THE ROLE OF THE AGRICULTURAL SECTOR IN THE ECONOMY OF WEST JAVA PROVINCE FOR THE 2010-2019 PERIOD

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ABSTRACT

The agricultural sector of West Java Province has a strategic function as a national food barn and supports the needs of basic foodstuffs, especially rice. However, on the other hand, the production of rice and most of the agricultural sector commodities of West Java Province continues to decline. It aims to analyze the contribution of the agricultural sector and the agricultural subsector. Analyze and classify the position of the agricultural subsector. Analyze and classify the growth and competitiveness of agricultural subsectors. Analyze and identify the agricultural subsectors that are being developed. The data analysis consists of Contribution Analysis (Share), Klassen Typology Analysis, Shift Share Analysis, Static Location Quotient Analysis, and Dynamic Location Quotient Analysis in the period of research analysis, namely 2010-2019. The results showed that the overall agricultural sector contribution was 8.11%, the largest contribution was the food crop subsector 3.69%, horticultural crop subsector 1.58%, livestock 1.06%, fisheries 0.85%, plantation crops 0.73%, and the smallest forestry 0.08%. The food crops and horticultural crops subsector is positioned as an advanced but depressed subsector, while the plantation, livestock, forestry, and fisheries subsector as a subsector is relatively lagging. The fisheries subsector has faster growth, while the food crops, horticultural crops, plantation crops, animal husbandry, and forestry subsectors have slower growth, and the entire agricultural subsector has less competitiveness. The food crops and horticultural crops subsector is the leading subsector, but all agricultural subsectors have the potential for slower development in the future. The results of this study are expected to be input and consideration for the West Java Provincial Government in developing policies related to agricultural development.

Keywords: *Featured Sector*; *Klassen Typology*; *Shift Share*; Location Quotient*; Dynamic Location Quotient*

INTRODUCTION

West Java is one of the provinces in Indonesia with large and varied agricultural potential. The agricultural sector of West Java Province has a strategic function as a national food barn and supports the largest staple food needs in Indonesia, especially rice. The rice commodity of West Java Province has always contributed the most to national rice production for 20 years, namely from 1993-2013. However, starting from 2014-2019, the rice contribution of West Java Province has decreased, even its contribution has become below that of East Java and Central Java Provinces in the last two years, namely 2018 and 2019, can be seen in Figure 1. Not only rice commodities, according to ministry data in 2013; 2018; & 2019, BPS in 2021, and BPS of West Java Province in 2020, the production of most of the commodities in other agricultural subsectors also experienced decreasing.

Looking at the economy, based on BPS data from West Java Province in 2015; 2018; & 2020, the GRDP of ADHK in the agricultural sector and each agricultural subsector of West Java Province in 2010-2019 continues to increase. This shows an increase in the real added value of products in the agricultural sector and each agricultural subsector of West Java Province. Likewise, the growth rate of ADHK's GRDP in the agricultural sector and each agricultural subsector of West Java Province in 2010-2019 increased. This shows the occurrence of positive economic growth in the agricultural sector and each agricultural

subsector of West Java Province. However, if you look at the distribution of the percentage of GRDP ADHB in the agricultural sector and each agricultural subsector of West Java Province in 2010-2019, it is known to have experienced a problem. This shows that actually the role of the agricultural sector and each agricultural subsector of West Java Province is also decreasing, as can be seen in Figure 1.
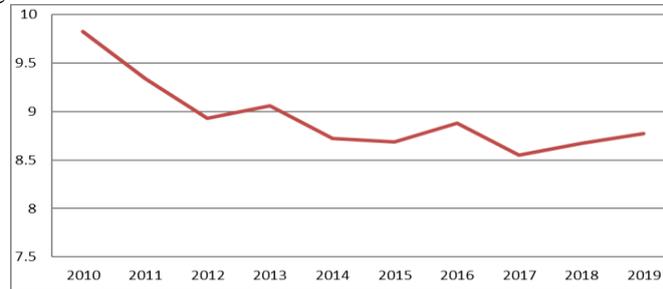

Figure 1. Development of ADHB GRDP Percentage Distribution in the Agricultural Sector of West Jaw A Province in 2010-2019 (%)
Source: BPS West Java Province, 2015; 2018; and 2020

The declining role of the agricultural sector of West Java Province has raised concerns about the fate of the agricultural sector of West Java Province in the future. Moreover, the agricultural sector of West Java Province has a strategic function in the national economy, which is to support the largest staple food needs, especially rice. Of course, it will also interfere with national food stability and security in the future if its role continues to decline. The agricultural sector is also an important sector for the economy of West Java Province itself, because the agricultural sector is the third largest sector contributing to the GRDP of West Java Province and the agricultural sector is still the third largest labor absorbing sector in West Java Province in 2019 (BPS West Java Province, 2020). However, the potential of the large agricultural sector of West Java Province has not been optimally utilized.

This research aims to 1) Analyze the contribution of the agricultural sector and each agricultural subsector, 2) Analyze and classify the position of the agricultural subsector, 3) Analyze and classify the growth and competitiveness of the agricultural subsector, and 4) Analyze and identify the agricultural subsector that is the future and in the economy of the West Java Province for the 2010-2019 period. The results of this study are expected to be useful, especially as input and consideration for the West Java Provincial Government in making policies related to agricultural development in West Java Province.

RESEARCH METHODS

Research Location and Time
The research was conducted in West Java Province during the period of research analysis, yes it was 2010-2019.

Data Type
The main data used are the Gross Regional Domestic Product (GRDP) of West Java Province based on Constant Prices (ADHK) 2010 and Indonesia's Gross Domestic Product (GDP) based on Constant Prices (ADHK) 2010, each of which was collected from 2010-2019. The main data were obtained from the Central Statistics Agency (BPS) of West Java Province and the Central Statistics Agency (BPS) of Indonesia.

Analytics Data
Share **Analysis**
Share is used to find out how much the agricultural sector and each agricultural

subsector contribute to the total GRDP of West Java Province. According to Tarigan (2005) in Mamondol (2014:3), the magnitude of the contribution of an economic sector can be calculated by the formula:

$$S = \frac{Pi}{Pt} \, X \, 100$$

Where:

S = Contribution of the agricultural sector or each agricultural subsector of West Java Province (%)

pi = GRDP of the agricultural sector or each agricultural subsector of West Java Province (billion rupiah)

Pt = Total GRDP of all economic sectors of West Java Province (Billion Rupiah)

Klassen Typology Analysis

Klassen's typology is used to determine the position of the agricultural subsector of West Java Province when compared to the agricultural subsector at the national level. The classification of the position of the growth pattern of an economic sector can be seen in the following figure.

Quadrant I Developed Sector gi>g and pi>p	Quadrant II Stagnant Sector gi<g and pi>p
Quadrant III Developing Sector gi>g and pi<p	Quadrant IV Underdeveloped Sector gi<g and pi<p

Figure 2. Classification Matrix of *Klassen* Typology
Source: Sjafrizal (2008:180)

Information:

gi = Growth rate of the agricultural subsector of West Java Province (%)

g = Growth rate of Indonesia's agricultural subsector (%)

pi = GRDP of the agricultural subsector of West Java Province (Billion Rupiah)

p = GDP of Indonesia's agricultural subsector (Billion Rupiah)

Shift Share Analysis

Shift Share is used to determine the growth of the agricultural subsector of West Java Province when compared to other agricultural subsectors in West Java Province. In addition, to find out the competitiveness of the agricultural subsector of West Java Province when compared to the agricultural subsector in other provinces. In this study, two components of Shift Share growth were used as the basis for the analysis, namely Proportional Growth and Regional Share Growth. According to Budiharsono (2001) in Alkaf *et al.* (2017:93-94), the two components can be calculated by the following formula.

A. Proportional Growth Component (PPij)

Proportional growth is the growth of a sector caused by the economic structure of the region itself, namely the influence of specialization on certain sectors, for example the differences of each sector in the demand for final products, the availability of raw materials, industrial policies, and market structure (Sjafrizal 2018:263-264).

$$PPij = (Ri - Ra) \,. Yij$$

Where:

PPij = Proportional growth component of the agricultural subsector of West Java Province

Ri = GDP ratio of Indonesia's agricultural subsector

Ra = Indonesia's total GDP ratio

Yij = GRDP of the agricultural subsector of West Java Province in 2010 (Billion Rupiah)

If PPij > 0, it means that the agricultural subsector of West Java Province has faster growth. If PPij < 0, it means that the agricultural subsector of West Java Province has slower growth

B. Regional Share Growth Component (PPWij)

Regional share growthis the growth of a sector caused by the specific conditions of the region itself that are competitive, for example the differences between regions in comparative advantages, access to markets, institutional support, facilities and infrastructure, and regional economic policies (Sjafrizal 2018:263-264).

$$PPWij = (ri - Ri).Yij$$

Where:

PPWij = Component of growth in the regional share of the agricultural subsector of West Java Province

Ri = GRDP ratio of Agriculture subsector of West Java Province

If PPWij > 0, it means that the agricultural subsector of West Java Province has better competitiveness (has a competitive advantage). If PPWij < 0, it means that the agricultural subsector of West Java Province has poor competitiveness (does not have a competitive advantage)

Static Location Quotient Analysis

Static Location Quotient (SLQ) or known as Location Quotient (LQ) is used to determine the agricultural subsector that is the base or flagship in the economy of West Java Province. According to Hood (1998) in Sudarmadji et al. (2013:103), the magnitude of the SLQ/LQ value can be calculated by the formula:

$$LQ = \frac{Pi/Pt}{Pii/Ptt}$$

Where:

Pi = GRDP of the agricultural subsector of West Java Province (Billion Rupiah)

Pii = GRDP of Indonesia's agricultural subsector (Billion Rupiah)

Pt = Total GRDP of all economic sectors of West Java Province (Billion Rupiah)

Ptt = Total GRDP of all sectors of the Indonesian economy (Billion Rupiah)

If LQ > 1, it means that the agricultural subsector of West Java Province is the base or superior subsector. If LQ = 1, it means that the agricultural subsector of West Java Province is not a base or superior subsector. If LQ < 1, it means that the agricultural subsector of West Java Province is not a base or superior subsector.

Dynamic Location Quotient Analysis

Dynamic Location Quotient (DLQ) is used to determine the potential development of the agricultural subsector of West Java Province when compared to the agricultural subsector at the national level, as well as the possibility of an agricultural subsector becoming a base or flagship in the economy of West Java Province in the future. According to Wiwekananda (2016) in Riantika and Utama (2017:1191), the magnitude of the DLQ value can be calculated by the formula:

$$DLQ = \left[\frac{(1 + Gi)/(1 + Gt)}{(1 + Gii)/(1 + Gtt)} \right] t$$

Where:

Gi	= Average growth rate of the agricultural subsector of West Java Province (%)
Gii	= Average growth rate of Indonesia's agricultural subsector (%)
Gt	= Average growth rate of all economic sectors of West Java Province (%)
Gtt	= Average growth rate of all sectors of the Indonesian economy (%)
t	= Number of years of research

If DLQ > 1, it means that the agricultural subsector of West Java Province has more development potentials t. If DLQ = 1, it means that the agricultural subsector of West Java Province has the same development potential. If DLQ < 1, it means that the agricultural subsector of West Java Province has the potential for slower development.

RESULTS AND DISCUSSION

Contribution of the Agricultural Sector and Agricultural Subsector in the Economy of West Java Province

Table 1. Value of Contribution of Agriculture Sector and Agricultural Subsector of West Java Province in 2010-2019 (%)

Business Field	Contribution
Agriculture Sector	8,11
a. Food Crops Subsector	3,69
b. Horticultural Crops Subsector	1,58
c. Plantation Crops Subsector	0,73
d. Livestock Subsector	1,06
e. Forestry Subsector	0,08
f. Fisheries Subsector	0,85

Source: BPS West Java Province, 2015;2018; and 2020 (processed)

Based on Table 1, it is known that the contribution of the agricultural sector during 2010-2019 averaged 8.11%. The Food Crops subsector made the largest contribution with an average of 3.69%. Then the Horticultural Crops Subsector by 1.58%, the Livestock Subsector by 1.06%, the Fisheries Subsector by 0.85%, the Plantation Crops Subsector by 0.73%, and the smallest Forestry Subsector which is only 0.08%.

The Position of the Agricultural Subsector in the Economy of West Java Province

It is known that in 2010-2019 the agricultural subsector of West Java Province was included in two position classifications. The agricultural subsectors that are included in quadrant II are advanced but depressed subsectors, namely the Food Crops Subsector and the Horticultural Crops Subsector. This means that the average contribution value of these subsectors in West Java Province is greater than the average contribution value of these subsectors at the national level. However, the average growth rate of these subsectors in West Java Province is lower than the average growth rate of these subsectors at the national level.

Meanwhile, the agricultural sector that is included in quadrant IV of the subsector position is relatively lagging, namely the Plantation Crops Subsector, the Livestock Subsector, the Forestry Subsector, and the Fisheries Subsector. This means that the average contribution

value of these subsectors in West Java Province is smaller than the average contribution value of these subsectors at the national level. Likewise, the average growth rate of these subsectors in West Java Province is lower than the average growth rate of these subsectors at the national level.

Growth and Competitiveness of Agricultural Subsector in the Economy of West Java Province

Table 2. Proportional Growth of Agricultural Subsector of West Java Province in 2010-2019

Business Field	PPij (%)
Food Crops Subsector	-43,80
Horticultural Crops Subsector	-20,78
Plantation Crops Subsector	-8,46
Livestock Subsector	-4,77
Forestry Subsector	-50,75
Fisheries Subsector	16,36

Source: BPS West Java Province, 2015 and 2020 and BPS, 2020 (processed)

Based on Table 2, it is known that the agricultural subsector of West Java Province in 2010-2019 which has a positive proportional growth (PPij > 0) is only the Fisheries Subsector of 16.36%. Meanwhile, other agricultural subsectors have negative proportional growth (PPij < 0), namely the Livestock Subsector of -4.77%, the Plantation Crops Subsector of -8.46%, the Horticultural Crops Subsector of -20.78%, the Food Crops Subsector of -43.80%, and the Forestry Subsector of -50.75%. This shows that the growth of the fisheries subsector is faster than the growth of other agricultural subsectors in West Java Province.

Table 3. Growth of Regional Share of Agricultural Subsector of West Java Province in 2010-2019

Business Field	PPWij (%)
Food Crops Subsector	-11,20
Horticultural Crops Subsector	-15,67
Plantation Crops Subsector	-41,25
Livestock Subsector	-14,76
Forestry Subsector	-24,88
Fisheries Subsector	-19,91

Source: BPS West Java Province, 2015, and 2020 and BPS, 2020 (processed)

Based on Table 3, it is known that none of the agricultural subsectors of West Java Province in 2010-2019 had a positive regional share growth (PPWij > 0). However, on the contrary, all agricultural subsectors have a negative regional share growth (PPWij < 0), namely the Food Crops Subsector of -11.20%, the Livestock Subsector of -14.76%, the Horticultural Crops Subsector of -15.67%, the Fisheries Subsector of -19.91%, the Forestry Subsector of -24.88%, and the Plantation Crops Subsector of -41.25%. This shows that the agricultural subsectors of West Java Province have less competitiveness than the competitiveness of these agricultural subsectors in other provinces or in another sense do not have a competitive advantage.

The Leading Agricultural Subsector in the Economy of West Java Province

Table 4. LQ Value of Agricultural Subsector of West Java Province in 2010-2019

Business Field	LQ
Food Crops Subsector	1,16
Horticultural Crops Subsector	1,08
Plantation Crops Subsector	0,19
Livestock Subsector	0,69

Business Field	LQ
Forestry Subsector	0,11
Fisheries Subsector	0,38

Source: BPS West Java Province, 2015; 2018; and 2020 and BPS, 2017; 2018; and 2020 (processed)

Based on Table 4, it is known that the agricultural subsector of West Java Province in 2010-2019 which has an LQ value greater than one (LQ > 1) is the Food Crops Subsector of 1.16 and the Horticultural Crops Subsector of 1.08. This shows that these subsectors are the base subsectors or subsectors that are the flagship in West Java Province. Meanwhile, the agricultural subsector that has an LQ value smaller than one (LQ < 1) is the Livestock Subsector of 0.69, the Fisheries Subsector of 0.38, the Plantation Crops Subsector of 0.19, and the Forestry Subsector of 0.11. This shows that these subsectors are non-basic subsectors or subsectors that are not superior in West Java Province.

Table 5. DLQ Value of West Java Province Agricultural Subsector in 2010-2019

Business Field	DLQ
Food Crops Subsector	0,0100
Horticultural Crops Subsector	0,0403
Plantation Crops Subsector	0,0002
Livestock Subsector	0,1164
Forestry Subsector	0,0011
Fisheries Subsector	0,1224

Source: BPS West Java Province, 2015; 2018; and 2020 and BPS, 2017;2018; and 2020 (processed)

Based on Table 5, it is known that none of the agricultural subsectors of West Java Province in 2010-2019 has a DLQ value greater than one (DLQ > 1). But on the contrary, all agricultural subsectors have a DLQ value smaller than one (DLQ < 1), namely the Fisheries Subsector of 0.1224, the Livestock Subsector of 0.1164, the Horticultural Crops Subsector of 0.0403, the Food Crops Subsector of 0.0100, the Forestry Subsector of 0.0011, and the Plantation Crops Subsector of 0.0002. This shows that the agricultural subsectors of West Java Province have the potential for slower development than the potential for the development of these agricultural subsectors at the national level. In another sense, that the agricultural sector does not have the potential to become a base or superior sector in West Java Province in the future.

CONCLUSIONS AND SUGGESTIONS

The agricultural sector of West Java Province in 2010-2019, average contribution of 8.11%. The largest contribution was in the food crop subsector at 3.69%. Followed by the horticultural crop's subsector 1.58%, the livestock subsector 1.06%, the fisheries subsector 0.85%, the plantation crop subsector 0.73%, and the smallest forestry subsector which is only 0.08%. The position of the food crop subsector and the horticulture crop subsector as an advanced but depressed subsector, while the plantation crop subsector, livestock subsector, forestry subsector, and fisheries subsector as subsectors are relatively lagging. The fisheries subsector is the only subsector that has faster growth than other agricultural subsectors in West Java Province, and all agricultural subsectors of West Java Province have poor competitiveness. The agricultural subsector that is the basis or flagship in the economy of West Java Province in 2010-2019 is the food crop subsector and the horticultural crop subsector. However, it is possible that all agricultural subsectors of West Java Province have the potential for slower development in the future.

With this research, it is hoped that it can be used as an evaluation and input material for the parties involved, especially the West Java Provincial Government. The advice that the author can give is that the food crop subsector and horticultural crop subsector be maintained as superior subsectors, because their contribution is large to the economy of West Java Province. The West Java Provincial Government must be able to spur increased production and reduce the rate of conversion of agricultural land as the dominant factor that hinders the increase in production of this subsector. The West Java Provincial Government also needs to provide more support for the fisheries subsector, because it grows faster and has great potential in the future. Institutions, facilities, and infrastructure, as well as fisheries technology must be improved so that competitiveness increases. Also, no less important for now, special attention is paid to the livestock subsector, the plantation crop subsector, and the forestry subsector. The West Java Provincial Government must reevaluate related policies, improve the institutions involved, facilitate facilities and infrastructure, and support technological developments in this subsector so that production and competitiveness can increase.

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