Impact of Sei Mangkei SEZ in Perspective Rural-urban Linkages and Sustainability Development in Simalungun Regency

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Abstract : This study aims to determine and analyze the impact of the development of the Special Economic Zone (SEZ) of Sei Mangkei in the perspective of rural-urban linkages in increasing the income of the community in Simalungun Regency-North Sumatra-Indonesia. The result of this research concludes that there are positive and significant differences of income of society before and after development of Sei Mangkei SEZ agroindustry in Simalungun District; This research recommends to the Government of Simalungun Regency to be more proactive in taking policy in order to have the relevant of regional development policy related to Sei Mangkei SEZ, because it will have an impact on improving people's prosperity seen from income indicator, absorbing unemployment, and growth of business unit of the surrounding community due to the increase of demand for agricultural inputs required in industrial operations in Sei Mangkei SEZ as well as due to the broader multyplier effect of SEZ as growth-pole.

1 INTRODUCTION

1.1 Problem Statement

Some basic principles underlying the development of the region are as growth center, as well as spread effect that can be generated growth for the surrounding area, even nationally. In Indonesia, the Sei Mangkei SEZ agroindustry development policy has the objectives of: national economic development based on economic democracy with the principles of togetherness, fair efficiency, sustainability, environmental insight, independence, and by maintaining the balance of progress and national economic unity; maximize industrial activities, exports, imports, and other economic activities that have high economic value; accelerate regional development; as a breakthrough model of regional development for economic growth; and can create jobs. The realization of the development

policy of oil palm agro industry in North Sumatera Province is SEZ of Sei Mangkei Development as expansion of Palm Oil industry in increasing the value added of high quality products exported by Perkebunan Nusantara III Co. Ltd. The project requires space for an industrial site covering an area of 2002.77 hectares. The investment that goes to Sei Mangkei SEZ in 2013-2017 amounts to 5.10 trillion IDR for infrastructure and factory development, designed to accommodate more than 200 world-class industrial units that are significant for the realization of Indonesia's competitiveness into the future. The development of the Special Sei Mangkei Economic Zone is based on the advantages of location factors which can give the optimum profit position as close to primary input. The general theory of Losch (1954) to show how economic activity must be organized in a space. Sirojuzilam (2011), in many industries, the question is: if the peasants begin to produce a surplus of various

commodities, spatial economic patterns will constitute a sense of balance. The project is supported by investment allocation, granting of fiscal and non-fiscal facilities by the Indonesian government.

Production of small holder palm oil plantations, increased compared to the previous year. Statistical Central Bureau of Simalungun Regency noted that in 2016, Palm oil production increased to 10,749,068.32 tons in 2016, up from 2015 with a total production of 539,728.02 tons. However, the land area in 2016 decreased to 29,142.90 hectares, from the year before 29,251.81 hectares.

1.2 Research Questions

What is the impact of Sei Mangkei SEZ development in the perspective of rural-urban interrelationship in increasing income, employment and development of community business units in Simalungun Regency?. This study aims to determine and analyze the impacts before and after the development of the SEZ of Sei Mangkei in the perspective of rural-urban interrelationship in increasing the income of the community. The results of this study are expected to provide practical benefits to the government and decision makers where the direction of development programs that will be planned to create an optimal agroindustry linkages in the perspective of sustainable development.

2 LITERATURE REVIEW

2.1 Sustainable Development

Sustainability can be interpreted as "keeping things going", "the ability to survive and keep them from degenerating". In the context of agriculture, sustainability remains productive while maintaining a resource base. Accommodating the meaning of development to a value system is not something that can be easily solved. Some illustrations, to explain the shared dilemma of society, in relation to the evolving value system, in interpreting development through a measure of national income, are: Increased income (total or per capita) other than indirectly identical to a well-regarded distribution, nor indirectly economic welfare, comfort, and maintaining harmonious social relationships according to the community value system.

Development in Indonesia in the past which emphasizes on economic growth has negatively impacted the sustainability of natural resources and environment. To maintain the sustainability of future development, reorientation of development paradigm in terms of direction, strategy and policy (Septana, 2007) is needed.

The World Bank's sustainable development paradigm is translated into an environmentally sustainable development triangle based on economic, ecological and social sustainability. Economically sustainable means that a development activity must be capable of generating economic growth, capital maintenance, efficient use of resources, and investment. Serageldin (1996) in Dahuri (1998), ecologically sustainable means that the activity is capable of maintaining ecosystem integrity, maintaining environmental carrying capacity, and conserving natural resources including biodiversity. Social sustainability means that development can create equity of development outcomes, social mobility, social cohesion, community participation, community empowerment, social identity, and institutional development. Putra at all (2013), how efforts to align various aspects of interest while maintaining environmental sustainability are challenges in realizing sustainable agricultural development. Furthermore, Djojohadikusumo in Sri (2010), also says that economic development in the sense of progress does not merely mean increasing production and increasing per capita productivity as the numbers are flat. Development should mean the progress of society entirely. So development must be able to bring society from a static state to a dynamic development that encompasses all spheres of life. Mosher (1966) mention that agricultural development is an integral part of economic development and society in general. Many people use broader definitions and assess development to be sustainable if they include: ecologically sound, sustainable economically, justly, humane, and flexible.

2.2 Regional Concept and Regional Development

Republic of Indonesia Law Number 26 of 2007, provides a definition of region as a space that is a geographical unity along with all related elements whose limits and systems are determined on the basis of administrative and / or functional aspects. Rustiadi (2007) to acomadate the term region based on the context of discussion, dad, emphasis and

function. However, theoretically, there is no nomenclature difference between the terms region, region and region. In general all can be termed territory. Budiharsono (2005) divides the area into 4 types, are homogeneous territory, nodal area, administrative area, and planning area. Regional development is sectoral development in a region with the aim of not only spurring and growing the region (rural), but also the surrounding area (urban). Furthermore Riyadi (2002), said the development of the region is an effort to spur socio-economic development, reduce the gap between regions, and maintain environmental sustainability in a region. Hadjisaroso (1994). regional development is an act of developing the territory or build areas or regions in order to improve the welfare of the people. Tarigan (2004), regional development can be measured from several parameters, among others, the increase of public income, increase of employment, income distribution.

2.3 Rural - Urban Linkages

Hirshman (1958) was the first economist to operate the concept of linkage that describes the relationship between the linkage with economic development. Investment plays a dominant role in economic development as a capacity creator, income stimulator, and foundation layers to increase investment. True to that opinion, Simanjorang (2010, 167) said, in the framework of regional development, investment is one variable that is very decisive and can encourage economic growth of a region.

While Markusen in Kuncoro (2002, 24) states that agglomeration is a "non-volatile" site due to external savings. Agglomeration is a concentration of spatial economic and population activity that arises from the savings generated by adjacent locations. The Polar Theory of Growth by Perroux (1955) in Arsyad (1999) and became the basis of regional industrial policy development strategies that are widely applied in various countries today. The essence of this theory is: In the process of development will arise superior industry which is the main driving industry in the development of an area. Centralization of industry in an area will accelerate economic growth. The economy is a combination of a relatively active industrial system with a relatively passive industry that is dependent on industry-leading industries or growth centers. Furthermore, Adisasmita (2005), the growth process is consistent with the economic space theory, in which the driving industry is considered a starting point and an essential element for subsequent development.

The economic structure of a country shifts from agriculture/mining to non-primary sectors, especially industries. Chenery (1975), says that when percapita income is still low, most of the income comes from the agricultural sector (primary), as income increases the contribution of the agricultural sector decreases. This is indicated by the declining agricultural curve in line with rising per capita income. In contrast, the contribution of the industrial (secondary) and tertiary (or tertiary) sectors increased in line with the increase in per capita income.

Sihaloho (2013), the establishment of SEZ in some areas is expected to bring benefits in terms of increased investment, employment, foreign exchange earnings, competitive advantages of export products, increasing the utilization of local resources, services and capital for increasing exports, and encouraging the improvement of the quality of human resources through the transfer of technology . These objectives, in line with the government's vision to improve the economy and equity nationally and create strong economic fundamentals, both macro and micro, even nationally and regionally.

2.4 Backward and Forward Linkages

Soekartawi (1995), agroindustry is part of agribusiness activities, where agroindustry is the processing activities of agricultural commodities. If agriculture is defined as a business that produces agricultural commodities at the primary level, then its relation to industry can be backward linkage or forward linkage. The integration of economic development will be realized through the inter-sectoral economic linkage. Syafrizal (2015), if the inter-sectoral economic linkage is high enough, this means that development linkages will also be good enough. Therefore, to realize integrated development, priority is given to sectors with high inter-sectoral and vice versa. Any change in the final demand of the sector will result in a change in the output of that sector and will also result in changes in demand and output in other sectors or to all sectors in the economy. Backward circumference or pull factor because it is attractive to the sectors in the upstream to grow. Forward linkage is encouraging the growth of downstream sectors due to increased inputs provided by the upstream sector. So its nature is upstream encouragement in the future. This means changes in all downstream sectors that make upstream a sector to flourish (Tarigan, 2004: 103-107).

2.5 Overview of Sei Mangkei SEZ

In Government Republic of Indonesia Regulation Number 29 of 2012 on Special Economic Zones Sei Mangkei write, in order to accelerate economic development in the region of Simalungun, North Sumatra Province and to support the acceleration and expansion of national economic development, it is deemed necessary to develop the Sei Mangkei area as a special economic area. The Law of the Republic of Indonesia Number 39 of 2009 regarding SEZ concerning the consideration of SEZ development mentioned that to accelerate economic development in certain area which is strategic for national economic development and to maintain balance of progress of a region in national economic unity, it is necessary to develop SEZ. In line with that, the Government of Indonesia issued a policy related to the development of SEZ, namely the Economic Policy Package Volume VI to show the seriousness of the government to reform the economy, dated November 5, 2015 which also regulates efforts to move the economy in the periphery with the development of Special Economic Zone (http://ksp.go.id/ini-paket-kebijakan-ekonomi-jilid-6/).

It has been described in the previous section that one of SEZ's development strategies is to attract investment. The investment that goes to SEZ Sei Mangkei is in the form of investment of Indonesian government, State Owned Enterprise and Private Investment. Total Realization of investments coming into Sei Mangkei SEZ at year ended 2013 - 2017 of Rp 5.10 trillion,-. The number of workers working in Sei Mangkei SEZ and industries located in the region in 2017 is 783 people. In addition, there are workers who work not full time, as mechanical and mantainance, janitor, and cafeteria officers who are not recorded entirely

3 RESEARCH METHODOLOGY

The location of the research is the region Sei Mangkei SEZ and 4 subdistricts of the area covering: Bosar Maligas, Bandar, Hutabayu Raja and Ujung Padang as describe in fegure 1. This research includes quantitative research. This quantitative approach departs from the data to then be processed into useful information (Kuncoro, 2001). According to the method, this research includes descriptive research. Work model in this research use deductive thinking pattern toward inductive.

Figure 1: The Map of Sei Mangkei SEZ Location in Bosar Maligas of Simalungun Regency, 2017.

The data required in this study are primary and secondary data. Data collection techniques used are field research and library research. The population of this research is all the people in the 4 sub-districts mentioned above as many as 180,559 people, the sample size is calculated by Taro Yamane formula in Nasir (1998) so that the sample is 100 people drawn purposively sampling. To analyze SEZ of Sei Mangkei's impact on socio-economic aspect in the area around Sei Mangkei SEZ was analyzed by Linear Regression Equation and Pearson correlation. Furthermore, to the problem of research solved, used by Paired Sampel Test, because the independent variables are 2 categorized, the statistical test used is the t-test differentiation (the difference test is the average of two samples) using the formula (Ghozali, 2013), as shown below:

$$t = \frac{X_1 - X_2}{\sqrt{\left(\frac{S^2 x_1 (n_1 - 1) + S^2 x_2 (n_2 - 1)}{n_1 + n_2 - 2}\right)\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}} \quad (1)$$

Where: X_1 = average of income, employment, and growth of business unit, ie condition of income, employment, and growth of business unit of society after SEZ Sei Mangkei. X_2 = average income, employment, and growth of business unit, ie condition of income, employment, and growth of community business unit, prior to SEZ Sei Mangkei. $S^2 X_1$ = first sample deviation standard; $S^2 X_2$ = second sample deviation standard; n_1, n_2 = first and second sample size.

Furthermore, t-count is compared with t-table value at α = 0,05, with decision making criterion: significant if t count> t table or if significance value <α = 0.05. To answer the problem that is to know the public response to the existence of Sei Mangkei SEZ used Chi Square Test (X^2), with the formula (Priyatno, 2010) as shown below:

$$x^2 = \sum_{i=1}^{k} \frac{(fo - fh)^2}{fh} \quad (2)$$

Where: fo = number of observations; fh = number of expected observations. Testing using significance level α = 0.05.

4 RESEARCH RESULT AND DISCUSSION

4.1 Research Result

Based on the result of statistical data processor, using SPPS 21 application to conduct Rank Spearmen Regression analysis and calculate by Chi Kwadrat obtained the result as which is described in the following section. The impact of Sei Mangkei SEZ existence in Simalungun Regency to the surrounding area is seen from the income of community.

Impact on Community Revenue in the study sites was analyzed using the mean difference test. To know the significance of difference of income is then analyzed by using paired sample test (t-test). From descriptive statistic calculation, it is known that the average value of community response after Sei Mangkei SEZ is 22.17 with a standard deviation of 2,429. The average value of community response before Sei Mangkei SEZ was 22.28, with a standard deviation of 2,644. Furthermore, the hypothesis testing is based on the results of test the data, as shown in the table 1.

Table 1: t-Test of Differences Income.

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	12.696	2.076		6.115	.000
Community Revenue Before SEZ Sei Mangkei	.531	.076	.578	7.004	.000

a. Dependent Variable: Community Revenue After SEZ Sei Mangkei
Source: Results of Data Processing SPSS 21, 2018.

The result of data analysis shows t_{count} value of 6,115 with significance value 0,000 (0,000 < 0,05). Then H_0 is rejected. It means that there is a difference of people's income before and after Sei Mangkei SEZ is significant. From the calculation of descriptive statistic known the average value of community response after SEZ Sei Mangkei is 27.07 with standard deviation 2.57123. Written in the form of simple linear regression model $Y = 12.70 + 0,58X$. The value of the Pearson correlation

ratio of 0.578, as shown in the table 2, suggests that earnings after SEZ Sei Mangkei have a positive correlation to earnings after Sei Mangkei SEZ with earnings before the SEZ.

Table 2: Correlation Coefficient Value of Pearson Revenue Society.

Correlations

Model		Community Revenue After Sei Mangkei SEZ	Community Revenue Before Sei Mangkei SEZ	R Square
Community Revenue After Sei Mangkei SEZ	Pearson Correlation	1	.578[**]	.334
	Sig. (2-tailed)		.000	
	N	100	100	
Community Revenue Before Sei Mangkei SEZ	Pearson Correlation	.578[**]	1	
	Sig. (2-tailed)	.000		
	N	100	100	

**. Correlation is significant at the 0.01 level (2-tailed).
Source: Results of Data Processing SPSS 21, 2018.

The value of R^2 count of 0.33 means the increase in the income of the community 33.00 percent due to the SEZ of Sei Mangkei, while 77.00 percent more caused by other factors not discussed in this study. The results of data analysis indicate that there is a difference that there are differences in income before and after Sei Mangkei SEZ positively and significantly. If it is written in the form of a simple linear regression equation model $Y = 12.70 + 0.58X$.

The results of this study are supported by statistical data, namely Gross Regional Domestic Product (GRDP) of Simalungun Regency in 2016 amounted to 30.19 trillion rupiahs according to current prices, driven by all sector economic activities where the agricultural sector is the largest contibution of growth that reaches 2.75%. Contribution of GRDP of Simalungun Regency is mostly from Agricultural Sector, 50.99%. Lingga D. and Pratomo, W. (2013) also said that in society's perception, Sei Mangkei will improve the living standard of the people around Bosar Maligas Sub-district in the form of increasing people's income, also in terms of the availability of social and economic facilities and infrastructure. The results of Sinurat's (2018) study also stated that Sei Mangkei's SEZ agroindustry policy will increase income in Simalungun Regency. It can be concluded that the existence of Sei Mangkei SEZ has a positive impact on the sorrounding area viewed from the aspect of community revenue. With the increase of people's income will improve the welfare and poverty reduction.

4.2 The Impact of Sei Mangkei SEZ Agroindustry Development the Rural-Urban Linkages and Sustainable Development of Simalungun Regency

Long-term well-being of the community is an indication of sustainable development can also be measured by poor population based on data of National Social Economic Survey of 2016 is 92,19 thousand or 10.81% has decreased compared to 2015 reached 92.89 thousand people with poverty line in 2016 amounting to Rp. 315.947. But when viewed from the index of severity of poverty and the index of severity of poverty actually increased. The poverty depth index from 1.22 to 1.60 in 2016 and the Poverty Severity Index from 0.26 to 0.40 by 2016, as shown in the table 3.

Table 3: Poverty Line and Poor People in Simalungun District, 2014-2016.

Year	Line of Poverty (people)	Poor People (000 people)	%
2014	274.867	86,25	10,20
2015	283.234	92,89	10,96
2016	315.947	92,19	10,81

Source: Simalungun District of Statistical Central Bureau, 2017.

The result of the research indicates that from the socio-economic aspect, there is a positive and significant impact on the income of the community after Sei Mangkei SEZ agroindustry in Simalungun Regency. From the results of research it is clear that the relationship between SEZ Sei Mangkei as an urban with the surrounding area as rural is characteristic of two areas that have a mutual relationship need. Economic impacts through increased income in the surrounding areas are certainly bringing economic prosperity, meaning there is interdependence between industrial areas and agricultural areas according to demand-supply law. The competitiveness of export products must go through production while maintaining the quality of natural resources and the environment and the use of labor that complies with the workers' basic human rights required for a *"green product"* in the global market. Thus economic, ecological, and social sustainability must be met.

5 CONCLUSIONS

From the result of data analysis and discussion formulated Conclusion and research recommendation that there are difference positively and significant of income of local community before and after development of Sei Mangkei SEZ agroindustry in Simalungun Regency. It is recommended to the Government of Simalungun Regency to be more proactive in taking policy in order to have the connectivity of regional development policy related to Sei Mangkei SEZ including controlling the conversion of agricultural land because it will affect the improvement of people's welfare in terms of increasing income due to the increasing demand the required inputs of industry in Sei Mangkei SEZ sequential and broader multiplier effect as urban fungcion of growth-pole.

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