

Export Potential of Superior Agricultural Commodities in West Sulawesi, Indonesia

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Abstract

The acceleration of the export development of Indonesian agricultural products has fluctuated and the export value of West Sulawesi has increased. This study aims to identify the superior agricultural commodities and export potential of the superior agricultural commodities of West Sulawesi Province. The research used time series data (2013-2018) from the Indonesian Central Bureau of Statistics. The research employed Location Quotient and Klassen Typology Analysis. The results show that the superior agricultural commodities of West Sulawesi are corn (LQ=1.479) for food crops, durian (1.507), langsung (6,523) for horticultural crops, oil palm (1.409), coconut (1,729), coffee (1,029) and cocoa (12,459) for estate crops. The export potential of the leading commodities of West Sulawesi with Klassen typology analysis, namely oil palm (potential for advanced and fast growing exports), coconut, langsung, cocoa, and coffee (potential for developing exports), while corn and durian (potential for advanced but slow growing).

Keywords: superior commodity, export potential, agricultural sector

I. Introduction

As an agricultural based country, agriculture is one of the important sectors in Indonesian economy. The role of the agricultural sector in providing employment, providing food, and contributing to foreign exchange through exports and the added status of Indonesia as a member country of the World Trade Organization (WTO) to make trade between countries in the world are increasingly opened.

Economic giants such as the United States, China, Japan, and so on still dominate both the volume and the value of Indonesia's agricultural commodity exports. However, with global economic conditions that are still experiencing stagnation, especially in developed countries, Indonesia can expand its wings to export to countries that are currently of little value and can also open new trade with countries that have never previously conducted activities. trade with Indonesia.

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Now and in the future, the challenges that will be faced are not easy, especially related to the export of local agricultural products. Amidst the global economic condition, it is still in a period of consolidation, which is reflected in the relatively low level of economic growth in major countries accompanied by low reference interest rates and inflation. Slowing economic growth in major countries, some of which are major trading partners with Indonesia, will affect export performance, including for the agricultural sector and supply chain (Indriani et al., 2020). The agricultural sector in West Sulawesi has the potential to be developed as a spur to accelerate economic growth in the province of West Sulawesi which is experiencing a slowdown.

The vast land with a tropical climate gives people the opportunity to grow crops all year round. This is beneficial for the people of Indonesia, especially West Sulawesi, by having an abundance of natural resources that can make West Sulawesi a prosperous area capable of meeting people's food needs, as employment opportunities, exporting agricultural products to increase foreign exchange and increase economic growth.

Accelerating economic growth and amidst the development of exports of Indonesian agricultural products which have fluctuated and the development of the export value of West Sulawesi has increased, it is hoped that West Sulawesi can take advantage of this momentum in addition to investment and fulfillment of demand which are the main drivers of commodity trading activities and even exports, This research aims to 1) analyze the superior agricultural commodities in West Sulawesi Province and 2) to analyze the export potential of superior agricultural commodities in the province.

II. Method

Scope and Data

The scope of this research is to identify superior agricultural commodities in West Sulawesi Province and identify export potentials of leading commodities in the Province. Secondary data is taken from official publications, the Central Bureau of Statistics, the Ministry of Agriculture, the Ministry of Trade, and other published sources, as well as previous research. Data collection techniques are carried out by recording directly in the form of time series data in the National perspective from 2013-2018 from the Indonesian Central Statistics Agency. In addition, other supporting data were obtained through various literature and other relevant sources.

III. Analysis

Location Quotient Analysis

The research employed Location Quotient Analysis method to identify superior agricultural commodities in West Sulawesi. With the LQ analysis equation it is formulated as follows (Sjafrizal 2012):

$$LQ = \frac{P_i/P_P}{P_i/P_N}$$

Where LQ = Location Quotient coefficient, P_i = the amount of commodity i production in the province, P_P = total production of all agricultural commodities in the province, P_i = total production of commodity i in Indonesian, P_N = total production of all agricultural commodities in Indonesia. Based on the

formulation of equation above, there are three possible LQ values that can be obtained (Sjafrizal 2012), namely: If $LQ > 1$, it is a basic commodity (superior), it means that the province's level of specialization is higher than the national level; If $LQ < 1$, it is a non-basic commodity (non-superior), that is, a commodity whose level of specialization is lower than the National level; If $LQ = 1$, it means that the provincial level of specialization is the same as the national level.

Typology Klassen Analysis

Typology Klassen analysis is used with the aim of identifying the export potential of the region's leading commodity sectors by taking into account the sectoral growth basis using Klassen (Rustiadi et al. 2011). The growth rate of agricultural export value i at the provincial level (rip):

$$rip = \frac{pip_t - pip_{t-1}}{pip_{t-1}} \times 100\%$$

Where pip = export value of commodity i at provincial level (millionUS\$), t = year of export. The growth rate of the export value of agricultural commodity i at the national level (ri):

$$ri = \frac{pi_t - pi_{t-1}}{pi_{t-1}} \times 100\%$$

where pi = export value of commodity i at national level (millionUS\$), t = year of export. The contribution of agricultural commodity i to the total export value at the provincial level (yik):

$$yip = \frac{pip_t}{ptp_t} \times 100\%$$

Where pip = export value of commodity i at provincial level (millionUS\$), ptp = total export value of all provincial level commodities (millionUS\$), t = year of export. The contribution of agricultural commodity i to the total export value at the national level (yi):

$$yi = \frac{pin_t}{ptn_t} \times 100\%$$

Where pin = export value of commodity i at the national level (millionUS\$), ptn = total export value of all national level commodities (millionUS\$), t = year of export

IV. Results and Discussion

Featured Commodities

As clearly shown in Table 1, LQ results of Food Crops in West Sulawesi Province with a national perspective showing that the food crop sector has the potential to become a leading commodity, namely corn (LQ value = 1.479), meaning that there has been a development in production that is higher than the average development of all regional commodities in the Province of Indonesia and there are a concentration of activities in these commodities. Therefore, this sector is a commodity with comparative advantage above average. The commodity is capable of self-sufficiency in agricultural products and has the potential to export agricultural products. (Sjafrizal, 2012) said that if the value of $LQ > 1$, then the commodity sector can meet the needs of its

own region and even be able to meet the needs of other regions (exports) (Carroll et al. 2007; Chiang 2008; Jing et al. 2009) development is optimal and can be taken into consideration in the formulation of production development policies to spur regional economic growth as an economic base.

A significant increase occurred in 2016-2017 by 44%. This is one of the triggers for the corn commodity to have a comparative advantage, this was also confirmed by Hamzah (2017) West Sulawesi Provincial Government quoted from online media (wartaekonomi.co.id) saying that in 2017 West Sulawesi Province had received an allocation of assistance from the Ministry of Agriculture. as much as 40 thousand hectares for the expansion of the area for developing corn plants. Three areas are centers of maize production, including Mamuju District, Mamuju Tengah District, and Pasangkayu District.

Table 1. *Location Quotient (LQ) Results of Food Crops, West Sulawesi 2013-2018*

Year	Food Crop Commodities						
	Rice	Corn	Soybean	Peanut	Green Bean	Cassava	Sweet Potato
2013	0.915	1.015	0.222	0.123	0.440	0.324	0.705
2014	0.983	0.902	0.649	0.122	0.232	0.198	0.382
2015	0.997	0.836	0.713	0.088	0.216	0.186	0.620
2016	0.822	1.433	0.896	0.092	0.134	0.151	0.370
2017	0.715	2.179	0.784	0.069	0.224	0.158	0.235
2018	0.574	2.510	1.649	0.111	0.197	0.123	0.451
Average	0.834	1.479	0.819	0.101	0.241	0.190	0.461

Table 2 shows the LQ results of the leading commodities according to Horticultural Plants in West Sulawesi Province with a national perspective, namely durian (LQ value = 1.507) and langsung (LQ value = 6.523), meaning that there has been a development of production higher than the average development of all regional commodities in all provinces in Indonesia. -Indonesia and there is a concentration of activities in these commodities. Thus durian and langsung commodities in West Sulawesi Province have become a potential export sector because they have exceeded the local needs of the region so that they can be distributed outside the region as one way to increase regional income.

Meanwhile, other horticultural commodities are deemed unable to meet the needs of the region, so it is necessary to have policies regulating to increase production and sales. With the results of the analysis that has

been carried out, the regional government will be able to determine the most appropriate steps to significantly improve the regional economy based on the existing potential and communication strategy (Unde et al., 2020).

Based on BPS data from West Sulawesi, it shows that in West Sulawesi Province which is the center of durian production, namely in Majene, Polman, Mamuju, and Central Mamuju Districts, although productivity has fluctuated, the trend of these commodities is still superior to other horticultural commodities in West Sulawesi Province, while for Langsat commodity production centers are in Polman and Mamuju Tengah districts. These commodities have the potential to be exported outside West Sulawesi region because the productivity of these two commodities has been able to exceed local needs.

Table 2. *Location Quotient* (LQ) of Horticulture, West Sulawesi 2013-2018

Year	horticultural commodity								
	Onion	Large Chilies	Bird's eye chilies	Mango	Durian	Papaya	Banana	Pineapple	Langsat
2013	0.019	0.196	0.405	0.735	1.100	0.196	1.167	0.064	5.344
2014	0.068	0.184	0.443	0.874	1.636	0.296	0.799	0.087	8.625
2015	0.058	0.139	0.264	0.838	2.142	0.272	0.635	0.052	7.371
2016	0.025	0.135	0.324	0.769	2.609	1.060	0.614	0.077	11.070
2017	0.017	0.134	0.200	0.327	0.652	0.491	0.962	0.019	3.708
2018	0.039	0.202	0.214	0.365	0.900	0.260	0.874	0.020	3.021
Average	0.038	0.165	0.308	0.651	1.507	0.429	0.842	0.053	6.523

Table 3 shows the LQ results of the leading commodities according to Plantation Crops in West Sulawesi Province with a National perspective, namely oil palm (LQ value = 1.409), coconut (LQ value = 1.729), coffee (LQ value = 1.029), and cocoa (LQ value) = 12.459) means that these commodities have progressed in production higher than the average development of all regional commodities in provinces throughout Indonesia and there is a concentration of production activities in these commodities. West Sulawesi Province is one of the production centers for plantation products in Indonesia, the potential of plantation commodities in West Sulawesi is dominated by supporting adequate resources and plantation areas to increase plantation production.

Table3. *Location Quotient* (LQ) of Estate Crops, West Sulawesi 2013-2018

Year	Plantation Commodity				
	Palm	Coconut	Coffee	Cocoa	Sago
2013	1.491	2.174	1.470	14.594	0.081
2014	1.511	2.071	1.541	15.344	0.121
2015	1.543	2.123	1.735	15.663	0.254
2016	1.626	1.510	0.573	11.029	0.207
2017	1.313	1.113	0.401	8.076	0.134
2018	0.967	1.384	0.455	10.047	0.139
Average	1.409	1.729	1.029	12.459	0.156

Central Statistics Agency in December 2019 shows that, the area of oil palm plantations in Indonesia reaches 14.32 million hectares. Indonesia shifted the position of Malaysia which previously occupied the first position for many years. The development of oil palm production in West Sulawesi from year to year tends to increase, oil palm production continues to increase in 2015 - 2017 and has decreased in 2018. Palm oil productivity can improve the economy of West Sulawesi. Palm oil industry is currently one of the pillars and drivers of the economy in West Sulawesi. Apart from oil palm, coconut, coffee and cocoa are also superior comparative commodities with an LQ value > 1 (Table 3).

Export Potential of Leading Agricultural Commodities

To identify the export potential of West Sulawesi's superior agricultural commodities using Klassen Typology analysis, an analysis tool that can be used to identify sectors, sub-sectors, businesses, or priority commodities and export potential of an area. The average value of export commodity growth in West Sulawesi is shown in the following table. Table 4 shows the results from Klassen Typology, the export potential of superior agricultural commodities in West Sulawesi Province is obtained as follows.

Quadrant I contains oil palm commodities with the characteristics of a superior export value commodity as well as significant and rapid growth. Where the growth rate of oil palm in West Sulawesi Province is higher than the growth rate of oil palm in Indonesia, with growth rates of 0.971 and 0.978 for contribution value.

Table 4. The growth rate of typology classification by the leading commodities

	<i>yik > yi</i>	<i>yik < yi</i>
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<i>rik>ri</i>	<u>Quadrant I</u>	<u>Quadrant II</u>	
	.Palm	Langsat Cocoa	Coconut Coffee
<i>rik<ri</i>	<u>Quadrant IV</u>	<u>Quadrant III</u>	
		Corn	Durian

Quadrant II, there are commodities of coconut, coffee, cocoa, and langsung with characteristics of export potential that are growing rapidly. In this quadrant, the growth rate of the production value of leading commodities in West Sulawesi is higher than the growth rate in Indonesia. However, the contribution of these commodities to the export value is smaller in West Sulawesi than Indonesia. Efforts that can be made towards this fast-growing commodity are to increase the contribution of West Sulawesi Province if there is sufficient land available and farmers' interest in the commodity if the price increases economically, with efforts, among others, the use of special superior seeds, so that this commodity can compete with other agricultural commodities.

Quadrant III, with the characteristics of developing export potential and slow/depressed growth, are corn and durian. Efforts that can be made for this advanced and depressed growing commodity are by increasing the rate of production growth in West Sulawesi which will automatically increase its contribution to the national level. Some of the efforts that can be made include: Evaluating agricultural improvement programs, especially this commodity, to further increase production. Then by increasing the agricultural technology innovation of these commodities to help increase production, for example, the use of superior seeds and increase the knowledge of farmers. **Quadrant IV** agricultural commodities with export potential characteristics that are stagnant growth and relatively lagging, but this quadrant does not have any superior commodities.

The plantation sector is the sector with the second-largest contribution after the processing industry to GRDP in West Sulawesi, especially palm oil. This commodity is a provider of raw materials for the industrial sector, employment, and foreign exchange earner of West Sulawesi, besides that West Sulawesi is the largest producer of palm oil in eastern Indonesia so that palm oil is one of the plantation commodities that has an important role in economic activity in Indonesia. West Sulawesi Province. This is inseparable from the contribution of three districts in West Sulawesi as a buffer for current palm oil production, namely Mamuju, Central Mamuju and Pasangkayu Districts. The oil palm commodity in Pasangkayu district is the largest producer with a production of 142,976 tonnes, followed by Mamuju Tengah district with 106,003 tons, and Mamuju district with 12,822 tons and is expected to continue to grow in the following years. The prospect of global palm oil consumption is predicted to grow by 7.1 percent in 2019 and 5.1 percent in 2020. This figure will automatically be much higher than the average achievement of the last 5 years, which only ranges from 2.9

percent. Meanwhile, the research institute revealed that the potential for oil palm production could reach 7-9 tons per ha per year. This means that current productivity is not satisfactory (Amaliah, 2019).

In terms of Good Agricultural Practices, farmers still tend not to implement best management practices that actually can boost palm productivity. The deficiency of nutrients in soil and deficiency of fertilizers, especially after harvest, are problems that often occur in smallholder plantations. West Sulawesi can maximize the economic potential in the palm oil industry, then hopes that research will also be improved so that it can maximize productivity and other potentials from the oil palm plantation industry, affect value of the commodity.

V. Conclusion

It can be concluded that, the main agricultural commodities of West Sulawesi with Location Quotient analysis ($LQ > 1$), namely corn (1.479) for food crop commodities, Durian (1.507), Langsat (6,523) for horticultural crops, while for oil palm plantation commodities (1.409), Coconut (1,729), Coffee (1,029) and Cocoa (12,459). The export potential of West Sulawesi's leading commodities with Typology Klassen analysis, namely Palm Oil (advanced and fast-growing export potential), Coconut, Langsat, Cocoa, and Coffee (growing / potential export potential), while Corn and Durian (advanced and growing export potential) slow). The West Sulawesi government should pay special attention to the development of agricultural systems in producing superior commodities that have the potential for export to increase farmers' income and also contribute to the regional economy.

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