Analysis of Sub-Sector Performance of Agriculture in Pekalongan Regency, 2013-2017

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ABSTRACT

This research is focused on the Agriculture sub-sector performance in Pekalongan Regency which emerged from the reality that agricultural land has decreased in 2017 and 2018 while the nonagricultural land has increased. The reality is also accompanied by decreasing in the agriculture contribution to GRDP of Pekalongan Regency during 2013-2017. Besides that, in the average of 2014-2017 it's GRDP is the lowest among regencies in the former of Pekalongan Residency. The purpose of this research is to analyze the classification of growth and the contribution of agriculture sub-sectors. The method of this research is Klassen Typology and Contribution Production of superior products in each district. The result shows that agriculture sub-sectors in Pekalongan Regency are classified into developed sub-sector but distressed (i.e. horticultural crops, forestry and logging, and fisheries), developing sub-sector (i.e. plantation crops); and the lagging sub-sector (i.e. food crops, livestock, and agricultural and hunting services). Pekalongan Regency has 19 districts, with 15 products of plantation crop. Contribution production shows that Paninggaran District has the highest contribution of plantation crops in the Pekalongan Regency.

Keywords: Agriculture Sub-Sector, Growth *Classification*, Contribution.

ABSTRAK

Penelitian ini difokuskan pada kinerja sub-sektor Pertanian di Kabupaten Pekalongan yang bersumber dari kenyataan bahwa lahan pertanian mengalami penurunan pada tahun 2017 dan 2018 sedangkan lahan nonpertanian mengalami peningkatan. Realitas tersebut juga diiringi dengan penurunan kontribusi pertanian terhadap PDRB Kabupaten Pekalongan selama 2013-2017. Selain itu, rata-rata PDRB Kabupaten Pekalongan tahun 2014-2017 paling rendah di antara kabupaten/kota yang ada di eks Karesidenan Pekalongan. Penelitian ini bertujuan untuk menganalisis klasifikasi pertumbuhan dan kontribusi sub-sektor pertanian. Metode yang digunakan dalam penelitian ini adalah Tipologi Klassen dan Kontribusi Produksi Produk Unggulan tiap-tiap kecamatan di kabupaten ini. Hasil penelitian menunjukkan bahwa sub-sektor pertanian di Kabupaten Pekalongan tergolong dalam sub-sektor maju tetapi tertekan (yaitu tanaman hortikultura, kehutanan dan penebangan, dan perikanan), sub-sektor berkembang (yaitu tanaman perkebunan); dan sub-sektor tertinggal (yaitu tanaman pangan, ternak, dan jasa pertanian dan perburuan). Kabupaten Pekalongan memiliki 19 kecamatan, dengan 15 hasil perkebunan. Kontribusi produksi menunjukkan bahwa Kabupaten Paninggaran memiliki kontribusi tanaman perkebunan tertinggi di Kabupaten Pekalongan.

Kata Kunci: *Sub-Sektor Pertanian, Klasifikasi Pertumbuhan, Kontribusi.*

INTRODUCTION

According to the latest Law of the Republic of Indonesia No. 23 of 2014 about Local Government stated that Regional Autonomy is the right, authority, and obligation of autonomous regions to regulate and manage their government affairs and the interests of local communities in the Unitary State of the Republic of Indonesia system.

Regions have rights and powers in regulating development. According to Arsyad (2010: 374), regional development is the process of forming new institutions, improving work capacity, building alternative industries, identifying new markets, transferring knowledge, and developing new companies in the regions. Regional development also includes sectoral development of the area. One of the focuses on regional development is agricultural development. Agriculture is a primary sector for human life because every human being needs food to live and some needs work from agriculture. Isbah & Iyan (2016) stated that indicators of economic development in an area from year to year can be seen from the value of Gross Domestic Product (GDP) for the country and Gross Regional Domestic Product (GRDP) for the region.

Pekalongan Regency is one of the regencies in Central Java Province that has the lowest average growth rate of the GRDP (by constant price 2010) during 2014-2017 in the former Pekalongan Residency. Even, it's growth rate is lower than the two adjoining regencies, i.e. Pekalongan City and Batang Regency. It means that the economic performance of Pekalongan Regencies moves slower than others. Table 1 shows the growth rate of GRDP in the former Pekalongan Residency during 2014-2017.

Table 1. GRDP to Constant Price Growth Rate of 2010 by Regency / The Former Pekalongan Residency, 2014-2017 (in percent)

Regency / City	2014	2015	2016	2017	Average	Rank
Batang Regency	5.31	5.42	4.98	5.29	5.250	6
Pekalongan Regency	4.95	4.78	5.16	5.28	5.043	7
Pekalongan City	5.48	5.00	5.36	5.32	5.290	5
Pemalang Regency	5.52	5.58	5.38	5.39	5.468	1
Tegal Regency	5.03	5.49	5.92	5.38	5.455	3
Tegal City	5.04	5.45	5.44	5.46	5.348	4
Brebes Regency	5.30	5.98	5.08	5.47	5.458	2

Source: The Central Statistics Agency of Pekalongan Regency, 2018

Even though it has a low GRDP growth rate, however, Pekalongan Regency also has an increasing GRDP average value. The agricultural sector's GRDP in Pekalongan Regency has a value or amount that has also increased from 2013-2017. However, if seen from its contribution in 2013-2017, the total GRDP has decreased. This can be seen in Table 2 below.

Table 2. Agriculture GRDP Sector and Contribution to GRDP in Pekalongan Regency, 2013-2017

Year	2013	2014	2015	2016	2017
Number of GRDP (in billion rupiahs)	2,226.95	2,196.13	2,262.32	2,307.52	2,308.78
Contribution (in percent)	18.50	17.38	17.09	16.57	15.72

Source: The Central Statistics Agency of Pekalongan Regency 2019, data processed

The Central Statistics Agency divides the agricultural sector into three large sub-sectors namely agriculture, forestry, and fisheries. This study of the agricultural sector is divided into seven sub-sectors namely the food crops, horticulture, plantations, animal husbandry, agricultural and hunting services, forestry and logging, and fisheries. Agricultural writing in Table 3 to facilitate the calculation of percentages. The magnitude of the role of sub-sectors to agricultural value-added in Pekalongan Regency in 2013-2017 can be seen in the following table.

Table 3. The Role of Sub Sectors to the Added Value of the Agriculture Sector in the Regency
Pekalongan, 2013-2017 (in percent)

No.	Business Field	2013	2014	2015	2016	2017
1.	Agriculture	93.08	92.83	93.09	92.77	92.21
	a. Food Crops	37.87	33.38	32.60	33.76	34.10
	b. Horticultural Plants	19.43	22.20	23.61	22.29	23.62
	c. Plantation crops	23.55	25.07	25.68	25.53	23.27
	d. Animal Husbandry	16.75	17.05	15.91	16.17	16.74
	e. Agriculture and Hunting Services	2.41	2.29	2.21	2.26	2.27
2.	Forestry and Logging	2.12	2.25	2.17	2.14	2.11
3.	Fishery	4.80	4.92	4.74	5.09	5.68
	Total (1+2+3)	100	100	100	100	100

Source: The Central Statistics Agency of Pekalongan Regency, 2017

Agriculture is a primary sector or an important sector for human life. This is because the agricultural sector is a supplier of food, medicines, and raw materials for the industrial sector, and other sectors (Rahman, 2014). Pekalongan Regency is a strategic region that has a coastal area in the north and a fertile mountain area in the south. Superior products from plantation crops in Pekalongan Regency are tea and coffee. The tea produced in 2017 in the Pekalongan Regency of 1,065.92 tons and 816 tons are produced by Paninggaran District (the Central Statistics Agency of Pekalongan Regency, 2017). While the famous coffee is gibbon coffee from Petungkriyono District.

The agricultural problem in Pekalongan Regency is that agricultural land has also decreased. According to the Central Statistics Agency of Pekalongan Regency (2017), agricultural land decreased in 2017 with an area of 69,545 hectares and in 2018 it became 68,519.8 hectares. While for non-agricultural land increased in 2017 with an area of 14,070 hectares to 15,094.7 hectares in 2018. The purpose of this study is the ability to analyze the classification of growth in the agricultural sub-sector and the contribution of production from the plantation sub-sector in each district in the Pekalongan Regency.

Several previous research supporting this research are: (1) Rivai and Anugerah (2011) that states the sustainable development approach is should be essentially developed by activities between economic, social, and environmental aspects, includes the agricultural sector as the basic one: (2) Ratag et al. (2016) that proposes the commitment of all countries in developing agricultural sector for sustainable development must be obeyed and implemented; (3) Hakim (2010) that concludes that developing countries have the weakest chain in development, namely agriculture, so special attention is needed in its development. The essence of agricultural development is to make farmer's incomes increase, either the farmers who own land or rent it out by feeling an increase that causes income will also increase; Caya (2003) that also concluded that in development it is necessary to have a map of interrelated agriculture field areas in order to monitor the agricultural land use and the need for a lot of investment as a basis for strategic agricultural development plans.

This research is intended for supporting that all previous research which more focused on the performance of each sub-sector in the agriculture field. This research is becoming more important after investigating the fact that the agricultural land in Pekalongan Regency has decreased in 2017 and 2018. Therefore, this poor condition must be controlled and then found the solutions for sustaining agricultural development in this regency.

METHODS
This research is a descriptive study with a quantitative approach. The data used in this research is secondary data. Data collection techniques using the documentation method. The data used in this study are as follows: growth rate and GRDP growth (percentage share between sub-sector roles

multiplied by GRDP to constant prices 2010) Pekalongan Regency and Central Java in 2013-2017 and plantation sub-sector production in each district and total in Pekalongan Regency in 2013-2017 (products found in The Central Statistics Agency).

Klassen Typology

Klassen typology is used to classify regions according to their structure and level of development. The grouping is divided into four groups namely developed, developed but distressed, developing, and left behind regions (Sjafrizal, 2014: 197).

Table 4. Classification of Klassen Typology

	$P_i > P$	$P_i < P$
Ri > r	Quadrant 1 Developed sub-sector	Quadrant 2 Developed sub-sector but distressed
Ri < r	Quadrant 3 Developing sub-sector	Quadrant 4 The sub-sector is relatively left behind

Source: Sjafrizal, 2014:197

R_i = The rate of growth of the agricultural sub-sector in Pekalongan Regency
R = The rate of growth of the agricultural sub-sector in Central Java Province
P_i = Contribution of the agricultural sub-sector to the GRDP of the agricultural sector in Pekalongan Regency
P = Contribution of the agricultural sub-sector to the GRDP of the agricultural sector in Central Java Province

Production Contribution

The contribution of production is used to find out how much production from the plantation sub-sector in all districts in Pekalongan Regency to the total production of the plantation sub-sector in Pekalongan Regency 2013-2017, the following formula is used as follows:

$$\text{Ksi} = \frac{\text{Pk}i}{\text{Pt}i} \text{ x } 100\%$$

Ksi = The contribution of main agricultural sub-sector production in all districts to total production in Pekalongan Regency
Pk*i* = Production of plantation sub-sector *i* per district
Pt*i* = Production of plantation sub-sector *i* total Pekalongan Regency

RESULTS AND DISCUSSIONS
Klassen Typological Analysis

Comparison of growth rate and contribution of Pekalongan Regency to Central Java Province is divided into 4 quadrants. This can be seen in the following table:

Table 5. Results of *Klassen Typology* Analysis of Agriculture Sub-Sector, Pekalongan Regency, 2013-2017

Sub Sectors	Growth rate		Contribution	
	Pekalongan	Central Java	Pekalongan	Central Java
Food Crops	-1,935	-0,864	34,34	39,68
Horticultural Plants	5,706	4,250	22,23	28,75
Plantation crops	0,369	4,377	24,62	10,95
Animal husbandry	0,655	4,070	16,52	18,44
Agriculture and Hunting Services	-0,825	-0,226	2,29	2,18

Sub Sectors	Growth rate		Contribution	
	Pekalongan	Central Java	Pekalongan	Central Java
Forestry and Logging	0,787	-0,879	2,16	3,56
Fishery	5,243	4,738	5,05	6,88

Source: Secondary Data Analysis

Based on Table 5 in quadrant I there are no agricultural sub-sectors in Pekalongan Regency which have a greater growth and contribution rate than Central Java Province. Quadrant II consists of the horticulture plants, forestry and logging, and fisheries sub-sectors which all of them have a greater growth rate, but have a smaller contribution value compared to Central Java Province. Quadrant III is a sub-sector of plantation crops which means it has a smaller growth rate value and has a greater contribution value compared to Central Java Province. Quadrant IV there are sub-sectors of crops, animal husbandry, and agriculture and hunting services which have a smaller growth rate and contribution value than Central Java Province. So, if grouped into four quadrants can be seen in the following Table 6.

Table 6. Grouping Growth in Agriculture Sub Sector in Pekalongan Regency Based on Growth Rate and Contribution to Central Java Province, 2013-2017

Quadrant 1	Quadrant 2
	Horticultural plants
	Forestry and logging
	Fishery
Quadrant 3	**Quadrant 4**
Plantation crops	Food Crops
	Animal husbandry
	Agriculture and Hunting Services

Source: *Klassen Typological* Analysis

Analysis of Production Contribution

Pekalongan Regency has 19 districts. The contribution analysis uses 15 products produced by the plantation sub-sector from the Central Statistics Agency data. Superior products explain the largest percentage of the number of production of certain product in each district. The following results are from the calculation of production contributions.

Table 7. Contribution of Superior Products in Each District in Pekalongan Regency, 2013-2017

No.	District	Product Produced	Superior Product (2nd largest) in District	Superior Products in the Regency
1.	Kandangserang	Coconut, clove, cotton, coffee, tea, cashew, cocoa, sugar palm, vanilla, pepper, arjuno glagah, patchouli.	Patchouli, clove	Patchouli
2.	Paninggaran	Coconut, clove, coffee, tea, sugar palm, vanilla, pepper, arjuno glagah, patchouli	Tea, arjuno glagah	Cloves, coffee, tea, arjuno glagah
3.	Lebakbarang	Coconut, clove, cotton, coffee, tea, cashew, cocoa, sugar palm, vanilla, pepper, arjuno glagah, patchouli	Sugar palm, vanilla	Sugar palm, vanilla
4.	Petungkriyono	Coconut, clove, coffee, tea, sugar palm, patchouli	Sugar palm, tea	

No.	District	Product Produced	Superior Product (2nd largest) in District	Superior Products in the Regency
5.	Talun	Coconut, clove, cotton, coffee, sugar cane, tea, cashew, cocoa, sugar palm, vanilla, pepper, patchouli	Cocoa, vanilla	Cocoa
6.	Doro	Coconut, clove, cotton, coffee, sugar cane, cashew, cocoa, sugar palm, vanilla, pepper, patchouli	Cotton, cashew	Cotton, cashew
7.	Karanganyar	Coconut, clove, cotton, coffee, sugar cane, cashew, vanilla, pepper, patchouli, gambier jasmine	Pepper, gambier jasmine	Pepper, gambier jasmine
8.	Kajen	Coconut, clove, cotton, coffee, sugar cane, cashew, cocoa, vanilla, pepper	Sugar cane, pepper	Coconut, sugar cane
9.	Kesesi	Coconut, clove, cotton, coffee, sugar cane, cashew, cocoa, vanilla, pepper	Cashew, cocoa	
10.	Sragi	Coconut, sugar cane	Coconut, sugar cane	
11.	Siwalan	Coconut, sugar cane, gambier jasmine, white jasmine	Gambier jasmine, white jasmine	
12.	Bojong	Coconut, cotton, coffee, sugar cane, cashew, vanilla	Cotton, sugar cane	
13.	Wonopringgo	Coconut, cotton, coffee, sugar cane, cashew	Sugar cane, cashew	
14.	Kedungwuni	Coconut, cotton, sugar cane, cashew, vanilla	Sugar cane, cashew	
15.	Karangdadap	Coconut, cotton, coffee, sugar cane, cashew, cocoa, vanilla, pepper	Sugar cane, pepper	
16.	Buaran	Coconut, cotton	Coconut, cotton	
17.	Tirto	Coconut, cotton, sugar cane, white jasmine		
18.	Wiradesa	Coconut, cotton, sugar cane	Coconut, sugar cane	
19.	Wonokerto	Coconut, cotton, sugar cane, gambier jasmine, white jasmine	Gambier jasmine, white jasmine	White Jasmine

Source: Secondary Data Analysis

Based on Table 7 each district has a superior product with the largest percentage of other products in the district and the two largest taken. The sub-district which has the largest contribution in Pekalongan Regency is Paninggaran District with four superior products namely cloves, coffee, tea, arjuno glagah.

Growth Classification of Agriculture Sub Sector
Based on the results of Klassen Typology analysis the Pekalongan Regency does not have developed sub-sectors. The developed sub-sector saw from the comparison of the growth rate and contribution of the agricultural sub-sector in the Pekalongan Regency with Central Java Province.

The agriculture sub-sector which developed but depressed sub-sector is the horticulture, forestry and logging, and fisheries sub-sector. This means that the growth rate of the three sub-sectors in Pekalongan Regency is greater than the Central Java Province, but the contribution of the three sub-sectors is smaller than the contribution in the Central Java Province. The agriculture sub-sector which is a developing sub-sector is the plantation crops sub-sector. This means that the plantation crops sub-sector in Pekalongan Regency has a smaller growth rate compared to Central Java Province, and has a greater contribution to the plantation sub-sector than Central Java Province. The agriculture sub-sector is a relatively left behind sub-sector, namely the sub-sector of food crops, animal husbandry, and agricultural and hunting services. This means that the growth rate and contribution of the three sub-sectors to the Pekalongan Regency is smaller than that of Central Java Province. This research is supported by the study of Simamora et al. (2013) which stated that in the study there were no sub-sectors in quadrant I. Thus, not all regions have developed sub-sectors or are located in the Quadrant I.

Production Contribution of Superior Agricultural Sub Sector

Based on the calculation of the contribution of production in the plantation sub-sector that in the District of Kandangserang has superior products, namely patchouli, and cloves. Patchouli in Kandangserang District is the product with the highest contribution in the Pekalongan Regency. Whereas the clove is still under Paninggaran District. So, if the District of Kandangserang wants to develop cloves, it can exchange information with the District of Paninggaran, and vice versa if the District of Paninggaran wants to develop patchouli, it can exchange information with the District of Kandangserang. Paninggaran Subdistrict there are four superior products in the sub-district and district, namely cloves, coffee, tea, and arjuno glagah. Paninggaran Subdistrict is the sub-district that has the most products with the largest contribution and is a sub-district with high potential in the plantation sub-sector in Pekalongan Regency.

Lebakbarang Subdistrict has superior products namely sugar palm and vanilla, both of which are the products having the biggest contribution in the Pekalongan Regency. Petungkriyono sub-district has superior products, namely sugar palm, and tea, both of which are not the largest in thePekalongan Regency. So, if Petungkriyono sub-district wants to develop sugar palm, it can exchange information with Lebakbarang sub-district, and tea with Paninggaran sub-district. Talun District has superior products, namely cocoa, and vanilla. Cocoa products are the products that have the biggest contribution to Pekalongan Regency, and to develop the vanilla they can exchange information with Lebakbarang District. Doro District has superior products namely cotton and cashew, both of which are products that have the biggest contribution in the Pekalongan Regency. The production contribution of the plantation sub-sector in Karanganyar District has superior products, namely pepper, and jasmine gambir, both of which are products that have the largest contribution in the Pekalongan Regency.

Kajen District has superior products namely sugar cane and pepper, in which sugar cane has the biggest contribution in Pekalongan Regency. Kajen Subdistrict also has coconut products with the largest contribution value in Pekalongan Regency, although not the biggest in the sub-district. This is because the value of pepper is greater than coconut even though the coconut in Kajen District is greater than in other districts. If Kajen District wants to develop pepper, it can exchange information with Karanganyar District. Kesesi District has superior products, namely cacao, and cashew. If Kesesi District wants to develop both products, it can exchange information with Talun District for cocoa products, and with Doro District for cashew products. Sragi District has superior products such as sugar cane and coconut because only two of these plantation products are produced in Sragi District. If you want to develop both, you can exchange information with Kajen District. Production contribution of the plantation sub-sector in Siwalan District has superior products, namely gambier jasmine, and white jasmine. If you want to develop these two products, Siwalan District can exchange information with Karanganyar District for gambier jasmine products, and Wonokerto District for white jasmine products. Bojong District has superior products, namely sugar cane and cotton. If Bojong sub-district wants to develop both products, it can exchange information with Doro sub-district for cotton products, and with Kajen sub-district for sugar cane products.

Wonopringgo and Kedungwuni Districts have superior products, namely sugar cane and cashew. If both districts want to develop sugar cane, they can exchange information with Kajen District, and with Doro District for cashew. Karangdadap District has superior products, namely sugar cane and pepper. If you want to develop these two products, you can exchange information with Kajen District for sugar cane, and with Karanganyar District for pepper products. Buaran Subdistrict has superior products, namely coconut, and cotton because only two of these plantation products are produced by Buaran Subdistrict. If you want to develop coconuts, you can exchange information with Kajen District, and cotton with Doro District.

Tirto District and Wiradesa District have the same superior products, namely coconut and sugar cane. If the two sub-districts want to develop coconuts and sugar cane, you can exchange information with Kajen District, which has the largest contribution in Pekalongan Regency for both products. The last sub-district, Wonokerto sub-district, has superior products, namely white jasmine, and gambier jasmine. White jasmine is the biggest contribution in Pekalongan Regency, and if you want to develop gambier jasmine you can exchange information with the Karanganyar District.

The results of these contributions are different from Syahroni (2016) which uses contributions to find out the sector in the formation of GRDP. Whereas in this study to determine production in the formation of sub-sectors. Thus, contributions can be used for various types depending on the objectives of the research

CONCLUSIONS
According to classification of growth of the agricultural sub-sector in the Pekalongan Regency during 2013-2017, there are no sub-sectors which is categorized as "developed sub-sector"; there are three sub-sectors as "developed sub-sector but distressed", i.e. horticultural plants, forestry and logging, and fisheries; there is only one sub-sector as "developing sub-sector", i.e. plantation crops; and there are three sub-sectprs as "left behind sub-sector", i.e. food crops, animal husbandry, and agricultural and hunting services.

Districts that have the largest contribution of plantation crop products in the Pekalongan Regency are Kandangserang District with the contribution of products produced is patchouli. and Paninggaran District with the largest product contribution, namely cloves, coffee, tea, and Arjuno glagah. Lebakbarang District with the largest product contribution, namely sugar palm and vanilla. Talun District with the largest product contribution is cocoa. Doro District with the largest product contribution is cotton and cashew. Karanganyar District with the largest product contribution is pepper and jasmine gambir. Kajen District with the largest product contribution, namely coconut and sugar cane. Wonokerto District with the biggest product contribution is white jasmine.

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