

# THE ROLE OF AGRICULTURAL SECTOR IN BANTUL REGION DEVELOPMENT

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## ABSTRACT

*This research is aimed to find out the ability of agricultural sector in supporting government's development and the role of agricultural sector in the development of Bantul region. This research uses descriptive method. In deciding the research site, the research uses purposive method. The data used in this research is the annual time series data within 2005-2007. Carrying Capacity Ratio analysis is used to analyze the data regarding the ability of a certain region in supporting food availability, which scaling the amount of the owned land in a certain region and the population within, whereas everything deal with agricultural sector in developing Bantul Region is analyzed by calculating the Regional Domestic Gross Product percentage of agricultural sector, which scaling the agricultural sector Regional Domestic Gross Product and all sector Regional Domestic Gross Product. The result of this research showed that the average value of Bantul Region's Carrying Capacity Ratio during 2005-2007 is 1,46. The result for the agricultural sector's rule in supporting the development of Bantul Region showed that agricultural sector is playing a major rule, with its highest percentages during 2005-2007 for 24,49% or >11,11%, which means that agricultural is the main sector in contributing the Regional Domestic Gross Product of Bantul Region.*

**Key Words:** Role of Agricultural Sector, Development, Supporting Capacity.

## INTRODUCTION

Development is a step by step transformation from a certain condition into the better one, planned and continual, in reaching prosperity. The national development is a development in whole sectors, whereas a local development is the realization of the Archipelago concept, an integrated part of national development which is aimed to improve the living's standard and prosperity effectively and efficiently for the regional population to be an autonomous region.

The illustration of local development in sectored macro is can not be parted from the supporting ability of each sector. Considering the step by step plan of the development, it needs to be separated the development which is done by the private sector and done by the government. In general the government needs to focus on some factors like the development of special region (politically and strategically reason), for example the division region and a region which has a specific feature.

Arsyad (1992) stated that local agriculture development is a process where the local government is managing the nature resources and creating cooperation between government and farmers, private sector to create a new vacancy and to improve the population who live within agriculture.

Rahayu (2001) stated that one strategy that is used to motivate the economic development and to absorb and distribute the labors is the enterprise of local economic population, in general mainly in agricultural which is based on the local resources done by the population themselves. Agricultural development must be pushed in order to support the economic development of a region; agricultural sector should develop its role to improve the agricultural production.

Mubyarto (1992) stated that in this case, there are two areas of agriculture, agriculture in specific and in general. In specific, agriculture means the public farm and the result of these farming activities mainly to fulfill the family's needs. In general, agriculture means plantation public



farm (small area and big area plantation), forestry, farm, fishery, in beneficial purpose.

In general meaning the agricultural sector has a role to overcome the urbanization problem which also becomes a national problem because most of the activities are done by a lot of society in rural area and beach coastal area. Thus, those sectors are the base of people's economic which is being the main agenda in national development moreover the region development as a part of national development.

Agricultural development in Bantul Region is faced in a complicated problem which hard to be solved in time, that the agriculture field is getting narrowed because of the development in housing industry. The width of Bantul Region is 50.685 Ha, 15.884 for rice cultivation, 11.371 Ha for plantation, garden, fishpond, prairie, citizen protected forest, etc. 23.430 Ha for housing, building, state protected forest, swamp, etc.

Agriculture sector is in the first rank in Regional Domestic Gross Product of Bantul Region. Looking at its contribution in Regional Domestic Gross Product, it shows that agricultural sector gives a positive contribution in supporting the economic development and in changing the laborer in Bantul Region.

Regional Domestic Gross Product is one macro-economic indicator that is usually used to assess the work of economic development in an area. Regional Domestic

Gross Product is calculated with the same calculation therefore it can be compared between areas and time. Some important information that can be calculated by Regional Domestic Gross Product are the economic growth, the sector's role and per capita income and inflation on producer price.

Agricultural product is still an important component in arranging Regional Domestic Gross Product with its highest percentage than the other sectors, in 2007 for 21,03%, see the Table 1.

## THEORITICAL REVIEW

### The Role of Agricultural Sector in Economic Development

Agricultural Sector has an important role in providing the input; it is laborer for industry and other sectors. Agriculture development program is an integrated part of national development, thus everything that is planned in national development should be reflected in agriculture development. Economic development is necessary to be seen as a process of relating and influencing factors which causing the economic development therefore it can be accurately identified and analyzed. In the last two decade, if it is exactly seen, the agricultural sector is positioned as the supporting sector not as the main motor of Indonesian development.

Table 1. Percentage Distribution of Regional Domestic Gross Product Bantul Region Valid Flat Price (Percent) Based on Field of Endeavor 2005-2007

No.	Field of Endeavor	2005	2006	2007
1.	Agriculture	21,89	21,47	21,03
2.	Mining and Quarrying	1,01	1,02	1,00
3.	Manufacture Industry	20,87	19,47	19,16
4.	Electricity, Gas and Water	1,21	1,03	1,06
5.	Building	8,90	11,88	12,70
6.	Trade, Hotel and Restaurant	17,14	17,03	17,16
7.	Communication and Transportation	7,18	6,89	6,87
8.	Finance, Rental and Service Business	6,80	6,23	6,21
9.	Services	15,01	14,98	14,80
Total		100,00	100,00	100,00

Source: BPS Kabupaten Bantul, 2008



The agricultural sector is merely considered only orientating on the improvement of the production result, therefore not responding to the existing opportunity. Those lead to a notion that macroeconomic and real sectors do not closely related to the national development. The main agricultural laborers in rural areas are also the main laborers in the urban areas. The agricultural sector is the main source for the development of modern economic. Bakrie (2004) stated that the strategy in developing an area is developing the agriculture sector in general through market identification, providing the tools of agriculture production, farmer training in order to create efficiency in providing the financial support and marketing place.

Tambunan (2003) stated that the main purpose in Economic development is improving the societies' prosperity therefore there will not be any joblessness that is usually measured by the real average per capita income, consequently local indicator National Gross Domestic Product is ineffective in measuring the imbalance in regional economic development if it is not combined with the per capita average of Regional Domestic Gross Product.

The important indicator to know the economic condition of a certain country and the economic development of a region in a certain period is the Gross Domestic Product based on either valid flat price or constant flat price. Gross Domestic Product is the added value that is gained from the whole unit in a certain industry, which is able to be divided into nine parts. Those nine parts can be divided again into 3 economic sectors there are primary sector, secondary sector and tertiary sector. The primary sectors are agriculture and mining, the secondary sectors are manufacture industry, electricity, gas and water, and also building, for the tertiary sectors are trade, hotel' restaurant, transportation and communication, bank sectors, financial, rental and real estate and other services sectors.

Agriculture sectors consist of five sub-sectors; there are food plants sub-sectors, plantation plants sub-sectors, animal

husbandry and its product sub-sectors, forestry sub-sectors and fishery sub-sectors. It is seen from the national agriculture sector in Gross Domestic Product until 1991 that agriculture sector can be relied on. Arsyad (1992) stated that since 1992 the role of this sector is decreasing due to the development of industry sector although the added value is increase.

### **Economic Growth Theories**

Based on Samuelson, economic growth is the improvement of total input in a country during a certain period, the most comprehensive output measurement of an economy is the Gross National Product. National product as the whole money value and goods current that is produced a certain country. Economic growth means the output is greater than the input which is previously produced.

Nowadays, there is no theory which is able to explain a certain region's economic development comprehensively. Nevertheless there are some theories that are partially able to help in understanding the important point of the development of local economic growth. The main idea of that theory is based on two things, the discussion of the method in analyzing local economic growth and the theories concerning on the factors which is determining the economic growth of certain region.

This approach is the synthesis and the formulation of the existence concepts. This approach gives the framework and the plan action in economic context which is going to be done. This approach is called the new paradigm local economic development theory. There are some theories explaining the economic development in a certain region as follows:

Lewis growth theory is explaining about the growth in many sectors. This theory is aimed to protect the development process from the obstruction in facing: getting the basic commodity, expert, energy resources, the facilities in transporting the product to the market, the market in which the product will be sold. Lewis's theory showed the development should be spread



evenly through the benefit of the cooperation that is done by the agriculture sectors and industrial sectors. Lewis stated that there will be some problems if the development is only centered in one sector. Without the even distribution between sectors, will lead the instability and disruption toward the economic activity that make the development obstructed (Arsyad, 1992).

Lewis is using the following illustration to show the important of development that is warranty the even distribution between industry sector and agriculture sector. If industry sector grows rapidly, thus those sectors will absorb the food commodity production and laborers surplus. But, without the development in industry sector, the agriculture term of trade is getting worst as the consequences of the surplus of laborers in agriculture sectors that will lead into the depressive effect toward the agriculture income. Therefore there is no more stimulus sector to create new investment and do the innovation. The industry sector and agricultural sector should be balance in order to run the development. If the development only concern on industrial sector will impede the economic development process.

If the agriculture sector is not develop, the industry will not either so that there is a dependency between sectors and the benefit of industry sectors that only be a small part of the national income which support the Regional Domestic Gross Product. Thus, the investment will still be in low level. Based on the problems that might be appear if the development is only concern in one sectors, Lewis concludes that the development should be done equally between the two aspects.

Hirschman and Streeten Theory which stated that the more suitable development pattern to accelerate the development process of developing country is the continuation of Lewis' Theory. Hirschman stated that the development pattern is based on the consideration as follows: historically there is unbalance activity in the economic development; to strength efficiency of the available resources and the uneven development will lead disturbances in the development process itself which support the

next development (Arsyad, 1992).

AT Mosher's theory explains the influences of economic development, mainly concern on the agriculture development which is influenced by advance of technology. The development of agricultural concept that is proposed by AT Mosher in 1960 has already reminded us about the mastery of new technology. That time, AT Mosher has remind us the five factor that must be fulfilled, they are: the market for agriculture product, there always a technology changes should be mastered by the farmer, the availableness of local tools facility, product incentive for the farmer, the suitable transportation.

Maurice Dobb theory stated that an agricultural sector plays a major role in deciding the economic growth that is going to be achieved, if there is no effort in improving the agricultural sector to the modern one, the economic improvement will be difficult to be achieved. If it is connected to the economic in general, it can be concluded that the development of agricultural sector not merely helps the development of its sectors but the others economic sectors.

W.W Rostow's Growth theory stated that the development of a certain region is differentiated into five steps (Arsyad, 1992) as follows: The traditional Society, The Preconditions for takeoff, The Take-off, The Drive to Maturity, The Age of High Mass-Consumption. This theory is the most popular and got many comments from the expert.

Basically the factor to differentiate the economic development is the change of economic, social and political condition. Based on Rostow, the economic development or the society transformation process into the modern society is a multidimensional process. Economic development is not merely the changes of economic structure of a nation which is showed by the decreasing of agricultural sector and the increasing of the industrial sectors but also the changes in economic, politic and social orientation.



### Supporting Capacity Concept

Supporting capacity is the total amount of population in a certain region that is supported by a natural resource. Supporting capacity is related with two components: the total population in a region and the width of the available natural resources. The supporting capacity is determined by the natural resources potential (nature, artificial, human being and technology) to manage the natural and artificial resources, the job field and the income of the population. Supporting capacity can be differentiated as follows (Manik, 2003): maximum supporting capacity is the amount of the individual that can be covered by the certain natural surroundings.

The absolute supporting capacity is the amount of maximum individual that is supported by a certain circumstances in a level of simpler life. The safety limit of supporting capacity is a capacity that shows the amount of the individual which is supported by certain circumstances in a level of adequate life. The optimum supporting capacity shows the amount of the individual that is supported by a certain circumstances in a level of prosperous life, meaning that the needs of this kind of individual are able to be fulfilled.

For a region that is dominated by the agricultural sector, the higher the culture of the population, the higher the supporting capacity. It happens because people's activities in fulfilling their needs cost a wide space where the availability of the land is connected to the population's activity. The amount of the population is also determining the ability of a region to support the population in developing the agriculture. To observe the ability that is owned by a region for the food availability it needs a Carrying Capacity Ratio (CCR) analysis by comparing the width of the land and the amount of the population.

### RESEARCH METHODOLOGY

This research use descriptive methodology, it is researching a group of people, an object, a set condition, a set of

thinking system or a recent event. The aim of this research is making a descriptive illustration, systematic illustration or picture, factual and accurate deal with facts, features and the connection between the investigated phenomena (Nasir, 1998).

In finding the research site this study used purposive method which specifically and intentionally decides the research site based on the purpose of the research is. Based on the consideration that Bantul Region has a wide agriculture field, although some of the agriculture field is turning into industrial sector and housing, the agricultural sector still contributes the highest point in Regional Domestic Gross Product Bantul region, and has a better prospect in developing agribusiness which support the economic development.

The data that is used in this research is the annual time series data within the period of 2005-2007. The source of the data is Statistic Center Bureau of Bantul Region and also from the Agriculture and Forestry Department of Bantul Region. The collected data are Percentage Distribution of Regional Domestic Gross Product Bantul Region on the Valid Flat Price (Percent) Based on Field of Endeavor, the total agricultural field, the amount of the family, the amount of the population, the width of the field that is owned by the farmer, Domestic Product Regional Domestic Gross Product Bantul Region on the Valid Constant Price, Percentage Distribution of Regional Domestic Gross Product Bantul Region on the Valid Constant Price.

To know the ability of agricultural sector in supporting the development this research used supporting capacity sector analysis (Riyadi and Deddy, 2003) as follows:

$$CCR = \frac{A \times r}{H \times h \times F}$$

Explanation :

- CCR = Support Capacity Ability
- A = The total area that is used for agricultural (Ha)
- r = Yearly Crop frequency
- H = the total amount of the family (jiwa)
- h = the percentage of population total amount (%)
- F = the average width of field that is owned by the farmer (Ha)



To interpret the result of the support capacity agriculture calculation can be divided as follows:  $CCR > 1$ , it means based on the width of the land, the agricultural sector still has the ability in supporting the development of that region,  $CCR < 1$ , it means based on the width of the land, the ability is small, and  $CCR=1$ , it means that the region has the balance ability between the width of the land and the amount of the population in supporting the development of the region.

To find out the agricultural role in developing Bantul Region use the calculation of PDRB percentage. If the percentage (%) PDRB agricultural sector  $> 11,11\%$  means that agricultural sector has the important role than other sector in contributing the Regional Domestic Gross Product Bantul Region.

## RESULT AND DISCUSSION

The implementation of region autonomy is based on the Legislation No. 22/1999 concerning the region autonomy which stated that the region development is aimed to equalization, the improvement of people's prosperity, to endeavor the people, the improvement of region's income. Region needs to manage and improve the potential and ability effectively and efficiency like the natural resources and human resources in order to get the maximum outcome. Based on those facts, it is important for the regional government to create a new solution in facing the challenges, and the existence barriers, in sequence reaching perfectly the development's target.

The measurement standard to find out the development result that have been done by a certain region in a certain period of time is by recognizing the growth and the improvement of that region that can be seen by the calculation of Regional Domestic Gross Product. From the calculation of Regional Domestic Gross Product it can be identified whether the development is successful or not. The Regional Domestic Gross Product's growth is one indicator of macro economic that can be used to show the region development. The development of region economic brings consequences to the region itself.

To find out the supporting capacity of each sector, it can be seen from the analytic result of Carrying Capacity Ratio (CCR) which is able to give information deal with the strength of the agriculture developing supporting capacity in Bantul Region in 2005, 2006, and 2007. The higher CCR value the stronger supporting capacity in supporting the developing region, and vice versa.

CCR is a developing plan's tool which gives the illustration about the relation between the population and the use of the land. During 3 year's time the result of supporting capacity showed the agriculture's role in supporting the development is decreasing. The data that is used to calculate the supporting capacity analysis are the width of the land, the amount of the family, the amount of the population, the percentage of population total amount and the average land owned by the farmer. To be clearer, take a look on Table 2 below.

$$\% \text{ PDRB Agricultural Sectors} = \frac{\text{PDRB Agricultural Sector}}{\text{PDRB Whole Sector}} \times 100\%$$



Table 2. Agriculture Total Land, The Amount of The Family, The Amount of The Population, Percentage of The Population Amount, The Average Land that is Owned by the Farmer in 2005 - 2007

No.	Explanation	2005	2006	2007
1.	The Total of Agriculture Land and The Crop Frequency in a Year (Ha)	43.063	41.407	44.066
2.	The Amount of The Family	215.678	233.286	237.064
3.	The Amount of The Population	820.541	831.657	842.056
4.	% The Amount of The Population	0,33	0,33	0,34
5.	The Width of The Land Owned by the farmer (Ha)	0,39	0,37	0,40

Source: Dinas Pertanian dan Kehutanan Kabupaten Bantul, 2008

The Carrying Capacity Ratio (CCR) calculation from 2005 -2007 as follows :

$$CCR = \frac{A \times r}{H \times h \times F}$$

$$CCR\ 2005 = \frac{43.063}{15.678 \times 0,33 \times 0,39} = 1,55$$

$$CCR\ 2006 = \frac{41.407}{233.286 \times 0,33 \times 0,37} = 1,45$$

$$CCR\ 2007 = \frac{44.066}{237.064 \times 0,34 \times 0,40} = 1,37$$

Table 3. The Agriculture Sector's Supporting Capacity in Bantul Region 2005 -2007

No.	Year	The Result of Supporting Capacity
1.	2005	1,55
2.	2006	1,45
3.	2007	1,37

Source : Data Analysis, 2009

Table 4. Regional Domestic Gross Product Bantul Region According to Business Opportunity Based on Constant Price in the year of 2000 as Data for 2005-2007 (Million Rupiahs)

No.	Field Activity	2005	2006	2007
1.	Agriculture	791.592	814.742	838.545
2.	Mining and Quarrying	32.784	34.000	35.023
3.	Manufacture Industry	644.544	568.064	582.328
4.	Electricity, Gas and Water	29.001	27.127	29.294
5.	Building	276.078	381.915	413.694
6.	Trade, Hotel and Restaurant	612.904	624.196	659.401
7.	Communication and transportation	222.436	219.535	234.814
8.	Finance, rental and Service business	205.177	193.399	202.511
9.	Services	419.656	436.668	453.340
Total		3.234.173	3.299.646	3.448.949

Source: BPS Kabupaten Bantul, 2008



Table 5. Percentage Distribution of Regional Domestic Gross Product Bantul Region According to Business Opportunity Based on Constant Price in the year of 2000 as Data for 2005-2007 (percent)

No.	Business Opportunity	2005	2006	2007
1.	Agriculture	24,48	24,69	24,31
2.	Mining and Quarrying	1,01	1,03	1,02
3.	Manufacture Industry	19,93	17,22	16,88
4.	Electricity, Gas and Water	0,90	0,82	0,85
5.	Building	8,54	11,57	11,99
6.	Trade, Hotel and Restaurant	18,95	18,92	19,12
7.	Communication and Transportation	6,88	6,65	6,81
8.	Finance, Rental and Service Business	6,34	5,86	5,87
9.	Services	12,98	13,23	13,14
Total		100,00	100,00	100,00

Source: BPS Kabupaten Bantul, 2008

Based on Table 3 it can be inferred that the analytic Agriculture Sector Supporting Capacity is showed by  $CCR > 1$ , which means the agriculture supporting capacity is strong. This strong agriculture supporting capacity is because the agriculture land in Bantul are fertile and the farmer take a good care of the land, moreover for the land near the beach coastal. Nevertheless the agriculture sector support capacity that is showed in table 3 is decreasing. That fact happens because of the shift-function of agriculture field into industrial sectors, the people who work in this sector getting lower because of the lower wage for a farmer, an influence of a bad farming product, unendurable, and has seasonal quality and the limited ability of a farmer has because generally people who work in agriculture sector has a low education.

Regional Domestic Gross Product is goods product and service value which is produced by a certain regional economic in a year time. The economic activities are divided into 9 groups, the understanding of this sector is recognized as the business opportunity. The value of Regional Domestic Gross Product Bantul Region based on business opportunity.

Based on Table 4 it can be inferred that agriculture sector Regional Domestic Gross Product from 2005-2007 is the highest value; each value is 791.592, 814.742, 838.545 (in a million rupiahs). It shows that the agriculture production value is high.

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Next, on the second level is managing industry sector most of the materials come from agriculture sectors. In this case the value of Regional Domestic Gross Product in a certain sector which has the highest value is called leading sector.

The added value of a sector toward the total value of Regional Domestic Gross Product is showed in a percentage form that is called contribution or role of a sector to the total Regional Domestic Gross Product in which can be seen the most dominance and the weakest sector in an economic.

Based on Table 5 it can be inferred that agricultural sector has the most important role than the other sectors in contributing the Regional Domestic Gross Product Bantul Region with the highest percentage from 2005 (24,48%), 2006 (24,69%) and in 2007 (24,31%) and all of them  $> 11,11\%$ . This fact shows that the agricultural sector is dominant and has the important role in providing the input for industrial sector and other sector of Bantul Region economic development, followed by manufacture industry sector, commerce sector, hotel and restaurant sector.

## CLOSING

Agriculture sector has an important role in providing the input for industry sector and other sectors. Agriculture Development Program is an integral part of National Development. Economic development needs



to be seen as a connecting and influencing process between the factors which leads economic development happen.

From the Carrying Capacity Ratio analysis result which is able to give information dealing with the strength of the agriculture developing supporting capacity in Bantul Region, gained that the average value of CCR from 2005-2007 is 1,46 or bigger than 1 which is meant from the providing exist land, agriculture sector has the ability in supporting the development in Bantul Region. This strong supporting capacity proves that agricultural sector has a prospect in the future in developing the agribusiness and able to support the agriculture development.

Observed by the contribution of agriculture sector in Regional Domestic Gross Product which is based on the calculation the agricultural sector's rule in supporting the development of Bantul Region showed that this sector plays a major rule, with its highest percentages during 2005-2007 for 24,49% or >11,11%, which means that agricultural is the main sector in contributing the Regional Domestic Gross Product of Bantul Region.

Agricultural sector still giving the highest contribution although the measurement is not stabile but this sector still contributing the highest value for Regional Domestic Gross Product, that fact happens because of the shift-function of agriculture field into industrial sectors, the people who work in this sector getting lowered because of the lower wage for a farmer, an influence of a bad farming product, unendurable, and has seasonal quality and the limited ability of a farmer has because generally people who work in agriculture sector has a low education.

In order to improve the support capacity and the agricultural sector Regional Domestic Gross Product, the society must be aware of the land shift-function policy, to keep the fertile and well watered system land are not turned into housing and industry. If land shift-function should happen, it is better to use the unfertile and fallow land so the land shift-function will not bother the agriculture areas, considering that those areas is the input for other sectors.

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