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Agricultural Sector Investment Need in Increasing Economic Growth

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Abstract

This paper is aimed to analyze the need of investment in agricultural sector in increasing economic growth in Aceh Province. The priority in developing agricultural commodities increases economic growth in Aceh Province. This research used secondary data sources from Indonesian Statistic Board (BPS) and other related data sources. Meanwhile, the research method used is Incremental Capital Output Ratio (ICOR) Analysis. Based on the research results, it is found that the ICOR in crop plantation, livestock, forestry, and fisheries sub sectors are 2.926, 0.000, 0.108, and 0.298. This means that in achieving economic growth by 1 percent in all four commodities, its need the growth of investment in crop plantation, livestock, forestry, and fisheries sub sectors as much as 2.926, 0.000, 0.108, and 0.298 percent each. Furthermore, in achieving 4 percent economic growths, the developing of commodities that have the effect on economic welfare, it needs the investment for the five years period as much as 286 billion rupiah or equivalent with 58.1 percent of Gross Domestic Regional Product (GDRP) of Aceh Province. Thus, based on the research results, it is recommended that the Aceh Government should promote investment in agricultural sector in promoting economic growth in Aceh Province.

Key words : *Investment, Incremental Capital Output Ratio (ICOR), agricultural sector, economic growth.*

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INTRODUCTION

The capital formation is considered as one of the main factors or variables in economic development (Ewubare et al., 2015; Shuaib et al., 2015; Orji et al., 2015; Aurora et al., 2016). This is reasonable because of capital formation is useful in the use of the economic resources. By the capital formation, it will be the increasing in national output. Furthermore, the capital formation and investment together create employment opportunities. Finally, the capital formation may increases the economic welfare for the people. Indonesia as one of developing countries relies on agricultural sector as the source of income and livelihood of the people. In fact, majority of land area decided to agricultural sector and agricultural sector itself provides almost a half of employment opportunities (Dillon, 2004). So far, agricultural sector is one of the sectors that provide the inputs for industrial sector in Indonesia. Thus, economic development in Indonesia has to be based on sustainable agricultural development.

Investment in agricultural sector plays the important role in achieving the targets of Indonesian economy. This consideration is because of agricultural sector has become the main sector in Indonesian development for the reasons: (1) agricultural sector fulfill the foods need for the large population of Indonesia, (2) agricultural sector provides job opportunities, (3) agricultural sector provides the inputs for industrial sector, (4) agricultural sector has been the foreign exchange reserve. Competitive agricultural sector is the necessary condition for industrial and services sectors development (Kalangi, 2006; Baba et al., 2010). Aceh Province as one of the Indonesian provinces in Sumatera Island also has relied on agricultural sector as the main source of economic output. In the year 2008, Aceh Province had 96,683 acre of technical irrigation, 44,230 acre of semi technical irrigation, and 74,027 acre non-technical irrigation. In terms of production, total rice production in Aceh is 1,411,649 ton. This amount has decreased as much as 9.22 percent compared to year 2004. The fall in rice production has been caused by the land area damaged when the Tsunami disaster hit Aceh in 2004. Generally, wet land rice production has dominated crop plantation in Aceh.

Contrast to rice production, peanut production in Aceh Province has shown decreasing trend from 16,887 ton in year 2003 to 15,598 ton in year 2008. Meanwhile, corn production has shown the increasing trend from 67,386 ton in year 2003 to 94,246 in year 2008.

Generally, the structure of Aceh economy has been dominated by agricultural, trade, and hotel and restaurant sectors. The contribution of agricultural sector to Gross Domestic Regional Product (GDRP) of Aceh is greater than trade, hotel and restaurant sector as can be seen in Table 1. More than 25 percent of GDRP total of Aceh Province has been contributed by agricultural sector. The trend shows the persistent contribution of agricultural sector as a dominant sector at least for about ten years or more. Industrial sector as the third dominant sector actually has been also supported by agricultural sector especially for agroindustry. Agroindustry has a a good prospect in Aceh economy as secondary sector. In producing higher output (GDRP), investment as an input plays significant role by capital formation. With the investment, production capacity can be increased. In terms of investment which consists of domestic and foreign investment, Aceh Province experienced the lag of foreign investment, while domestic investment is higher. During the period of 2010-2014, the domestic investment in Aceh Province continuously increased every year (see Table 2).

Table 1. Sectoral Contribution of GDRP of Aceh Province in Constant Term (in percent)

No.	Sector	Year				
		2010	2011	2012	2013	2014
1	Agriculture	26.18	26.7	26.85	27.11	26.87
2	Mining	8.68	7.89	7.53	7.03	6.66
3	Industry	11.78	10.55	10.23	9.85	9.12
4	Electricity, Gas and Water	0.32	0.37	0.38	0.39	0.39
5	Construction	6.92	7.09	7.21	7.32	7.54
6	Trade, Hotel, and Restaurant	19.29	19.97	20.37	20.74	21.33
7	Transportation and Communication	7.08	7.34	7.43	7.47	7.5
8	Finance and real estate	1.83	1.88	1.9	1.94	1.99
9	Services	17.93	18.23	18.1	18.16	18.6
GDRP Total		100	100	100	100	100

Source: Indonesian Statistic Board, BPS (2014)

Table 2. Domestic Invesment by Economic Sector of Aceh Province (in million rupiah)

No.	**Sector**	**Year**				
		2010	**2011**	**2012**	**2013**	**2014**
1	Agriculture	40,880.000	63,681.811	964,607.155	779,654.752	1,331,379.226
2	Mining	-	58,000.000	4,250.000	298,817.402	580,340.610
3	Industry	110.000	383,983.707	195,586.228	742,814.302	938,895.015
4	Electricity, Gas and Water	-	-	-	1,547,151.765	1,547,151.765
5	Construction	-	-	-	255.000	255.000
6	Trade, Hotel, and Restaurant	-	-	-	134,333.010	134,333.010
7	Transportation and Communication	-	-	-	4,728.000	4,728.000
8	Finance and real estate	-	-	-	-	-
9	Services	-	-	-	47,922.400	47,922.400
Domestic Investment		40,990.500	122,065.795	1,164,443.384	3,555,676.632	4,585,005.027

Source: Aceh Investment and Promotion Board (2014).

During the period of 2010-2014, total of domestic investment in Aceh Province had reached 4,272 billion rupiah, while for foreign investment had reached 34,762.173 USD. Meanwhile, the realization of foreign investment had been 85,910.736 USD during the period. The

data has shown that there had been the lag of domestic investment in agricultural sector by the amount of 1,092 billion rupiah.

According to Kuznets in Todaro (2004), economic growth is the increase in long run capacity of one country to provide any goods and services to the people. The increase in the capacity is determined by the advance in technology (technological progress), institutions, and ideology. Meanwhile Arsyad in Hamaraon (2005) stated that the factors that affect the economic growth in one country are: (1) capital accumulation, (2) population growth, and (3) technological progress.

Furthermore, economic growth is a process of the increase in output per capita in the long run. Economic growth according to him covers three aspects, those are: (1) economic growth is an economic process, (2) economic growth relates to the increase in output per capita, (3) economic growth relates to time perfective.

Jenicek (2016) identified at least 6 theories and models of economic growth, those are: Classical Growth Theory, The Harrod-Dormar Growth Model, Structural Change Models, Lewis Model, Structural Change and Patterns of Development, and International Dependence Models. Among many growth theories such as Classical thoughts by Adam Smith and David Ricardo, an interesting thought is by Harrod-Dormar who developed growth theory that famously known by Harrod-Dormar Growth Theory. In that theory, they assume that: first, economy is in full employment and capital goods are fully employed. Second, economy consists of two sectors; those are households and firms without government and international trade. Third, the amount of private saving is proportional to the amount of national income, thus the saving function started from origin. Finally, marginal propensity to save (MPS) is fixed, thus the capital output ratio (COR) is also fixed and incremental capital output ratio (ICOR) is also fixed.

According to Sukirno (2004), the efficiency comes from technology, the lower the ICOR, the more efficient the use of capital and thus the higher the economic growth. Campano et al. stated that the ICOR rises as the per capita GDP rises. According to their argument, the more developed a country, it will be difficult to have the growth from the increase in capital.

One of the important production factors is capital. Capital accumulation comes from the investment in the economy. According to Mankiw (2000), investment is GDP component that relates today and the future. Investment is the expenditure for consumption goods aimed to provide the needs of households today, while the investment expenditure is aimed to increase the leaving standard for the future years. So far, according to Mankiw (2000), there are three types of investment expenditures, those are business fixed investment, residential investment, and inventory investment.

Rodrik (2003) also strengthen the role of capital in producing output therefore economic growth. According to him, total output or GDP in an economy is the function of resource endowments such as labor, physical capital, human capital, and the productivity with which those endowments are used to produce outputs (GDP).

In the development process, especially the sectors that share to GDP, agriculture sector is one of the important and dominant sectors for developing countries. Indonesia as one of developing countries relies on dominant of agriculture sector through first step of development process until nowadays, even its role is now decreasing.

According to Kuznets in Tambunan (2003), the agricultural sector in developing countries is

the economic sector that is potential in its contributions to economic growth and national economy. First, the expansion in economic sector especially in nonagricultural sector depends on the products of agricultural sector, not only for the sustainable growth in food supply, but also in providing raw materials for the purposes of nonagricultural sectors especially processing industry. This is known by product contribution. Second, because of the strengths of agriculture bias in economy during many steps of development, the population in agricultural sector (rural sector) forms a greater portion for domestic markets for domestic industrial products. This is known by market contribution. Third, because of the relative important of agricultural sector in producing GDP and its role in employment opportunities, agricultural sector is the source of capital for the investment in the economy. This is known by production factors contribution. Finally, the agricultural sector plays the role as one of the important source for trade surplus and the source of foreign exchange by exporting agricultural products and import substitutions. This is known by foreign exchange contribution.

In supporting the views on analysis of investment needs in increasing economic growth, there several previous researches. Rahmadin (2013) found that partially the investment and economic growth variables had affected significantly unemployment in Aceh Province, while the increase in Investment had the impact on reduction in unemployment. This was reasonable because the unemployment in Aceh Province had been higher affected by the factors other than population, information for workers, the education levels, and skills.

Meanwhile Danie (2010) conducted the research to analyze the impacts of domestic investment on pulp and paper industry on national output, employment rate, the linkage between economic sectors, and household's income in Indonesia. The research used Input-Output Table (I-O) and National Economy Account System (SNSE). From the analysis, it found that domestic investment on pulp and paper industry had smaller impact on the output, and there were no strong effects on employment opportunities.

Herliana (2004) also found that the development in agricultural sector had direct and indirect impact. Indirect impact shows that the development in agricultural sector will have the effects on gross output, value added, and production activities on other sectors.

On the other hand, Susanti (2003) found that the effects of the increase in investment in fisheries sector have a positive impact on Indonesian economic performance. The impact of the change in productivity also shows the same signs. If investment and productivity had been changed simultaneously, then the change in output in fisheries sector was higher compared to partial changes.

Agricultural investment also has the impact on state capacity. Lavers and Boamah (2016) found that in Ethiopia, the promotion of agricultural investment enhances the states's infrastructural power. So far, the large scale investment in infrastructure development has the positive impact on state capacity. Nolte (2014) also studied the role of agricultural investment. He studied the agricultural investment in other country in Africa that is Zambia and found that the large scale agricultural investment in Zambia is still under poor land governance. This has been the challenges in developing agricultural sector in Zambia.

Based on the research background and related references, the objectives of this research are: (1) to analyze how much is the investment need in increasing the economic growth in agricultural sector, (2) to analyze the priorities for the development of agricultural commodities that increases economic growth in Aceh Province, (3) to analyze which agricultural sub sector commodities that have higher impact on people welfare.

RESEARCH METHODS

The scope of this research is agricultural sector of Aceh Province. The reason for studying this is because of the important of investment especially in agricultural sector in Aceh Province.

The data used for the purpose of analysis is secondary data that had been obtained from Indonesian Statistic Board (BPS), Aceh Investment and Promotion Board, and other related institutions. The period of data used is from 2010 to 2014.

In addressing the issues of the research, the method of analysis used is ICOR calculation method with standard and investment accumulation methods. For the comparison purpose, the investment approached by two ways, first is Gross Fixed Capital Formation with change in inventory, and second is Gross Fixed Capital Formation without change in inventory. Facing with the availability of the data, thus ICOR for the period of 2010 to 2014 was limited to only using standard method with Lag of 0, 1, 2, and 3.

Mathematically, the formula of ICOR calculation is as follow:

$$ICOR = \frac{\Delta K}{\Delta Y} \quad \text{.....(1)}$$

Where ΔK is the additional of capital/new capital goods and ΔY is the additional of output.

In practice, the data obtained is not from additional capital but from the realization of investment by government and private sector. Thus, we can assume that ΔK = I, where I refer to investment as the following formula:

$$ICOR = \frac{I}{\Delta Y} \quad \text{.....(2)}$$

Equation 2 refers to Gross ICOR which is the ratio that shows additional unit of capital in getting additional unit of output in certain period.

In some cases, investment in one year can directly produce the outputs in that year also, thus equation 2 can be converted to:

$$ICOR = \frac{I_t}{(Y_t - Y_{t-1})} \quad \text{.....(3)}$$

Where I refers to investment in year t, Y_t is output in year t, and Y_{t-1} is output in the previous year. Equation 3 can be interpreted that investment in year t will produce output in the same year t also. In Standard Method, the calculation is done first by calculating ICOR on each year for the time period of t_1 to t_n until we get the ICOR value n amount. The principal in the ICOR calculation by Standard Method is simple average as follow:

$$ICOR = \frac{1}{n}\sum \frac{I_t}{(Y_t - Y_{t-1})} \quad \text{.....(4)}$$

So far, the approach for ICOR calculation using accumulation method is based on the assumption that the increase in output during period of t caused by the accumulation in investment during period of t. The formula used is:

$$ICOR = \frac{\sum I_t}{\sum (Y_t - Y_{t-1})} \quad \text{.....(5)}$$

The advantage of accumulation method is that in the application uses weighted mean. With weighted mean, the extreme ICOR coefficient in some years can be avoided.

In ICOR calculation, time lag in investment has to be considered. Usually, the investment in one period does not affect directly additional output in that period also, but it needs time lag. Thus, this time lag refers to lag. The ICOR formula with time lag is as follow:

$$ICOR = \frac{1}{n}\sum \frac{I_t}{(Y_{t+s} - Y_{t+s-1})} \quad \text{.....(6)}$$

Where s refers to time lag needed in getting the output since the investment has been implemented.

RESULTS AND DISCUSSION

Based on the data from BPS, the economic growth of Aceh Province calculated as real economic growth had been fluctuated during the period of 2011-2014. In year 2011 for instance, the growth rate was 3.28 percent which much lower than the growth rate in year 2012 as much as 3.85 percent. Meanwhile the growth rate in year 2013 was also lower compared to the previous years with the rate of 2.83 percent. The fall in the growth rate had continued in year 2014 with the rate of 1.65 percent.

For the year 2014, based on the data shown above, the economic growth of Aceh Province had shown the lowest rate. The reason was that in year 2014, Aceh Province had experienced a contraction in export that reached 27.78 percent and an expansion of import as much as 67.57 percent. Import component has been fluctuated during the analysis period. Import grew by 46.80 percent in year 2011 and then decreased significantly to 30.93 percent in 2012 and continued to decrease in year 2013 and 2014. The contraction in export for one of the reasons was caused by the decreasing in share of oil and mineral export. In the long run, in order to sustain economic growth in Aceh Province, agricultural export has a good prospect that contribute to economic growth.

As in other regions in Indonesia, agricultural sector has played dominant role in Aceh's economy. The lack of industrialization in the province has strengthened the role of agricultural sector. This is shown by the growing of agricultural sector during the previous years with the average growth had been 3.77 percent every year (BPS, 2014). Even the average growth rate had been 3.77 percent, but agricultural sector had supported other economic sectors and contribute for own source revenue.

Economic development means potential economic management by investment, the use of appropriate technology, the increase in organizational capacity and management that have the impact for the regions in ensuring the development. The regional development thus needs the increasing in investment and capital formation. Thus, it needs saving both from private and public sectors and also from domestic and abroad. Investment has been the engine of economic growth (Mankiw, 2000; Romer, 1996, Pelinescu, 2015). In attracting the investment, the government has to implement favorable investment policies especially in public and private sectors.

During the period of 2010 to 2014, investment in agricultural sector both domestic and foreign investment in Aceh Province had continuously increased every year. In year 2010, the total investment was 40 billion rupiah, and then in year 2011 the investment reached 63 billion rupiah and increased to 964 billion rupiah.

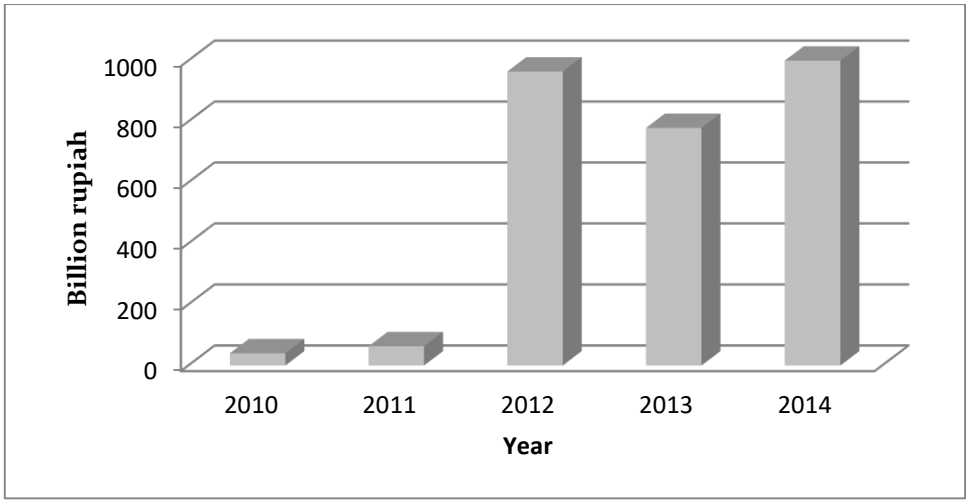

Figure 1. Investment in Agricultural Sector in Aceh Province (2010-2014)
Source: Indonesian Statistic Board, BPS (many years).

The trend showed the increase in investment in year 2013 and 2014 where the amount of investment reached 1 trillion rupiah. This fact has been the proof that agricultural sector is the dominant sector for Aceh economy (see Figure 1). Incremental Capital Output Ratio (ICOR) is a measurement that shows how much additional new capital or investment needed to increase one more unit output. The value of ICOR is got by comparing additional capital to additional output. Because of capital unit has different form, meanwhile output unit is relatively not so different, thus for the simplicity of the calculation, both values are measured in nominal term. According to Susilowati et al. (2012), the amount of investment needed can be determined accurately if the value of ICOR is known.

This ICOR refers to Harrod-Dormar theory that shows the relationship between the increase in production capacity stock and the capacity of the people to produce output. The higher the increase in production capacity stock (ΔK), the higher the capacity of the people to produce additional output (ΔY).

There are also the difficulties in calculating ICOR in order to get the features of investment needs for the future. The difficulties rise because the coefficient is not only determined by investment itself, but also by technological progress in the production process. Thus the ICOR calculation is not meant for the long run.

In the efforts to increase development qualities, Aceh government tries maximally to increase efficiency and productivity of the investment in the province. The reason is by increasing efficiency and productivity of investment, the output achieved is higher. The ICOR calculation in this study is undertaken by using Lag 0, Lag 1, Lag 2, and Lag 3. Lag 0 means that investment in year t will produce output in year t also. Lag 1 means that investment in year t will produce output in year t+1. Lag 2 means that investment in year t will produce output in year t+2. Finally, Lag 3 means that investment in year t will produce output in year t+3. The detail of ICOR calculation can be shown by Table 3 below.

Table 3. The ICOR for Agricultural Commodities in Aceh Province for Period of 2010-2014

Year	Commodities	ICOR Lag 0	ICOR Lag 1	ICOR Lag 2	ICOR Lag 3
	Agriculture	0.118	0.090	0.070	0.130
	Crop Plantation	0.046	0.128	0.112	0.232
2010	Livestock	0.000	0.000	0.000	0.000
	Forestry	0.010	0.050	0.039	0.046
	Fisheries	0.000	0.000	0.000	0.000
	Agriculture	0.510	0.430	0.760	0.580
	Crop Plantation	0.751	0.655	1.358	1.224
2011	Livestock	0.000	0.000	0.000	0.000
	Forestry	0.059	0.045	0.054	0.005
	Fisheries	0.006	0.006	0.012	0.003
	Agriculture	1.950	3.480	2.640	-
	Crop Plantation	2.999	6.220	5.604	-
2012	Livestock	0.000	0.000	0.000	--
	Forestry	0.064	0.077	0.006	-
	Fisheries	0.004	0.008	0.002	-
	Agriculture	3.740	2.840	-	-
	Crop Plantation	6.470	5.829	-	-
2013	Livestock	0.000	0.000	-	-
	Forestry	0.160	0.074	-	-
	Fisheries	1.492	0.000	-	-
	Agriculture	3.170	-	-	-
	Crop Plantation	6.657	-	-	-
2014	Livestock	0.000	-	-	-
	Forestry	0.074	-	-	-
	Fisheries	0.000	-	-	-

Source: Research Results.

From Table 3 above, we can see that in the period of 2010-2014, the ICOR had been fluctuated for Lag 0, Lag 1, Lag 2, and Lag 3. For instance, in year 2011, the ICOR value for agricultural sector was 0.51, 0.43, 0.76, and 0.58. For Lag 0, ICOR value was 0.51, this number means that investment need as much as 0.51 rupiah for every additional output of 1 rupiah. During the period of analysis (2010-2014), in crop plantation commodities, the ICOR value was not efficient for year 2012 and 2013.

Generally, ICOR value that shows the productivity in investment is good for the value between 3 and 4. The higher the ICOR value, the higher the possibility of inefficiency in investment uses. Low ICOR refers to the

existence of efficiency in the capital uses and efficiency in the use of technology. Based on the theory of Solow and Swan, the rate of technological advances is one of the production factors in increasing the output in the economy.

If we observe based on year to year data, actually the investment in Aceh has been fluctuated. It can be seen from inefficiency of investment in many years during the observation period where ICOR for year t+1 in some years had been higher compared to year t. For instances, in 2012, in agricultural sector, in order to have additional output 1 unit, it was needed 1.95 unit of investment for Lag 0. This means that in order to get additional output (GDRP) of 100 million rupiah, it needs 195 million rupiah of investment. While in Lag 1, in order to get additional output as much as 1 unit, it needs the investment as much as 3.48 units. This means that in order to have additional GDRP as much as 100 million rupiah, it needs investment as much as 348 million rupiah.

From the analysis, it shows that in year 2012, there had been the increasing of ICOR value for all the Lags in crop plantation and forestry. It was caused by the increased in investment significantly by 358 percent. The increase in investment was not followed by the increase in GDRP where GDRP only increased by 7 percent. Consequently, ICOR value for the year 2012 had increased significantly compared to the previous years. The increase in ICOR had continued until year 2014.

The calculation of ICOR also done by investment accumulation method that applies weighted average for the observed period. The value of the ICOR by that method can be shown in Table 4 as follow.

Table 4. The ICOR Value Using Investment Accumulation Method for Agricultural Sector in Aceh Province (2010-2014)

No	Commodities Agriculture	ICOR 2.201
1	Crop Plantation	2.926
2	Livestock	0.000
3	Forestry	0.108
4	Fisheries	0.298

Source: Research Results.

The ICOR values have important implications for development planning in agricultural sector. We can calculate the investment needs for each sector using ICOR in order to get the target of output growth. The sectorial investment needs for 5 years (2015-2019) can be predicted as shown in Table 5.

Table 5. The ICOR Values for Agricultural Commodities Investment Needs in Aceh Province

Commodities	ICOR	GDRP 2014 (billion rupiah)	Investment Needs for 5 Years (2015-2019) based on GDRP growth rate (billion rupiah)			
			2%	4%	6%	8%
Agriculture	2.200	10.641	2.342	4.684	7.026	9.368
Crop Plantation	2.930	1.165	341	682	1,023	1,364
Livestock	0.000	0	0	0	0	0
Forestry	0.110	3	0.036	0.072	0.108	0.014
Fisheries	0.300	39	1	2	3	4

Source: Research Results.

Based on Table 5 we can see that for growth rate 4 percent per year, agricultural sector needs the investment as much as 4.686 trillion rupiah. This amount on average was 44.02 percent of the value of 2014 GDRP. It means that 44.02 percent of current GDRP has to be prepared for the investment need of future 5 years in order to have growth rate in investment by 4 percent per year. In the same meaning, in order to have GDRP growth by 8 percent per year, it needs the investment for future 5 years by 88 percent from current GDRP.

Meanwhile, with 4 percent growth rate of GDRP, the investment need for 5 years for crop plantation, forestry, livestock, and fisheries commodities are 58.51, 0, 2.16, and 5.95 percent of current value of GDRP. So far, if we want to have 8 percent of GDRP growth, the investment needs will be 117, 0, 4, and 12 percent of current GDRP.

Currently, Aceh government has the target of economic growth around 5 percent, thus the investment need for agricultural sector and its sub sector is also higher. There should be the effort to increase the investment in the province.

From accumulative ICOR approach, the value of the ICOR for agriculture and the development of commodities that have bigger impacts on people welfare for sub sector of crop plantation and forestry. It can be shown by the output of those sectors where with 4 percent crop plantation and forestry commodities development, its need five year investment by 628 billion rupiah or equivalent with 58.51 percent of GDRP.

The need for investment in agricultural sector in Aceh is relatively higher. But, it is reasonable because the agricultural sector is the main sector in Aceh economy. Currently, Aceh government has the effort to attract more investment to Aceh Province by promoting the investment opportunities in Aceh. At the same time, the government also relaxes some regulations that can be the obstacle for investment climates.

CONCLUSION

Based on the research results, it can be concluded that the ICOR for crop plantation, forestry, livestock, and fisheries commodities were 2.93, 0, 0.11, and 0.3. This means that in order to get GDRP growth by 4 percent, the five years investment need for crop plantation, forestry, livestock, and forestry commodities are 58.51, 0, 2.16, and 5.95 percent of current GDRP. In achieving 4 percent of economic growth, the investment need for crop plantation is higher compared to other sub sectors.

Furthermore, forestry and fisheries commodities can be the priority for developing agriculture in Aceh Province, this is caused by the amount of investment is low in order to get the output. The low level of the need of investment for these sub sectors may be the comparative advantages and efficiency in the production process.

In term of economic development of Aceh Province, the development of commodities that viewed to have higher impact for the people welfare is the sub sector of crop plantation and forestry. By developing and optimizing of these sub sectors, the welfare of the people can be increase and the poverty can be reduced.

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