Development and Contribution of the Agricultural Sector to Gross Regional Domestic Products (GDP) Waropen District

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Abstract

The development of the agricultural sector in Waropen Regency has a trend line slope of 295,562 with a positive direction meaning that the trend of the agricultural sector in the RegencyWaropen during the period 2009 - 2015 had an increasing trend from year to year with an average increase of 18,310.9 or Rp. 18,310,900,000,- . Quantitative Research Methods. The results showed that the average contribution of the agricultural sector to the Gross Regional Domestic Product (Economic Development) in Waropen Regency during the 2009 - 2015 period was 35.54% per year. The development of the agricultural sector in Waropen Regency from 2009 to 2015 shows a situation that tends to increase from year to year. However, if you look at its contribution to Gross Regional Domestic Product (GRDP) or Economic Development, the contribution of the agricultural sector from year to year tends to decrease. The contribution of the agricultural sector from year to year tends to decrease due to several factors, including; The amount of the contribution of each sub-sector, the role of society, government policies, and the availability of natural resources.

I. Introduction

In carrying out national development planning activities, it cannot be separated from regional development planning activities. It is emphasized that the directions, policies and objectives of regional development are basically an integral part of national development. As a realization to achieve balance and reduce inequality between regions, development must always pay attention to sectoral and regional aspects. This balance and harmony is the key to the implementation of a harmonious and integrated national development. The regional/regional development approach as an effort to develop the community with the principle of equity, must also consider the potential of available resources. According to Thee Kian Wie, there are 3 (three) types of approaches in development, namely (1) an approach that is oriented to economic growth, (2) an approach to employment opportunities that is oriented to the expansion of job opportunities or job creation and (3) an approach that is oriented to the elimination of poverty. The current development implementation still focuses on economic growth in all sectors, where this has not fully touched on: expansion of job opportunities, income distribution and equitable distribution of development between regions which are the real development goals and objectives. In an effort to realize the welfare of the people so that it is more just and equitable, the government continues to strive for both economic growth as a result of development that must be felt by the community through real

equalization efforts in the form of increasing people's income and purchasing power. The success of development which is perceived as an improvement in living standards by all groups of society will increase people's awareness of the meaning and benefits of development so that people's motivation is increasingly motivated to take an active role in development. Talking about the agricultural sector, it cannot be separated from human resources because human resources are one of the most important factors in utilizing the sector. Where to take advantage of this sector requires human resources who have the skills (skills) to be able to use the agricultural sector in accordance with the way of utilization. Thus, economic development must be directed at increasing people's incomes and overcoming economic inequality and social inequality. Starting from the long-term development direction as implied above, the government has formulated and implemented various sets of regulations and policies that are oriented towards empowering the people's economy to increase people's income, especially in the agricultural sector as an inseparable part of Indonesia's national development paradigm. In the midst of today's current of privatization, the government's breakthrough will certainly be very well targeted if it is balanced with a sincere partisanship in strengthening the people's economic resilience, which is now depressed by the swift currents of global competition. The Department of Agriculture as an independent foster partner is one of the institutions that is morally called upon in an effort to increase people's income in rural areas, by realizing the equipment of farmers' facilities in the form of providing assistance with packages of equipment for work tools in the field, providing working capital and providing special training to farmers to be able to improve skills in the field of agriculture. Thus, in order to raise the standard of living of the farming communities in the village, it is appropriate that the Regional Government through the Department of Agriculture and Plantation and other related agencies can refer to its development by completing the agricultural facilities and infrastructure it needs to stimulate the motivation and creativity of the village community to be able to develop their potential. maximum for the sake of increasing the income and welfare of the community. Waropen Regency with a fairly large land area and has most of the population working in the agricultural sector, and where this sector contributes significantly to regional gross domestic product or economic development. Based on the background explanation, to find out how far the contribution of the agricultural sector to the economic development of the district, the authors are interested in studying this research further by raising the title of the study: "Analysis of the Role of the Agricultural Sector on the Gross Regional Domestic Product (GRDP) of Waropen Regency".

1.1 Formulation of the Problem
Starting from the background and description above, the formulation of the problem can be formulated as follows:
1. What is the trend of the development of the agricultural sector in Waropen Regency during the 2009-2015 period?
2. How is the contribution of the agricultural sector to the Gross Regional Domestic Product (GRDP) of Waropen Regency?
3. What factors which influence reception sector agriculture in Waropen District?

1.2 Restricting the Problem
Considering the wide scope of the problem and avoiding misinterpretation, this study limits the problem, namely regarding the development and contribution of the agricultural sector to the Gross Regional Domestic Product (GRDP) of Waropen Regency and the factors that influence the acceptance of the agricultural sector in Waropen Regency.

1.3 Research Objectives and Research Uses
a. Research Purposes
Based on the above problems   so the purpose of this writing is as follows:
1. To find out the trend of development sector agriculturein Waropen Regency during the period 2009 - 2015.
2. To find out the contribution of the agricultural sector to the Gross Regional Domestic Product (GRDP) of Waropen Regency.
3. For knowing factors what which influence agricultural sector revenue in Waropen Regency.

b. Research Use
It is hoped that this research can be useful as follows:
1. As input to the local government of Waropen Regency to be able to evaluate local government policies that have been running so far to increase revenue in the agricultural sector.
2. Can contribute to the development of science, especially those who want to research this issue more deeply.

c. Research Sites
In accordance with the title of the article, the location of the research area is Waropen Regency.

d. Data Source
The data used in the study are:
1. Primary data, namely data obtained directly from the Waropen District BAPEDA Office.
2. Secondary data, namely data obtained from literature review and other supporting information related to this research.

e. Data Collection Technique
Data collection techniques used in this study are:
1. Field Research (field research) that is data collection through study field   with   use method interviews and direct observation to the object of research. It is expected to obtain a set of authentic data that is needed in this research.
2. Research Library (library research) namely data collection through library research involving a number of references that are relevant to this research.

1.4 Framework
The development policy aims to improve the standard of living, intelligence and welfare for all people equally and fairly. In an effort to achieve sustainable economic development and achieve a just and prosperous society, efforts are needed that require people to have the motivation to work according to their existing capabilities. So the expected development here is development that includes community participation. Development will only succeed if the whole community participates actively and productively. This underlies that development must be carried out evenly and directed to the role of the community to further improve its business. Where the community and the private sector are parties that

have a large enough role in helping local governments to develop regions. The government is tasked with planning, deciding, determining and supervising various development programs, while the community and the private sector are expected to be involved in various actions and actions to make the development program successful. Local governments need to prepare many things that have not been in accordance with actual conditions, especially in terms of how local governments can improve their performance to manage and utilize several sources of regional income for regional development activities. The development of the agricultural sector in Waropen Regency is growing quite rapidly because Waropen Regency is one of the regencies in Papua Province which has a large land area and almost most of the population has a livelihood in the agricultural sector. With the increasing activity of the agricultural sector, it will increase revenue in the agricultural sector. For Waropen Regency, the agricultural sector plays a significant role in contributing to economic development or in supporting Gross Regional Domestic Product (GRDP).To find out the framework for thinking about the contribution of the agricultural sector to the economic development of Waropen Regency, it can be seen in the scheme below:
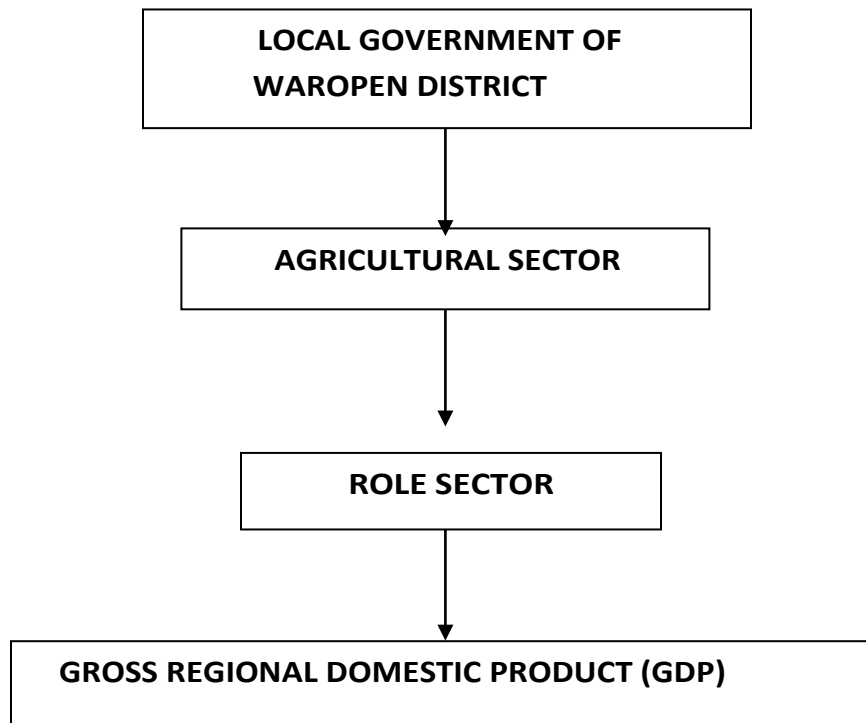

Figure 1. *Framework*
Source: Author's Reasoning

1.5 Operational Definition
In order not to cause misinterpretation of the terms used in the title of this research, it is necessary for the author to provide limitations or understandings of these terms:
1. Analysis is an investigation / observation of an event or occurrence or an activity to find out the reality that happened.
2. The role is part of the main task that must be carried out or the dynamic aspect of the position (status).

3. The agricultural sector is one of the sectors contained in the Gross Domestic Regional Product which has a fairly large contribution, which consists of the agricultural sub-sector, the plantation sub-sector, the livestock sub-sector, the forestry sub-sector, and the fisheries sub-sector.
4. Gross Regional Domestic Product (GDP) is the total production of goods and services in an area produced during one year.

II. Research Method

Data Analysis Techniques
Data analysis techniques used in this study include:
1. Quantitative Analysis
    The analysis used in quantitative analysis are;
a. Linear Trend Analysis.
    This analysis is used to measure the trend of the development of the Agricultural Sector in Waropen District. By using the following formula:
* Trend of Agricultural Sector Development in Waropen Regency:

$$\textbf{Y'} \quad = \quad \textbf{a} \quad + \quad \textbf{b X}$$

III. Discussion

3.1 Waropen District Overview
a. Geographical Location of Waropen District
At first the Waropen area was part of the Yapen Waropen district, where during this period the area was divided into two sub-districts, namely Waropen Bawah and Waropen Atas subdistricts. become Masirei sub-district. However, with the increasing population of Yapen Waropen district, as well as the demand for a shorter span of government control, in mid-2003, the Waropen area was expanded to become the definitive Waropen district.Geographically, Waropen district is located at coordinates 135°93'00'-137°42'00 East Longitude and 03°35'00'- 02°12'00 South Latitude; with the following regional boundaries:
* In the north it is bordered by the Yapen Islands district,

* South side borderingwith Paniai district,

* Bordered on the westwith Nabire district,

* In the east it is bordered by Membramo Raya district.

b. Population and Demographics
In the context of the development of a region, the population plays a dual role as an object as well as the subject (actor) of the development itself. Thus, the population is a potential development resource; especially if there are adequate employment opportunities, and in accordance with the education and skills of the population.Data

obtained from the Central Bureau of Statistics of Waropen Regency shows that as of the end of 2015, the population of Waropen Regency was 27,123 people in 11,568 households; consisting of 14,271 men and 12,842 women. With the total area of Waropen Regency covering an area of 22,004.87 Km², the population density of this district is 1.18 people/Km. To find out the distribution of the population of Waropen district by age group and gender until the end of 2015 it is shown in table 1 below:

Table 1. Distribution of Waropen Regency Population Based on Age Group and Gender, 2015

Age group	Man	Woman	Total
0 – 4	2482	2138	4566
5 – 9	1726	1524	3250
10 – 14	1595	1256	2851
15 – 19	1098	1084	2182
20 – 24	1216	1173	2389
25 – 29	1153	1388	2541
30 – 34	1243	1082	2325
35 – 39	1004	874	1878
40 – 44	904	657	1561
45 – 49	649	548	1197
50 – 54	504	412	916
55 – 59	296	238	534
60 – 64	184	178	362
65 – 69	138	147	285
70 – 74	90	83	173
75+	53	60	113
TOTAL	14,271	12,842	27.123

Source: Central Bureau of Statistics Waropen Regency, 2016

3.2 Discussion
a. Analysis of Agricultural Sector Development in Waropen District

This analysis is intended to determine the pattern of development of the Agricultural Sector in Waropen Regency during the 2009 - 2015 period.

As a basis for future assessments. In general, the method used is Least Square, which in its calculation uses a linear function (Simple Regression), which is as follows:

$$Y' = a + bX$$

To find out the value of a and b used two normal equations as follows:

$$\sum Y = n.a + b \sum x \dots\dots\dots\dots \quad a = \sum Y / n$$

$$\sum XY = a\sum n + b \sum x^2 \dots\dots\dots\dots \quad b = \sum XY / \sum x^2$$

Information :

Y' = Agricultural Sector Development.
a = Trendline On Y Axis.
b = Slope of the Trend Line. X
= Observation Period.

Based on data from the Agricultural Sector in Waropen Regency during the period 2009 to 2015, the process of applying a linear trend line is carried out using the help of table 4.1 as follows:

Table 2. Procedure for Applying the Linear Trend Line Equation

Year	Y	X	XY	X²
2009	255.940.0	- 3	- 677,820.0	9
2010	266.565.0	- 2	- 533,130.0	4
2011	276,235.3	- 1	- 276,235.3	1
2012	286,583,4	0	0	0
2013	312,126.6	1	312,126.6	1
2014	326,694.7	2	653,389.4	4
2015	344,791.6	3	1,034,374.8	9
Total	**2,068,936.6**	**0**	**512,705.5**	**28**

Source: BPS Waropen District, data reprocessed.

From the calculation table above, it can be calculated the parameter a and b as

follows:

$$\sum Y \quad = \quad n.a \quad + \quad b \sum x$$

$$2{,}068{,}936.6 \quad = \quad 7(a) + \qquad b(0)$$

$$2{,}068{,}893.6 \quad = \quad 7(a)$$

$$a \quad = \quad \frac{2{,}068{,}893.6}{7}$$

$$a \quad = \quad 295.562$$

$$\sum XY \quad = \quad a\sum x \quad + \quad b \sum x^2$$

$$\sum XY \quad = \quad a\,(0) \quad + \quad b\,(28)$$

$$422.705{,}5 \quad = \quad b\,(28)$$

$$b \quad = \quad \frac{512.705{,}5}{28}$$

$$b \quad = \quad 18.310{,}9$$

By determining the value of a and b, then a linear equation can be obtained, namely:

Y = 295.562 + 18,310.9 X

Based on model trend linear in on, so could the trend curve analysis is described as follows: From this equation, the period from 2018 to 2020 can be calculated as follows:
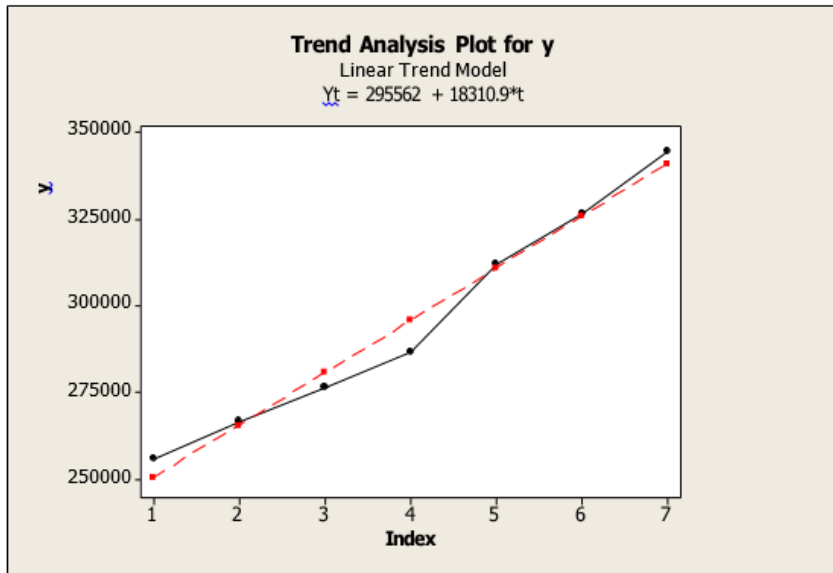
Figure 2. *Trend Analysis Plot for y*

2018 $\quad = \quad 295.562 \quad + \quad 18{,}310.9\ X$

$\quad = \quad 295.562 \quad + \quad 18{,}310.9\ (6)$

$\quad = \quad 295.562 \quad + \quad 109{,}965.4$

$\quad = \quad 405.427.4$

2019 $\quad = \quad 295.562 \quad + \quad 18{,}310.9\ X$

$\quad = \quad 295.562 \quad + \quad 18{,}310.9\ (7)$

$\quad = \quad 295.562 \quad + \quad 128176.3$

$\quad = \quad 423{,}738.3$

2020 $\quad = \quad 295.562 \quad + \quad 18{,}310.9\ X$

$\quad = \quad 295.562 \quad + \quad 18{,}310.9\ (8)$

$\quad = \quad 295.562 \quad + \quad 146{,}487.2$

$\quad = \quad 442{,}049.2$

Based on the above calculations, it is clear that the forecast for the Agricultural Sector

in Waropen Regency in 2018 is Rp. 405.427.400.000,- , tahun 2019 sebesar Rp 423.378.300.000,-, dan tahun 2020 sebesar Rp 442.049.200.000,- .

By knowing the forecast of the Agricultural Sector in Waropen Regency, it can be used to take policies made by the local government for the improvement of the Agricultural Sector in Waropen Regency.

b. Analysis of Agricultural Sector Contribution to Gross Regional Domestic Product (Economic Development) in Waropen District

To find out how big the contribution / contribution of the Agricultural Sector to Economic Development (Gross Regional Domestic Product) in Waropen Regency, from 2009 to 2015, it can be seen in the calculation below, using the following formula:

$$\text{Ks} = \frac{Sx\,(\text{Rp})}{RD(\text{Rp})} \times 100\%$$

To find out the contribution of the Agricultural Sector to the Gross Regional Domestic Product (Economic Development) in Waropen Regency, it can be seen as follows:

1. The contribution of the Agricultural Sector to the Gross Regional Domestic Product (Economic Development) in Waropen Regency in 2009 was:

$$\text{Ks} = \frac{255{,}940}{599{,}484.3} \times 100\%$$

$$= \ 42.69\%$$

2. The contribution of the Agricultural Sector to the Gross Regional Domestic Product (Economic Development) in Waropen Regency in 2010 is:

$$\text{Ks} = \frac{266.565}{676{,}760.9} \times 100\%$$

$$= \ 39.39\%$$

3. The contribution of the Agricultural Sector to the Gross Regional Domestic Product (Economic Development) in Waropen Regency in 2011 is:

$$\text{Ks} = \ 36.90\ \%$$

Based on the calculation results above, it can be seen that the contribution of the Agricultural Sector to Gross Regional Domestic Product (Economic Development) is as follows:

Table 3. Contribution of the Agricultural Sector to Gross Regional Domestic Product (Economic Development) in Waropen Kabupaten District Year 2009 - 2015

YEAR	AGRICULTURAL SECTOR (Million Rp)	ECONOMIC DEVELOPMENT (Million Rp)	CONTRIBUTION (%)
2009	255.940.0	599,484.3	42.69%
2010	266.565.0	676,760.9	39.39%
2011	276,235.3	748.579.0	36.90 %
2012	286,583,4	836,178.8	34.27%
2013	312,126.6	934,542.8	33.40%
2014	326,694.7	1.032.030.5	31.66%
2015	344,791.6	1,131,871.9	30.46%

Source: BPS Waropen Regency, processed.

Based on the data in table 4.2 above, it can be seen that in 2009 the contribution of the agricultural sector to the Gross Regional Domestic Product (Economic Development)of 42.69%. Next, in 2010 the contribution of the agricultural sector to the Gross Regional Domestic Product (Economic Development) was 39.39%. Then in 2011 the contribution of the agricultural sector to the Gross Regional Domestic Product (Economic Development) was 36.90%. Likewise, in 2012 the contribution of the agricultural sector to the Gross Regional Domestic Product (Economic Development) was 34.27%. In 2013 the contribution of the agricultural sector to the Gross Regional Domestic Product (Economic Development) was 33.40%. In 2014 the contribution of the agricultural sector to the Gross Regional Domestic Product (Economic Development) was 31.66%. And finally in 2015 the contribution of the agricultural sector to the Gross Regional Domestic Product (Economic Development) was 30.46%.From the explanation above, it can be seen that the contribution/contribution of the agricultural sector to the Gross Regional Domestic Product (Economic Development) of Waropen Regency continues to increase from year to year, but its contribution/contribution to the Gross Regional Domestic Product (Economic Development) of Waropen Regency tends to decrease from year to year. to year. Thus, it can be seen that the annual average from 2009 to 2015, the contribution of the agricultural sector to the Gross Regional Domestic Product (Economic Development) of Waropen Regency is 35.54%.

c. Analysis Factors Which Affects Agricultural Sector Revenues in Waropen District

The agricultural sector is one of the seventeen sectors in the formation of Gross Regional Domestic Product (GRDP) or economic development, where the contribution of the agricultural sector in Waropen Regency is very large when compared to the other eight sectors in the formation of Gross Regional Domestic Product (GRDP). The development of the agricultural sector continues to increase from year to year, but when viewed from its contribution to economic development (Gross Regional Domestic Product) of Waropen Regency, it tends to decrease from year to year. The factors that influence the acceptance of the agricultural sector in Waropen Regency are as follows:

d. Contribution of Each Sub-Sector

The size of the total revenue from the agricultural sector in Waropen really depends on the contribution of each sub-sector in the formation of the agricultural sector. The sub-sectors that contribute to the formation of the agricultural sector are; agriculture sub-sector, plantation sub-sector, livestock sub-sector, forestry sub-sector, and fishery sub-sector. Thus, the size of the total agricultural sector revenue depends on the contribution of each sub-sector (agriculture sub-sector, plantation sub-sector, livestock sub-sector, forestry sub-sector, and fishery sub-sector) in the formation of Gross Regional Domestic Product (GRDP) or economic development.

e. Community Role

One of the factors that influence the acceptance of the agricultural sector in Waropen Regency is the role of the community. The role of the community is not in accordance with what is expected by the local government so that the acceptance of the agricultural sector in Waropen Regency is still small. This is due to the absence of community seriousness or community motivation in improving the agricultural sector, due to various obstacles that exist in the communityin society such as; lack of community motivation, capital, market share, and lack of attention from local governments.

f. Local Government Policy

One of the factors that influence the acceptance of the agricultural sector in Waropen Regency is the Local Government Policy. If local government policies focus on the agricultural sector, then all existing local government policies are, of course, for the sake of increasing agricultural sector revenues in Waropen Regency. In the implementation of government politics in the regions, it is not possible to only prioritize one aspect (economics) but it is important to pay attention to other aspects, namely environmental sustainability so that the implementation of green government is very important in supporting environmental sustainability in the political process of government in the regions (Dama, 2021). The Government of the Republic of Indonesia was formed to protect the whole of the Indonesian people (Angelia, 2020). Local Government policies to increase agricultural sector revenues in Waropen District include; working capital loans to farmers and fishermen, business development for entrepreneurs engaged in the agricultural sector, facilitating the granting of business permits in the agricultural sector, and making regional regulations to protect entrepreneurs engaged in the agricultural sector.

IV. Conclusion

The availability of natural resources is one of the factors that influence the acceptance of the agricultural sector in Waropen Regency. The availability of natural resources has a very large influence in various activities in the agricultural sector.Availability of natural resources such as; the large business area, and the large potential of natural resources, will affect the prospects for the greater acceptance of the agricultural sector in Waropen Regency.

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