The Analysis of Leanding Subsector Paddy Commodities in South Sumatera Province (LQ Analysis)

by Siti Rohima

The Analysis of Leading Subsector Paddy Commodities in South Sumatera Province (LQ Analysis)

Siti Rohima, Anna Yulianita, Nengsi Puspita Dewi

Faculty of Economics, Universitas Sriwijaya, Palembang, Indonesia

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Abstract: The purpose of this study to analyze the leading commodities of paddy plants in the South Sumatera Province. In this study refers to two types of paddy plants, which are Wetland paddy and Dryland paddy.. The method is using (LQ) analysis and secondary data. With the LQ formula, an index will be produced to determine a regency/city including base or non-base on paddy plants, if LQ> 1 (Leading Sector), LQ = 1 (Self-Sufficiency), LQ <1 (non-Leading sector). The results of study show that regencies or cities that have a low total of wetland paddy production included in the basic categories are: Lahat Regency, Musi Rawas Regency, East OKU Regency, Ogan Ilir Regency, Empat Lawang Regency, Palembang City, Pagaralam City. Non-Base Sector categories are OKI, Muara Enim, Musi Banyuasin, South OKU, and Lubuklinggau City. The category of base-sector for Dryland paddy production is Ogan Komering Ilir Regency, then Ogan Komering Ulu Regency, Muara Enim Regency, Prabumulih City, Musi Banyuasin Regency and Lahat Regency. Non-base sector categories are South OKU Regency, Musi Rawas Regency, Banyuasin Regency, East OKU Regency, Ogan Ilir Regency, Empat Lawang Regency, LubukLinggau City, Palembang City, Pagaralam City.

1 INTRODUCTION

1.1 Background

The agricultural sector is an important sector and is a major driver in the economy of regencies/cities in South Sumatra Province. One strategy that can be used in regional economic development through the development of paddy leading commodities. The development of leading commodity-based regions is expected to spur the growth of a region which in turn can increase people's income. Utilizing superior regional potential, optimally and integrated potential is a condition that needs to be considered so that the welfare and prosperity of the community can be achieved (Mubyarto, 2000).

Determination of commodity as a leading commodity in regional must be adjusted to the potential of natural resources and human resources owned by the region. Commodities selected as regional leading commodities are commodities that have high productivity and can provide added value so that they have a positive impact on people's welfare. In addition, the determination of regional leading commodities must also consider the contribution of a commodity to economic growth and aspects of equitable development in an area (Syahroni, 2005)

Leading commodities in the agricultural sector, especially paddy, can be used as a basis for determining the priority of agricultural development. Agricultural development aims to improve the yield and quality of production, increase income and living standards of the community. The aim of decent agricultural development is placed as a top priority for the achievement of food self-sufficiency. Agricultural development strives to develop the existing potential, namely utilizing natural resources optimally. Main commodity in a region different, with excellent potential areas can be illustrated by the region's ability to produce, create value, utilization of resources in real time, provide employment, generate income for the community, have prospects for improving productivity and investment as well as having the power sai ng high (Bappeda, 2014) . The agricultural sector has an important role both at the national and regional levels, such as in economic development in a country while most of the Indonesian population still

depend on their lives. This is because the agricultural sector contributes significantly to national income and national food providers. Food as one type of physiological needs occupies the first herarchy in the types of basic human needs. Food is said to be a basic need for every human being everywhere, because it is related to human survival, growth and development.

Location Quotient (LQ) is a method based on sector theory base to calculate relative comparisons of value added contribution of a sector in a region to the value added contribution of the sector concerned nationally or to a higher level (Rusastra et al. 2000). The use of the LQ method can find out the value of the added value of each sector that represents whether the sector is a superior commodity or not.

The concept of LQ states that the quantity of LQ on a commodity is greater than one (LQ> 1) then the commodity is a base commodity that has the advantage of meeting the needs of other regions. This commodity has the potential to be developed and can become a foundation for regional economic development. Conversely, if the LQ is smaller than one (LQ<1), it indicates that the commodity is non leading commodities. These commodities do not have advantages and tend to import from other regions because they do not meet the needs of their own regions.

1.2 Research purposes

Analyze leading commodities of paddy plants in regencies / cities in South Sumatra Province.

1.3 Literature Review

1.3.1 Featured Commodities

The comparative advantage of a commodity for a country or region is that the commodity is relatively leading to other commodities in the region (Mawardi, 1997). In this case, the definition of leading commodity is in the form of comparison and not in the form of real added value. The comperative advantage is an economic activity that is comparatively more profitable for regional development. While the leading sector is a sector that has comparative advantages and competitive advantages with similar sector products from other regions and provides great value for benefits. Leading sectors also provide large value-added and production, have a large multiplier effect on other economies, and have high demand both in local markets and export markets. Excellent commodities

are the mainstay commodities that have a strategic position to be developed in an area. This strategic position is based on technical considerations (soil and climate conditions), socio-economic and institutional conditions. (Handayana, 2003).

This determination is important considering that the availability and capability of resources (natural, capital and human) to produce and market all commodities that can be produced in a region simultaneously is relatively limited. On the other hand, in the current free market era, at the local, national and global market level, only commodities that are cultivated efficiently in terms of technology and socio-economics and have comparative and competitive advantages that are able to compete sustainably with the same commodities from other regions. In simpler terms what is meant by superior commodities is a commodity that is feasible to cultivate because it provides benefits to farmers both biophysically, socially and economically. Certain commodities are said to be biophysically feasible if the commodity is cultivated in accordance with the agroecological zone, socially feasible if the commodity provides opportunities for business, can be done and accepted by the local community so that it has an impact on employment. While economically feasible means that the commodity is profitable.

1.3.2 Location Quotient (LQ)

Some methods for sorting between base activities and non-base activities are direct methods, indirect methods, mixed methods, and location quotient methods (Tarigan R, 2005). In this study, the location quotient (LQ) method is used, this LQ method is a comparison between the relative share of "i" commodity production at the provincial level to the total production in the Province with the relative share of "i" commodity production at the national level against total production in National level. If you want to describe it to the district level, it means that the commodity "i" at the district level compared to the total production in the district is then compared again with the production of "i" commodities at the Provincial level against the total production at the Provincial level, and so on. Secondary data analysis from the Central Statistics Agency (BPS) included data on production, harvested area, area of immature plantations, planted area , old / damaged plants. Production is the main indicator in LQ calculation, because the production of a commodity is the final resultant of all cultivation systems. If the production of a

134

commodity is high and tends to increase every year, then it is assumed that the commodity is in great demand by the community, which has an impact on real income increases. High interest in this commodity will certainly be followed by better care than other commodities with lower production.

2 METHODOLOGY

For determining, the selection of an area for the development of a rice crop, the government needs to study the potential of each region, using this rice sector base sector can help in decision making. The method used in this study is a method of analyzing secondary data using Location Quotient (LQ) analysis and in-depth interviews. LQ analysis techniques to determine the ability of an area in a particular sector. Basically, this technique presents a relative comparison between the ability of a sector in a known area with the ability of the same sector in a wider area. Based on basic definition of economic theory, LQ techniques can be used to determine the leading sectors with GRDP data per sector while for leading commodities in the region in the form of production data.

LQ technique can also be used to map regional leading commodities, data commonly used to identify leading commodities, namely production data, so it can be assumed that the LQ technique shows the comparative advantage of a commodity based on its production by using an economic model that measures relative concentration through the concentration of the relative LQ (Isserman, 1977; M. Miller M. & Wright, 1991; Sayago-Gomez & Stair, 2015; Ron Hood., 1998) and regression analysis. The LQ formula is as follows:

$$LQ = \frac{si/st}{Si/St} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(1)$$

Based on the formula then each respective commodity is lowered as follows:

$$LQ = \frac{N_{SekKarKab}/N_{tSekKebKab}}{N_{KarSum}/N_{tKebSum}} \dots\dots\dots\dots\dots\dots\dots(2)$$

LQ calculation model for district rice in South Sumatra.

N_Sek Ber Kab = Number of district / city rice commodity food production

N $_t$ _ SECTION ON CITY = Total number of district / city commodity food production

N_ Ber Sum = Number of provincial rice food commodity production

N $_t$ _ Sum Pngn = Total Province commodity food production

With the LQ formula, an index will be produced to determine a sub-district including base or non-base in a food crop sector. if LQ> 1 (Base Sector), LQ = 1 (Self-Sufficiency), LQ <1 (Non-Base Sector).

3 DISCUSSION

The role of the agricultural sector can help improve the economic growth of an area, moreover it is one of the most dominant food commodities for most Indonesian people where rice is a food ingredient that is easily converted into energy, in addition to containing enough nutrients and boosters for the body. To reach the adequacy of food originating from rice / rice, the government, both since the Dutch colonial period and after independence and until now, has implemented various policies in line with population growth. One of the Indonesian government's development programs today is the development of the region which is focused on regional development by accommodating the characteristics and capabilities of each region. Development in an area will be more optimal if it is based on the introduction of leading commodities and its proper use while maintaining sustainability environment (Marina et al, 2018)

According to Nugroho (2016) with using also input-output after knowing leading commodities, the policy is related to the findings of the Input-Output approach that is related to affordability and accessibility to inputs, the development of farmers on input use (education and information), as well as the price stabilization of rice and its derivatives. Whereas related to the spatial aspect, soft infrastructure plays an important role in strengthening internal capacity of farmers and instructors. Hard structure shows that need to restore irrigation systems, and facilitate the use of better seeds and fertilizers. In increasing production, an increase in productivity is carried out through a variety of new technologies ranging from seed supply, till the post-harvest land processing, also increasing cropping area and harvested area through an increase in the rice cropping index. Similarly, South Sumatra provincial and district /city has a rice production quantities varied as table 1

Table 1: Amount of Rice Production / ton/ Regency / City of South Sumatra Province 2010-2016

No.	Regency/City	2010	2011	2012	2013	2014	2015	2016
1	Ogan Komering Ulu (OKU) Regency	56621.51	68872.5	89505.35	87747.98	71241.91	69488	54624.81
2	Ogan Komering Ilir Regency	748815	572915	1116970	1059668	1125760	624017	603075.7
3	Muara Enim Regency	151755	133643.8	127701.3	120340.8	93864.34	77629.43	84486.35
4	Lahat Regency	153253.78	157608.5	124500	153555	150850	159669	161404.7
5	Musi Rawas Regency	274325	280331	144232	203628	250504	276918	277569.3
6	Musi Banyuasin Regency	294693.488	265573	224654	260148	239665	249851	265026.9
7	Banyuasin Regency	795550.8	820337.7	882548.8	943104	915442	1236750	1455995
8	OKU Selatan Regency	127841	84283	125421	162691.1	174595	202658	222300.7
9	OKU Timur Regency	768288.8	896377.7	708263.3	730147	717651.9	864437	4862
10	Ogan Ilir Regency	201267	200112	173057	226937	216624	175929	217875
11	Empat Lawang Regency	105273	124463	123907	115430	140526	123746	128973.8
12	Palembang City	25052	20538	28828.7	29628.72	19099	25912	26087.51
13	Prabumulih City	4937.18	1131237	980	925.04	2825.5	1623	1569.20
14	Pagar Alam City	31816.91	50323.08	29299	33474.04	48259.22	43040	45720.94
15	Lubuk Linggau City	24186.89	25539.6	14965.27	22444.46	0	25208	0

Source: BPS Publication City
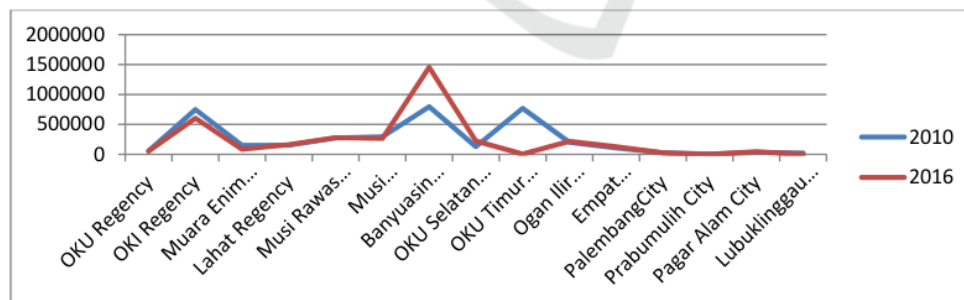
District of South Sumatra Province in 2010-2016

Figure 1: Number of Rice Production Regencies / Cities in South Sumatra 2010, 2016

Figure 1 shows the amount of paddy production in 2010 and 2016 in the Regency / City of South Sumatra, from the figure it can be seen that there is a quite significant increase and a decrease in each Regency / City of South Sumatra Province. In 2010, East OKU was the Regency that had the most number of paddy and field rice production, while Prabumulih City was the city that had the least

amount of rice production. In 2016 the Banyuasin Regency was the district that produced the highest number of rice plants and the City of Lubuklinggau did not produce paddy plants. From Figure 1 above, it can also be concluded that the average amount of rice production in the regency / city has experienced an increase and decrease, it can be caused by factors that affect the production of rice plants themselves.

South Sumatra has 11 regencies and 4 cities that have different natural resources. One of the natural resources owned by each regency / city in South Sumatra is rice crops which are known that rice crops are food crops that are used as a source of daily staple food needs. The following is a Table of Average Contributions of Rice Production in Districts/Cities in South Sumatra in 2010-2016.

Table 2: Average Contribution of Total Paddy Production Regency / City of South Sumatra Year 2010-2016

No.	Regency / City	Contribution Value (%)
1.	Ogan Komering Ulu (OKU) Regency	1.75
2.	Ogan Komering Ilir Regency	20.71
3.	Muara Enim Regency	2.78
4.	Lahat Regency	3.75
5.	Musi Rawas Regency	5.73
6.	Musi Banyuasin Regency	6.37
7.	Banyuasin Regency	25.18
8.	Ogan Komering Ulu Selatan Regency	3.94
9.	Ogan Komering Ulu Timur Regency	16.13
10.	Ogan Ilir Regency	5.00
11.	Empat Lawang Regency	3.05
12.	Palembang City	0.62
13.	Prabumulih City	3.42
14.	Pagar Alam City	0.99
15.	Lubuklinggau City	0.39

Source: BPS, South Sumatra Province Regency / City in Figures 2010-2016 (processed data)

That can be seen from the table above. Banyuasin regency is The first regency of 15 regencies/cities in South Sumatera Province which gives the highest contribution in paddy production, which is 25.18% in the period 2010-2016, followed by Ogan Komering Ilir and Ogan Komering Ulu Timur Regencies 20.71% and 16.13%. Whereas the City of Lubuklinggau is the City that gives the smallest contribution in rice production, which is 0.39%, and is followed by the City of Palembang and the City of Pagaralam which has not contributed 1% to the total production of paddy plants which are 0.62% 0.98% in south Sumatera province. This is the structure of rice plants in their respective regions.

There are two types of paddy plants in South Sumatra Province, namely Wetland paddy and Dryland paddy. Location Quotient Analysis is used to find out which District / City is in South Sumatra Province which has a number of rice production categories which can be categorized into both leading and non-leading sectors. In this LQ analysis, determining the amount of production that has a LQ> 1 can be categorized into the base / superior sector and if LQ<1 Value is categorized into non-base. The following are the results of the Location Quotient (LQ) analysis in the District/ City of South Sumatra Province from 2010-2016.

Table 3: *Location Quotient* (LQ) Average Calculation Results, Total Wetland Paddy Production, Regency/City of South Sumatra Province 2010-2016

Base Sector LQ>1	Non Base Sector LQ<1
1. Lahat Regency	1. Ogan Komering Ilir Regency
2. Musi Rawas Regency	2. Ogan Komering Ulu Regency
3. OKU Timur Regency	3. Muara Enim Regency
4. Ogan Ilir Regency	4. Musi Banyuasin Regency
5. Empat Lawang Regency	5. Banyuasin Regency
6. Palembang City	6. Ogan Komering Ulu (OKU) Selatan Regency
7. Pagaralam City	7. Lubuk Linggau City
	8. Prabumulih City

From the results of the average calculation of the LQ analysis above, it is found that there are 7 districts / cities that have a number of wetland paddy production which is included in the base sector category, namely: (1) Lahat Regency, (2) Musi Rawas Regency, (3) OKU Timur Regency, (4) Ogan Ilir Regency, (5) Empat Lawang Regency, (6) Palembang City, (7) Pagaralam City. Of the seven Regencies / Cities above the City of Palembang and the City of Pagaralam which had the highest LQ value of 1.17 this was due to the non-production of other types of paddy other than the type of paddy.

Regency / City of South Sumatra Province whose total production of Wetland Paddy Plants included in this basic sector category has good potential to be maintained and improved again. So that, increasing the number of production activities from this sub-sector will also affect economic activities from other sectors. This sector also has a prominent role in the province of South Sumatra. LQ> 1 shows that the role of sector i is quite prominent in the area and often as an indication that the area is surplus in product i and exports it to other regions. This area is able to export products to other regions or abroad because they are able to produce these products cheaper and more efficiently. Regency/City in South Sumatra Province which is not included in the base sector category for the total production of wetland paddy plants but nonbasis where the LQ value of the production of wetland paddy is less than 1 is OKI Regency (0.73), Muara Enim (0.87), Musi Banyuasin (0.89), OKU Selatan (0.72), and Lubuklinggau City for (0.85) are almost close to 1, which means that the amount of paddy rice production can still be developed into a base sector. However, for Banyuasin, Prabumulih, and Ogan Komering Ulu Regencies which have the lowest LQ value, that is equal to (0.16) for Banyuasin Regency and Prabumulih City and the LQ value is (0.31) for Ogan Komering Ulu Regency, which means that the Regency / City has not been able to meet their needs. for wetland paddy plants and the potential to import from other regions.

The average Dryland paddy production LQ calculation shows that there are 6 Regencies / Cities in South Sumatra Province which are included in the base sector category for Dryland paddy plants production where the LQ value of the total paddy crop production is more than 1. The highest regency with LQ value (28.9) are Ogan Komering Ilir Regency, then Ogan Komering Ulu Regency with LQ values (9.62), Muara Enim Regency (5.37), Prabumulih City (3.71) , Musi Banyuasin Regency (2.10) , and Lahat regency (1.17) which means that the area has been able to meet the production needs of paddy plants and can conduct doing the activity of export to other regions. For Regencies/Cities that are not included in the base sector category means the amount of field rice production in the area has not been able to meet the needs of the area and is likely to require the production of dryland paddy plants from other regions are OKU, Musi Rawas, Banyuasin, OKU Timur, Ogan Ilir, Empat Lawang, Lubuklinggau City, Palembang and Pagaralam.

Table 4: *Location Quotient* (LQ) Average Calculation Results Total, Dryland Paddy Production, Regency / City of South Sumatra Province 2010-2016

Base Sector LQ> 1	Non-Basis Sector LQ <1
1. Ogan Komering Ilir Regency 2. Ogan Komering Ulu Regency 3. Muara Enim Regency 4. Prabumulih City 5. Musi Banyuasin Regency 6. Lahat Regency	1. OKU Selatan Regency 2. Musi Rawas Regency 3. Banyuasin Regency 4. OKU Timur Regency 5. Ogan Ilir Regency 6. Empat Lawang Regency 7. Lubuk Linggau City 8. Palembang City 9. Pagaralam City

Source: (processed data , 2018

4 CONCLUSION

The leading commodity of paddy plants can be used as a basis for determining the priority of developing agricultural crops that should be developed and are the main foodstuff for the people of Indonesia. In South Sumatera there are two types of paddy Plants that are developed, namely Wetland paddy and Dryland Paddy. Using Location Quotient Analysis (LQ) to find out which District / City is in South Sumatera Province which has a total production of Wetland paddy plants that can be categorized into both base and nonbased sectors . Paddy plants that are developed are Wetland paddy and Dryland Paddy. Based on the LQ calculation that the area included in the base sector for Wetland paddy plants is Lahat Regency, Musi Rawas Regency, OKU Timur Regency, Ogan Ilir Regency, Empat Lawang Regency, Palembang City, Pagaralam City. Areas with non-base categories are OKI Regency (0.73), Muara Enim (0.87), Musi Banyuasin (0.89), OKU Selatan (0.72), and Lubuklinggau City (0.85) close to 1 which means that the amount of wetland paddy production can still developed into a base sector. However, for Banyuasin, Prabumulih, and Ogan Komering Ulu Regencies which have the lowest LQ value which is equal to (0.16) for Banyuasin Regency and Prabumulih City and the LQ value is (0.31) for Ogan Komering Ulu Regency .

Regency / City of South Sumatra Province which is included in the base sector category for dryland paddy production where the LQ value of the total production of dryland paddy is more than 1. The highest regency with LQ value (28.9) is Ogan Komering Ilir Regency, then Ogan Komering Ulu Regency with LQ values (9.62), Muara Enim Regency (5.37), Prabumulih City (3.71), Musi Banyuasin Regency (2.10), and Lahat Regency (1.17). Non-base sector categories are OKU Selatan Regency, Musi Rawas Regency, Banyuasin Regency, OKU Timur Regency, Ogan Ilir Regency, Empat Lawang Regency, LubukLinggau City, Palembang City, Pagaralam City . Having known the district / city including the base and non-base categories, it is easier to carry out an increase in the production of paddy. So that the objectives of agricultural development improve the yield and quality of production, increase the income and standard of living of the community can be realized.

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