5 |
| 21 | Tangse | 17.88 | 20.5 |
| 22 | Grong-grong | 19.38 | 22 |

Source: Processed data, 2018

*Conclusion*

From the results of the LQ analysis, the priority food in Pidie Regency is rice commodity and rice production centers in Pidie District, there are five sub-districts that occupy the first priority: Glumpang Baro, Mutiara, Indrajaya, Peukan Baro, Kembang Tanjong and Simpang Tiga. The second priority is Muara Tiga and Mila. Third priority is Keumala. The fourth priority is Titeu. The fifth priority is Mane and Delima. While these sub-districts: Sakti, Mutiara Timur, Batee, Padang Tiji, Geumpang, Pidie, Tiro/ Trusep, Glumpang Tiga, Tangse and Grong-grong, are buffer zones for rice production in Pidie District.

## *Recommendation*

The Government and Farmers must coordinate with each other in the development of food commodities, especially rice commodities to make the priority food areas maintained in a sustainable manner in Pidie District.

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