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The Contribution of Agricultural Sector Oneconomic Districts/Cities in North Sumatra Province

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ABSTRACT

The agricultural sector is one of the most potential sectors to the growth and development of national economy, both in terms of income and employment. The contribution of the agricultural sector in Indonesia's development is no doubt. The purpose of this research is to know the contribution of agriculture sector in North Sumatra and contribution of agriculture sector to GRDP in every district/city in North Sumatra. The data used in this research is secondary data. The data collected is time series data from 2010 until 2014. Data analysis using description method and Location Quotion (LQ) method. The results showed that the agricultural sector is the sector that gives the largest contribution in the economy of North Sumatra. However, this contribution tends to decline from 2010-2014. The agricultural sector is a basic sector in 23 districts/cities in North Sumatra. Five districts/cities have the highest agricultural sector LQ scores are Kabupaten Karo (LQ 2.35), Nias Barat (LQ 2.33), West Phakpak Barat (LQ 2.31), Simalungun (2.26) and Nias Utara (LQ 2.20).
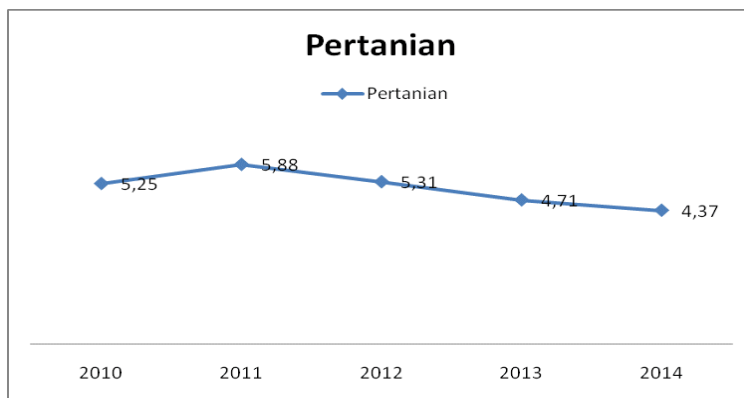
Keywords :GDRP, Agriculture, LQ

Introduction

Indonesia, as one of the developing countries with the agricultural sector as the main source of livelihood. The fact that most of the land in the territory of Indonesia is designated as agricultural land and almost 50% of the total workforce is still dependent on working in the agricultural sector (Dillon, 2004). In addition, the agricultural sector is one sector that produces inputs or raw materials for the industrialization process. Such a situation demands that economic development in Indonesia should be based on sustainable agricultural development.

The agricultural sector as one of the economic sectors includes a very potential sector in contributing to the growth and development of the national economy. The role of the agricultural sector in Indonesia's development is no doubt. In Indonesia, agricultural development is directed at increasing agricultural production to meet domestic food and industrial needs, increasing export and income of farmers, expanding employment opportunities, and promoting equity. However, the role of the agricultural sector does not necessarily contribute to the largest Gross Regional Domestic Product (GRDP) for some regions but for some areas again agriculture contributes the most to the GRDP.

North Sumatra Province is one of the areas that have potential in agriculture is quite high. Unfortunately, the contribution of the GRDP to the agricultural sector is less followed by the large growth rate of agriculture sector. Based on data from the Badan Pusat Statistik (BPS) (2015), the growth rate of the agricultural sector increased in 2011, but decreased to 5.31% (in 2012), decreased by 4.71% (2013) and 4.37% in 2014. Whereas growth rate GRDP also continues to increase every year. This condition indicates a change in the contribution of the agricultural sector in the North Sumatra economy in general, and districts in particular.

Picture 1. Growth of GRDPat 2010 Constant Market Price by Agriculture Sector (Persentage)

Source: GRDP of North Sumatera , Badan Pusat Statistik (BPS), 2016

Agriculture is one of the sectors that become the main driving force in the economic activities of regencies / cities in North Sumatra, one of the activities of regional development. One indicator to see the economic growth of a region is by looking at the progress of growth and increasing the value of GRDP both based on current prices and constant prices from year to year. If the value of GRDP has increased significantly in each year, it can be said the economy of a region getting better, on the contrary if the GRDP of a region shows stagnation and even decline from year to year it can be concluded that the economic development of a region experiencing barriers.

The growing regional economy will show changes in the role of each sector and changes in the regional economic structure. In general, the structure of the economy moves from the agricultural sector to the industrial sector and then to the service sector. This process will work well if considering the sectors that have comparative advantage and become a priority in the economy (Ma'mun and Irwansyah, 2012).

Based on the description of the background, further research on the contribution of the agricultural sector in the formation of GRDP in each regency / city and to know which districts/city make the agricultural sector as the leading sector of the region.

Method

The data used in this research is secondary data. The data collected is time series data from 2010 until 2014. Time series data is data consisting of one object but consists of some time period. This study was conducted using secondary data sourced from Badan Pusat Statistik (BPS) of North Sumatra Province. The data obtained are GDP data of economic sectors at constant 2010 prices according to business field in 33 districts/cities in North Sumatra.

Data analysis method used is descriptive method and LQ method. Descriptive method is done to know the contribution amount of Agricultural Sector in 33 regencies / cities in North Sumatera Province. Calculation of contribution of Agriculture Sector to PDRB used formula:

$$Pit = \frac{Sit}{} \text{ X } 100\% \quad \underline{\hspace{2cm}}$$

Tt

Note:

pit   = The amount of contribution of Agriculture Sector in year t (%)

Sit   =GRDP of Agriculture Sector in year t (Rp)

Tt   = Total GDP in year t (Rp)

The Location Quotion (LQ) method is used to identify the leading sectors in each region. The LQ method is the relative comparison between the capabilities of a sector in the area under investigation with similar capabilities over a larger area.

$$LQ= \frac{Vi/vt}{Yi/yt}$$

The structure of the LQ formula gives several values: LQ> 1, LQ = 1, LQ <1.

If using the production value as a calculation material (Tarigan.R, 2005), then:

a. LQ is greater than one (LQ> 1)

This means that the commodity is a base sector, meaning that the production of the commodity concerned has exceeded the consumption needs in the area where the commodity is produced and the excess can be sold outside the region. In this case the level of special sector specialization at Regency / Municipality i is greater than the same sector at the Provincial level.LQ is smaller than one (LQ <1)

Production of these commodities is not sufficient for consumption in the area concerned and the fulfillment is imported from other regions. In this case the specialization of a particular sector at the Regency / Municipality i is smaller than the same sector at the Provincial level.

C . LQ is equal to one (LQ = 1)

The production of the commodities concerned is only sufficient for local needs. In this case the level of a particular sector specialization at the Regency / Municipality is equal to the same sector at the Provincial level.

Result and Discussions
Economy of North Sumatra

The economy in North Sumatra can be seen through the Gross Regional Domestic Product (GRDP) of North Sumatra Province. GRDP of North Sumatra at current market price in 2014 were 523.77 trilliun rupiahs. Base on constant market prices in 2010, GRDP of North Sumatra in 2014 was amounted to 419.65 trilliun rupiah.Overall, the economy of North Sumatra in 2014 grew by 5.23 percent, which decreased from 2013 which was 6.08 percent.

Agriculture sector was a major contributor with the role of 23.18 percent (at current market prices) and the role of 24.85 percent (at constant market prices) in 2014. GRDP of North Sumatra at constant market prices in 2014. This can be seen in table 1 below:

Tabel 1. Gross Regional Domestic Productby Indutrial Origin at 2010 Constant Market Prices (Billion Rupiahs) 2010-2014

Industrial	Years		Average

Origin	2010	2011	2012	2013	2014	
1. Agriculture, Forestry & Fishing	85,561	90,592	95,405	99,899	104,269	95,145
2. Mining & Quarrying	3,336	3,693	4,135	5,211	5,489	4,373
3. Manufacturing	70,540	72,815	76,922	80,648	83,042	76,793
4. Electricity & Gas	501	570	553	532	551	542
5. Water Supply Sewerage Waste Management Remediation Activity	316	336	354	374	396	355
6. Construction	38,650	41,921	44,718	48,144	51,411	44,969
7. Wholesale & Retail trade, Repair of Motor Vehiches and Motorcycles	56,555	60,589	65,384	69,025	73,817	65,074
8. Transportation & Storage	14,101	15,545	16,827	18,075	19,107	16,731
9. Accommodation & Food Service Activities	6,936	7,527	8,035	8,663	9,225	8,077
10. Information & Communication	7,465	8,209	8,930	9,625	10,321	8,910
11. Financial & Insurance Activities	9,676	10,519	11,581	12,738	13,100	11,523
12. Real Estate Activities	12,814	14,052	15,030	16,072	17,132	15,020
13. Business Activites	2,711	3,001	3,182	3,395	3,624	3,183
14. Public Administration & defense	11,212	12,213	12,522	12,940	13,836	12,545
15. Education	6,690	7,011	7,357	7,970	8,478	7,501
16. Human Health & Social Work Activities	2,500	2,900	3,207	3,554	3,803	3,193
17. Other Services Activities	1,510	1,646	1,775	1,908	2,042	1,776
GRDP	331,085	353,147	375,924	398,779	419,649	375,717

Source: GRDP of North Sumatra, BPS, 2016 (Processed)

Based on the above table shows that the agricultural sector gives the largest contribution to the GRDP of the Province of North Sumatra from 2010 to 2014 (average contribution of 25.35%). The manufacturing sector is the sector which

contributes the second largest after agriculture sector. The growing processing industry sector in North Sumatera Province is generally agroindustry. This sector means that the processing industry derived from the agricultural sector as input production.

Contribution of Agricultural Sector to GRDP ini Every District/city in North Sumatra Province

Development in Indonesia runs by making economic growth a target. However, economic growth does not necessarily reflect the advancement of the Indonesian economy. The high economic growth in Indonesia before the crisis era did not illustrate that the growth is the business units owned by most Indonesians. On the contrary, what drives growth are foreign-owned business units and conglomerates. Similarly, the increasing per capita income of Indonesia does not show the income of every Indonesian citizen getting better.

Each region has a livelihood in accordance with the characteristics of each region. People's livelihoods are usually associated with land use and natural resources. Examples are agriculture, livestock, plantation, fishery, forestry, mining, industry, mining. Livelihoods are also usually associated with services, transportation, tourism etc.

The agricultural sector is the sector that absorbs the most labor. The agricultural sector should receive greater attention. The number of household farming businesses is currently declining. The government is expected to increase its contribution in the agricultural sector due to the large number of people working as farmers. The government is thinking about how to grow in the agricultural sector. The government is also expected to take action for the welfare of peoples working as farmers.

To see the magnitude of the contribution and the magnitude of the growth rate of the agricultural sector to the Gross Regional Domestic Product of districts/cities in North Sumatra we can see in table 2 below:

Table2. Contribution of Agricultural Sector to Gross Regional Domestic Product among Regency in North Sumatera Year 2010-2014

District/City	Years					Average (%)
	2010	2011	2012	2013	2014	
Karo	60.37	60.23	59.68	59.26	58.66	59.64
Nias Barat	60.24	59.5	59.21	58.8	58.26	59.20
Pakpak Bharat	57.93	58.34	58.71	59.01	59.35	58.66
Simalungun	57.95	57.73	57.38	57.07	56.74	57.37
Nias Utara	55.73	55.92	56.09	56.15	55.72	55.92
Padang Lawas	55.37	54.99	54.53	54.13	53.75	54.55
Samosir	53.36	52.7	53.01	53.02	52.96	53.01
Tapsel	56.06	55.99	53.2	46.65	46.38	51.65
Nias	50.97	50.58	50.58	50.65	50.15	50.58
Taput	50.94	50.46	50.05	49.57	48.72	49.94
Tapteng	49.93	49.89	49.93	49.77	49.44	49.79
Nias Selatan	49.56	49.38	48.91	48.51	48.3	48.93
H. Hasundutan	50.13	49.41	48.72	48.46	47.51	48.84
Dairi	49.54	48.96	48.59	48.18	47.47	48.54

Madina	48.28	48.31	48.38	48.46	48.12	48.31
Langkat	45.86	45.35	44.91	44.54	43.84	44.90
Paluta	45.48	45.22	44.83	44.52	44.31	44.87
Sergai	44.08	44.03	43.58	43.14	42.7	43.50
Asahan	43.63	43.35	42.71	42.48	42.44	42.92
Labura	39.82	40.75	40.37	40.42	40.39	40.35
Tobasa	35.84	35.47	35.39	35.11	34.72	35.30
Labusel	31.98	32.46	32.36	32.42	32.34	32.31
Labuhanbatu	28.67	28.84	28.95	28.93	28.8	28.83
Sibolga	24.4	24.25	23.92	23.6	23.11	23.85
Batu Bara	21.82	21.81	21.5	21.48	21.43	21.60
Tanjung Balai	18.73	18.24	17.74	17.3	17.19	17.84
G. Sitoli	15.73	15.45	15.29	15.22	15.07	15.35
Deli Serdang	14.25	14.08	13.76	13.01	12.27	13.47
P. Sidimpuan	13.82	13.37	13.03	12.6	12.12	12.98
Binjai	4.83	4.73	4.55	4.14	3.91	4.43
P. Siantar	2.35	2.26	2.18	2.10	2.00	2.17
T. Tinggi	1.66	1.6	1.55	1.51	1.42	1.54
Medan	1.36	1.23	1.15	1.1	1.09	1.18
North Sumatra	**25.84**	**25.65**	**25.37**	**25.05**	**24.84**	**25.35**
Indonesia	**13.92**	**13.63**	**13.45**	**13.27**	**13.17**	**13.48**

Source: GRDP of North Sumatra. BPS. 2016 (Processed)

From Table 2 above.it can be seen that almost all districts have significant agricultural sector contribution and exceed the contribution of agriculture sector in North Sumatra and Indonesia. There are 23 districts (69.70%) that have contribution of agricultural sector aboveaverage contribution of agriculture sector of North Sumatera Province and also 23 regency and 4 city (81.81%) have contribution of agriculture sector above average of contribution of agriculture sector nationally .

The highest contribution of agricultural sector is Karo district with average contribution of 59.64%. followed by West Nias district with an average of 59.20%. Pakpak Bharat district with an average of 58.66%. The contribution of the agricultural sector and the rate of growth of the agricultural sector is one indicator of the economic growth of a region that describes the level of economic growth. This indicator can be used as an assessment parameter to the extent to which the success of development in an area within a certain period. Given the large contribution of the agricultural sector. the district / city governments in North Sumatra are expected to prioritize the development of the leading sectors by not neglecting other sectors in planning and implementing development in an effort to increase the GRDP in each district/city.

Comparison of Agriculture Sector Contribution Including Superior Sector of District/City in North Sumatra

Basic economic theory states that the determinant factor for economic growth of a region is directly related to the demand for goods and services from outside the area concerned. The regional economic sector can be divided into two sectors.namely the base sector and the non-base sector. The base sector is a sector capable of producing goods and services for local consumption and able to export outside the region concerned. While the non-base sector is a sector that is only able to produce goods and services for local market consumption and has not been able to export out of the region concerned (Arsyad. 1999). Economic growth of a region can be improved by knowing which sectors are the basic sector.where the base sector can encourage the economy of the region concerned.so it can be determined priority development of any sectors of the economy that can encourage economic growth of a region.

In view of the large contribution of agriculture sector including the major sector of regencies / cities is by looking at the average contribution rate in each year through the calculation of Location Quotient (LQ). The value of the calculation of Location Quotient (LQ) ranges from LQ> 1. LQ = 1. LQ <1. Categorized leading sectors if the value of LQ> 1.otherwise if the value of LQ = 1 and LQ <1 then it is not said superior sector. To see which districts/cities are the main sectors of agriculture can be seen in the following table:

Table3. Average LQ Value of Agriculture Sector in every regency / city in North Sumatera Year 2010-2014

District/City	LQ Value of Agriculture Sector					Average LQ
	2010	2011	2012	2013	2014	
Karo	2.33	2.34	2.35	2.36	2.36	2.35
Nias Barat	2.33	2.31	2.33	2.34	2.34	2.33
Pakpat Bharat	2.24	2.27	2.31	2.35	2.38	2.31
Simalungun	2.24	2.25	2.26	2.27	2.28	2.26
Nias Utara	2.15	2.18	2.21	2.24	2.24	2.20
Padang Lawas	2.14	2.14	2.14	2.16	2.16	2.15
Samosir	2.06	2.05	2.08	2.11	2.13	2.09
Tapanuli Selatan	2.16	2.18	2.09	1.86	1.86	2.03
Nias	1.97	1.97	1.99	2.02	2.01	1.99
Tapanuli Utara	1.97	1.96	1.97	1.97	1.96	1.97
Tapanuli Tengah	1.93	1.94	1.96	1.98	1.98	1.96
Nias Selatan	1.91	1.92	1.92	1.93	1.94	1.93
Humbang Hasundutan	1.93	1.92	1.92	1.93	1.91	1.92
Dairi	1.91	1.90	1.91	1.92	1.91	1.91
Mandailing Natal	1.86	1.88	1.90	1.93	1.93	1.90
Langkat	1.77	1.76	1.76	1.77	1.76	1.77
Padang Lawas Utara	1.76	1.76	1.76	1.77	1.78	1.77
Serdang	1.70	1.71	1.71	1.72	1.71	1.71

Bedagai						
Asahan	1.68	1.69	1.68	1.69	1.70	1.69
Labuhanbatu Utara	1.54	1.58	1.59	1.61	1.62	1.59
Toba Samosir	1.38	1.38	1.39	1.40	1.39	1.39
Labuhanbatu Selatan	1.23	1.26	1.27	1.29	1.30	1.27
Labuhanbatu	1.10	1.12	1.14	1.15	1.15	1.13
Sibolga	0.94	0.94	0.94	0.94	0.93	0.94
Batu Bara	0.84	0.85	0.84	0.85	0.86	0.85
Tanjung Balai	0.72	0.71	0.69	0.69	0.69	0.70
Gunung Sitoli	0.60	0.60	0.60	0.60	0.60	0.60
Deli Serdang	0.55	0.54	0.54	0.51	0.49	0.53
Padang Sidimpuan	0.53	0.52	0.51	0.50	0.48	0.51
Binjai	0.18	0.18	0.17	0.16	0.15	0.17
Pematang Siantar	0.09	0.08	0.08	0.08	0.08	0.08
Tebing Tinggi	0.06	0.06	0.06	0.06	0.05	0.06
Medan	0.05	0.04	0.04	0.04	0.04	0.04
North Sumatra	**1.85**	**1.88**	**1.88**	**1.88**	**1.88**	**1.87**

Source: GRDP of North Sumatra. BPS. 2016 (Processed)

In table 3 above can be seen that there are 21.21% or 7 districts which each year has a significant increase in LQ value of agriculture sector.the districts are: Pakpak Bharat, North Nias, Padang Lawas, Samosir, Nias, Mandailing Natal District and North Labuhanbatu Regency. The increase is from 2% to 4% per year.indicating that the 7 districts experience an increase in income in the agricultural sector each year. Although the 7 districts are increasing every year. Karo Regency is still the highest in providing income to the agricultural sector. Karo Regency gets an average LQ of agricultural sector of 2.35.while the value of LQ North Sumatra every year is quite stable at 1.88.

In addition.there are 23 districts with LQ greater than 1 meaning that the agricultural sector in 23 districts is larger than the same sector at the provincial level. These sectors are the basis sector.meaning that the production of agricultural commodities already exceeds the consumption needs in the area where the commodity is produced and the excess can be sold outside the region. So it can be concluded that the agricultural sector in 23 districts including the leading sectors that have the highest LQ score in 23 districts.

Of the 23 districts, there are 8 districts with an average LQ above 2.including Karo Regency with an average LQ of 2.35. West Nias Regency of 2.33. Pakpak Bharat Regency of 2.31. Kabupaten Simalungun 2.26. North Nias Regency is 2.20. Padang Lawas District 2.15. Samosir District 2.09. South Tapanuli Regency 2.03.

Table 4. Average LQ Value of District/ City in Agricultural Sector Year 2010-2014

No	District/City	Agriculture LQ Value	Base/Non Base
1	Karo	2.35	Base
2	Nias Barat	2.33	Base
3	Pakpat Bharat	2.31	Base
4	Simalungun	2.26	Base
5	Nias Utara	2.20	Base
6	Padang Lawas	2.15	Base
7	Samosir	2.09	Base
8	Tapanuli Selatan	2.03	Base
9	Nias	1.99	Base
10	Tapanuli Utara	1.97	Base
11	Tapanuli Tengah	1.96	Base
12	Nias Selatan	1.93	Base
13	Humbang Hasundutan	1.92	Base
14	Dairi	1.91	Base
15	Mandailing Natal	1.90	Base
16	Langkat	1.77	Base
17	Padang Lawas Utara	1.77	Base
18	Serdang Bedagai	1.71	Base
19	Asahan	1.69	Base
20	Labuhanbatu Utara	1.59	Base
21	Toba Samosir	1.39	Base
22	Labuhanbatu Selatan	1.27	Base
23	Labuhanbatu	1.13	Base
24	Sibolga	0.94	Non Base
25	Batu Bara	0.85	Non Base
26	Tanjung Balai	0.70	Non Base
27	Gunung Sitoli	0.60	Non Base
28	Deli Serdang	0.53	Non Base
29	Padang Sidimpuan	0.51	Non Base
30	Binjai	0.17	Non Base
31	Pematang Siantar	0.08	Non Base
32	Tebing Tinggi	0.06	Non Base
33	Medan	0.04	Non Base
34	**North Sumatra**	**1.87**	**Base**

Source: GRDP of North Sumatra. BPS. 2016 (Processed)

The highest LQ value in the agricultural sector is in Karo Regency. The value of LQ in Karo Regency is 2.35 where the value of LQ> 1 which means the level of specialization of agriculture sector in Karo Regency is greater than the same sector at the provincial level and the commodity is the base sector.meaning that the agricultural commodity production has exceeded the consumption needs in the region Where the commodity is produced and the excess can be sold out of the region. So it can be concluded that the agricultural sector in 23 districts including the leading sectors.

Table 3 above shows that there are 23 districts or 69.70% whose LQ value of agricultural sector is more than one. This indicates that the district / city has an advantage in agriculture sector.while 2 districts and 8 cities or 30.30% of LQ value of agriculture sector is less than one. The LQ score of less than 1 indicates that the sector is said to be non-base (not the leading sector). Nevertheless.from 23 districts with LQ value of agricultural sector more than one.only 15 districts or 45.45% whose LQ value of agricultural sector exceeds the average LQ of agriculture sector of North Sumatra. This condition shows that only 15 districts or 45.45% are able to give the biggest income in the agricultural sector every year.while 10 districts and 8 cities or 54.55% of LQ value of agricultural sector are still below the

Conclusion

Based on the results of the discussion.then there are some things that become conclusions.namely:

1. The agricultural sector contributes the most to PDRB in 23 regencies / cities in North Sumatra. There are 2 regencies and 8 cities that the agricultural sector does not contribute greatly. namely: Deli Serdang. Batu Bara. Sibolga. Tebing Tinggi. Pematang Siantar. Tebing Tinggi. Medan City. Binjai City. Padangsidimpuan City. Sitoli.
2. The agricultural sector is the leading sector in 23 regencies in North Sumatra in 2010-2014. There are 10 districts / municipalities that the agricultural sector is not a leading sector. namely: Deli Serdang. Batu Bara. Sibolga. Tanjung Balai. Pematang Siantar. Tebing Tinggi. Medan City. Binjai City. Padang Sidimpuan City. Sitoli. However. the average in each regency / city (33 districts / municipalities) of the superior sector is the agricultural sector.
3. Contribution of agriculture sector in districts / municipalities including the leading sector of agriculture sector. which has the highest LQ value that is Karo Regency of 2.35.

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