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A Classification Approach to the Growth of the Inter-Regional Agricultural Sector in East Nusa Tenggara Province

ABSTRACT

In terms of gross domestic product and labor absorption, the agriculture sector is the most important in East Nusa Tenggara (NTT) Province's. The study's goal is to figure out how much the agricultural sector is growing and categorise it using Klasen Typology. The data utilized is a time series of agriculture industry growth from 2010 to 2019. The method of data analysis is employed. Klassen Klassifikasi Klassen with a matrix twice that cross-connects the expansion of the agriculture industry and its contribution to gross domestic product throughout East Nusa Tenggara areas. The comparison data is based on data on the development of sectors in Indonesian provinces that were chosen at random. The findings revealed that the agriculture sector in East Nusa Tenggara Province's is reasonably stable, with minor expansion. According to the Klassen Classification, quadrant one consists of four regency's: Ende regency, Kupang City, Lembata regency, and Sabu Raijua regency, all of which have advanced agricultural sectors. In the second quadrant, there are nine regency's with advanced but depressed agricultural growth. There is one regency's in the third quadrant classified as having a rapidly increasing agricultural sector. Six regency's are classified in the fourth quadrant, with the agricultural sector lagging behind. Efforts to enhance the classified sector lag behind the higher agriculture sector, and the government is called upon to help. The function is played by improving the quality of human resources as well as the facilities and infrastructure that enable the agricultural sector's development.

Keywords: *Economic Growth, Developed, Depressed, Developing Areas*

INTRODUCTION

Economic growth is a determinant that serves as a barometer of a certain area's success and reflects the outcomes of that area's development at a given point

in time. The gross national product is used to quantify a country's economic growth, whereas gross regional domestic product is used to measure gross domestic product.

The agricultural sector's expansion gross domestic product is a measure of the agricultural sector's economic growth that is calculated every three months. According to Central Bureau Statistics from 2010 to 2019, the agricultural sector's gross domestic product increased from IDR 13,9 trillion in 2010 to IDR 14,2 trillion in 2011. The value of this gross regional domestic product increased to IDR 14,6 trillion in 2012, and has continued to rise, with the value of gross regional domestic product from the agricultural sector in East Nusa Tenggara Province reaching IDR 18,5 trillion in 2019. The agriculture industry continues to be the mainstay of East Nusa Tenggara Province's economic growth, according to data.

In East Nusa Tenggara Province's, where population growth trends suggest a sustained increase, agricultural development is required to anticipate and absorb population increases. The number of persons aged 15 and over who work according to the major job status (broad meaning agriculture industry) reached 1402054 people, or 51,00 percent of the entire working age population aged 15 and above, according to Central Bureau Statistics data from East Nusa Tenggara Province's (2021). This data demonstrates the agricultural sector's role in absorbing labor.

Natural resources, skilled labor, facilities, and marketplaces, as well as other supporting institutions such as economic institutions, markets, and others, all have a role in an area's economic growth. Using typology analysis, this study attempted to identify the dynamics of agriculture sector economic growth amongst areas. It can be determined which portions of the gross regional domestic product value should be enhanced using this examination. Klassen Typology Analysis is used to determine the agriculture sector's contribution to each gross regional domestic product.

This study uses Klassen Typology to divide the economic growth of the agricultural sector in East Nusa Tenggara Province's is cities and regency's into four categories: developed and fast developing places, developed but slow-growing areas, prospective or still-developable areas, and locations with somewhat trailing growth. It is possible to determine which locations should see an increase in their gross regional domestic product values based on these four classifications.

Several scholars have utilized Klassen Typology analysis in their studies, including Rahayu (2010), who focused on food crops, and Pesernay & Parera (2018), who employed Klassen typology for the superior sector in Ambon City, Maluku Province. Sagajoka (2020) employs Klassen Typology to explain the per capita income data of Ende's Regency. Klassen Typology is especially applied to the contribution of the agricultural sector to the gross regional domestic product in East Nusa Tenggara provincial regency's and cities, which is slightly different from some earlier studies.

RESEARCH METHODS

East Nusa Tenggara Province's gross regional domestic product data from 2010 to 2019, data collection for one month, namely May 2021, was used in this study. The gross regional domestic product data that was used was the gross regional domestic product on a constant-price basis. Klassen Typology Analysis is based on data from the agricultural sector's contribution to gross regional domestic product over a ten-year period. Klassen typology is used to categorize East Nusa Tenggara Province's is regency's and cities based on the rate of expansion and contribution of the agricultural sector, which is limited by the gross regional domestic product. Junaidi (2010) is referred to the Tric Typology Klasen as follows:

Table 1. Typology Klassen has four classifications for dividing regions

Sk \ R	ri > r	ri < r
Ski>SK	Quadrant I: Developed and rapidly expanding areas (*Developed Sector*)	Quadrant II: Areas that are developed but depressed (*Stagnant Sector*)
Ski<SK	Quadrant III Fast-growing territory (*Developing Sector*)	Quadrant IV Areas that are lagging behind (*Undeveloped Sector*)

Information :
r = The benchmark agriculture sector's growth rate (province)
ri = Rate of growth of each regency's /agriculture city's sector
SK = Agricultural Sector Contribution to the Provincial PDRB
Ski = Contribution of the agriculture sector to the PDRB of the regency's and city

RESULTS AND DISCUSSION

East Nusa Tenggara's description

East Nusa Tenggara Province's covers 48718,10 km2 and has a population of 5325566 people (Central Bureau Statistics NTT, 2021). East Nusa Tenggara Province's is made up of 21 regency's and one city, with the South Central Timor (TTS) Regency having the largest population of 467990 people, with 51,43 percent of the population employed in agriculture. According to Central Bureau Statistics figures, East Nusa Tenggara Province's (2021) 57,93 percent of the population attended primary school, which is still a low level of education (did not finish elementary school and never went to school). The number of workers (those aged 15 and up) is 2725955 persons, with 51,43 percent of them employed in the agriculture industry in its broadest sense. According to gross regional domestic product data, the agricultural industry contributed IDR 18,7 trillion or 28,51 percent to East Nusa Tenggara Province's PDRB in constant prices in 2020 (BPS, 2021).

In East Nusa Tenggara Province's, the inter-regional agriculture sector is growing economically

Figure 1 shows the growth rate of East Nusa Tenggara Province's agricultural industry from 2011 to 2019 (with 2010 as the base year). According to the data, the agriculture sector's growth rate has been volatile during the last ten years, peaking in 2017 and then declining in 2019, with an average annual growth rate of 3,27 percent.
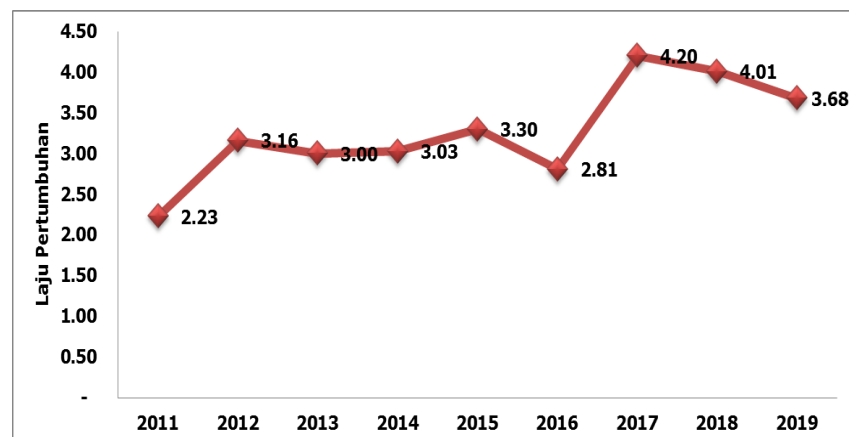
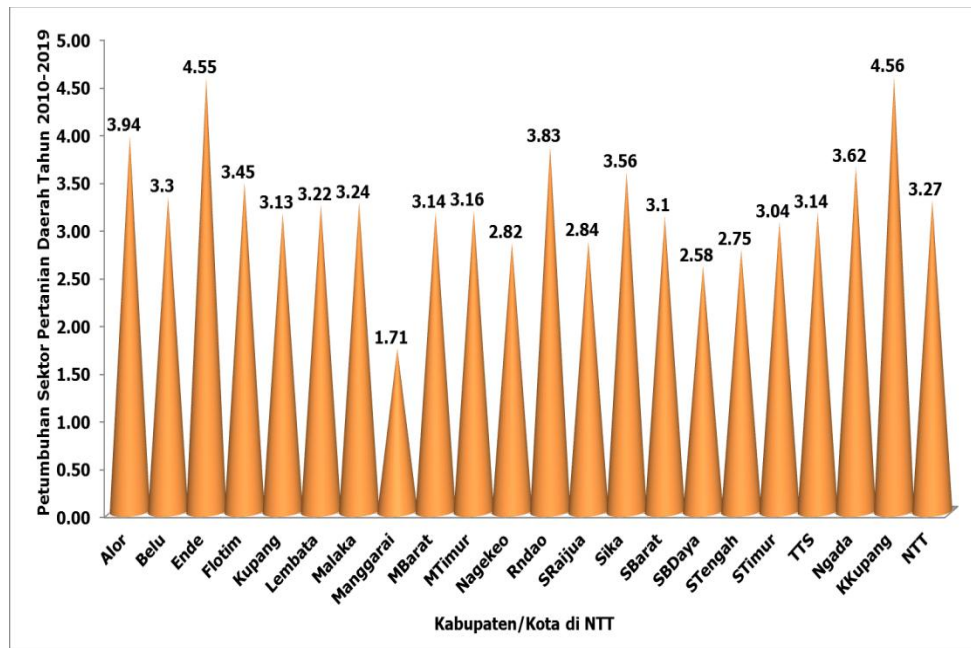**Figure 1: Growth Rate of the Agricultural Sector in NTT 2010 – 2019**

Overall, East Nusa Tenggara Province's agricultural sector developed at a reasonable pace (Table 2), averaging around 3% to 4%.

Table 2. NTT Agricultural Sector Economic Growth Rate 2010-2019

Kabupaten/Tahun	Pertumbuhan ekonomi sektor pertanian Provinsi NTT 2011-2019 (Persen)									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	Rata-Rata
Alor	3,65	4,35	2,85	4,18	4,14	2,85	4,73	4,33	4,35	3,94
Belu	0,73	2,96	3,82	2,42	3,32	3,06	4,87	4,33	4,19	3,30
Ende	3,42	5,00	4,01	4,18	4,30	4,14	5,74	5,67	4,51	4,55
Flores Timur	1,92	3,65	2,88	2,35	3,23	3,28	4,41	5,09	4,28	3,45
Kupang	2,62	2,95	3,31	2,52	3,42	1,27	4,56	4,09	3,45	3,13
Lembata	2,56	2,53	2,76	2,82	3,55	1,95	5,04	3,86	3,87	3,22
Malaka	0,74	2,92	3,98	2,88	3,33	2,75	4,35	4,31	3,88	3,24
Manggarai	0,65	1,63	1,76	1,19	1,70	1,72	2,38	1,75	2,57	1,71
Manggarai Barat	1,56	3,32	3,66	2,82	2,95	2,86	3,01	4,92	3,14	3,14
Manggarai Timur	1,07	3,04	3,17	3,00	3,30	3,27	4,39	3,49	3,73	3,16
Nagekeo	2,56	2,64	2,71	2,89	3,07	2,78	3,85	2,85	2,06	2,82
Rote Ndao	2,59	2,85	2,32	4,37	3,92	4,18	4,87	5,07	4,26	3,83
Sabu Raijua	2,96	3,63	2,08	2,11	1,02	1,85	2,75	4,73	4,44	2,84
Sika	3,01	2,38	2,16	3,47	3,53	3,46	5,22	4,83	4,00	3,56
Sumba Barat	1,91	2,49	2,67	2,75	2,86	3,58	5,44	2,98	3,26	3,10
Sumba Barat Daya	2,18	3,98	4,01	1,82	1,79	1,87	2,78	2,20	2,63	2,58
Sumba Tengah	1,53	1,41	1,92	2,30	3,00	2,84	5,04	3,11	3,61	2,75
Sumba Timur	2,38	2,02	1,83	4,15	3,79	2,87	3,51	3,41	3,42	3,04
TTS	2,29	2,90	2,52	2,88	3,12	2,82	3,99	3,47	4,31	3,14
Ngada	2,46	5,82	3,73	3,87	3,64	3,30	3,03	3,63	3,06	3,62
Kota Kupang	4,01	2,94	4,80	5,45	6,56	3,66	4,43	5,88	3,33	4,56
NTT	2,23	3,16	3,00	3,03	3,30	2,81	4,20	4,01	3,68	3,27

Source : Results of secondary data analysis, 2021

The agriculture sector in East Nusa Tenggara Province's is growing at a slow but steady pace, with no signs of negative growth. Five places with substantial agricultural sector growth are shown in the average growth rate amongst regions in East Nusa Tenggara Province's (Figure 2), including Kupang City, Ende Regency, Alor Regency, Rote Ndao Regency, and Ngada Regency.

**Figure 2: NTT regency's/City Agricultural Sector Average
Growth Rate 2010 - 2019**
Source: Secondary Data, Processed (2021)

From 2010 to 2019, the agricultural sector's contribution to the East Nusa Tenggara Province's gross regional domestic product has been decreasing. In 2010, the agricultural industry contributed 31,85 percent of GDP, compared to 26,66 percent in 2019. As a result, the agricultural sector's contribution to East Nusa Tenggara Province's gross regional domestic product declined by 5,19 percent over a ten-year period. On the one hand, the agriculture sector contributed less, while the industrial sector, which includes construction, transportation and warehousing, information and communication, and financial services and insurance, contributed more.

The fall in the agriculture sector's contribution to the East Nusa Tenggara Province's gross regional domestic product is largely related to the agricultural sector's decreasing labor force. This decrease is assumed to be the result of the agricultural workers transitioning to other industries. Based on data from the previous six years, the agriculture sector has seen a reduction in labor, while other sectors such as processing, building, large commerce and retail, and transportation have seen a rise in manpower. The decline in micro-labor is also due to a decrease in young people's desire to work in the agriculture industry. Furthermore, according

to some of suek's research findings (2018) from his study, the majority of farmers were between the ages of 50 and 70. If this is not taken into account, it is expected that agricultural labor will fall significantly over the next 10-20 years.

The falling contribution of East Nusa Tenggara Province's agricultural sector can be addressed in a number of ways, including by focusing on the most productive agricultural sub-sector in each East Nusa Tenggara Province's. Food crops and livestock are two sub-sectors with substantial production in practically every location. As a result, stimulating the expansion of both sub-sectors can be accomplished through the use of superior seeds and livestock seedlings, as well as the timely and cost-effective availability of production inputs. Furthermore, counseling or aid in the marketing of outcomes and the dissemination of market information to farmers is required. Increasing fertilizer subsidies to smallholder farmers with low production costs, as well as providing low-cost loans and feed technology, can help both sub-sectors flourish (Susanto, 2009).

Based on constant price GDP, East Nusa Tenggara Province's per capita income increased by IDR 3400109 from IDR 9316791 in 2010 to IDR 12716901 in 2019. In 2019, the national per capita income was IDR 40843190. The per capita income of East Nusa Tenggara Province's was only 31,14 percent of the national average.

Based on Classtipology, East Nusa Tenggara Provincial Regencies are grouped

Klassen's Typology approach assumes that if a regency's area is being compared, the comparison should be based on a larger region or higher level, such as the province. Regency's and cities in East Nusa Tenggara Province's are divided into four quadrants based on average growth in the land sector and average contribution of income from the chain sector.

According to the results of the Class Classification shown in Table 2, quadrant I (first) suggests that the agricultural sector is advanced and increasing rapidly. There are four regency's in this kudran: Ende Regency, Kupang City, Lembata Regency, and Sabu Raijua Regency. This classification reveals that places with an average agricultural development rate and Ende Regency are categorized in the first

quadrant, indicating that the agricultural sector's growth outcomes and contribution are higher than the reference area.

Table 3. In NTT, regency's / cities are grouped based on the typology of the class

Ri Ski	ri>r	ri<r
Ski>SK	Ende Regency, Kupang City, Lembata Regency, and Sabu Raijua Regency	East Flores Regency, Malacca Regency, West Manggarai Regency, East Manggarai Regency, Rote Ndao Regency, Sikka Regency, Southwest Sumba Regency, East Sumba Regency, TTS Regency, and Ngada Regency.
Ski<SK	West Sumba Regency	Alor Regency, Belu Regency, Manggarai Regency, Nagekeo Regency, Central Sumba Regency, and Kupang city

Source: Secondary data analysis results, 2021
Information:
r = The reference region's agricultural sector's growth rate
ri = Agricultural Sector Analysis Area Growth Rate
SK = Contribution of the value of the reference region's agricultural sector
Ski = Contribution to the value of the analysis area's agriculture sector

The agriculture industry in Ende Regency has grown at a rate of 5,47 percent faster than the reference area (Banten Province, with an average of 5,09 percent). Similarly, the agricultural sector contributed 0,66 percent more to the East Nusa Tenggara Province's agricultural sector than the reference area, which only contributed 0,41 percent.

The provincial capital is aware of the performance of agricultural products from Ende regency. Various vegetable horticultural crops are traded between islands and towns. At a price of IDR 50000 per kg, Naibosi yam type (yam that is different from yam / cassava tuber structure is soft) was sold to provincial cities. Furthermore, the Ende Regency has a high output of coconut, hazelnut, and coffee crops, as well as a strong fisheries and marine sector. Rice, corn, horticultural crops, and livestock sub-sectors like as cattle, pigs, and poultry are all strongholds in Kupang Regency. In the sub-sector of coconut, cashew, vanilla, horticulture such as bananas and mangoes, as well as fisheries and marine products, Lembata Regency has an edge.

In the fisheries and marine sectors, Sabu Raijua Regency specializes in the Seaweed and Salt, pig and goat farming sub-sectors, and Lontar forestry sub-

sectors. Products from lontar leads are also well-known in the regional capital, particularly meth sugar, which sells for roughly IDR 100000 to IDR 150000 per liter. The development of the salt industry using Geo-membrane technology on a 106 hectare production area, with annual salt production of 38,160 tons. This salt production could help meet the country's salt requirements. In addition to absorbing 848 local laborers who were paid according to Regional Minimum Wage (UMR) and the distribution of earnings of 5 percent to landowners, the profit from salt reached IDR 441 million per year. Other economic activities such as transportation and the services of salt transport personnel at the manufacturing site and at the port have also increased (Wiendiyati *et al*, 2018).

The classification of regency that fall into quadrant two is a quadrant with a smaller agricultural sector growth rate than the reference area, but a higher agricultural sector contribution to the gross regional domestic product. This typological classification identifies places where the agriculture industry is progressing but growth has slowed or plateaued. East Flores, Malacca, West Manggarai, East Manggarai, Rote Ndao, Sikka, Southwest Sumba, East Sumba, TTS, and Ngada Regency are located in quadrant two.

Regency of East Flores Plantation sub-sectors such as coconut, clove, and chocolate products, for example, saw a growth in output from 2010 to 2019, despite a reduction in horticulture plant kinds. The power, gas, and water sectors or fields of business all saw an increase. The production of vegetable-type horticultural sub-sectors decreased in Rote Ndao Regency, but increased in the types of fruits, types of biopharmaceutical crops, sub-sectors of food crops, and non-agriculture sectors such as accommodation, power, water, and tourism.

Quadrant III (third) regency are quadrants where the agricultural sector is rapidly developing, despite the fact that their contribution is smaller than the reference region. This situation demonstrates that the agricultural sector may progress and accelerate. The West Sumba Regency is the only regency covered in this classification. Agricultural circumstances in West Sumba Regency showed that the agricultural sector's performance decreased in the horticulture and pharmaceuticals subsectors, but increased in the sub-contrbusion. sector's. Similarly, certain species of cattle in the livestock sub-sector suffered population

declines, while other livestock types saw increases. In contrast to the two previous sub-sectors, fishing in the marine and fisheries sub-sectors is on the rise, with growth in the non-agricultural sector, tourism, lodging and drinking, and financial services and insurance.

Regency's classified in quadrant IV (fourth) are quadrants that classify areas that are trailing behind in terms of agriculture sector growth and contribution. This signifies that the agriculture sector's growth rate and contribution are both lower than the reference area. Alor Regency, Belu Regency, Manggarai Regency, Nagekeo Regency, Central Sumba Regency, and Kupang City are among the Regency's that fall into this group. Kupang City had a strong agricultural industry in the past, but due to the rapid development of other industries, the agricultural sector's contribution is dwindling. Construction, processing, transportation, and communication, as well as educational services, rental services, financial services, and other services, have all shown significant development. This can be understood considering that the city of Kupang is a provincial capital whose city began to develop into an advanced urban, then the agricultural sector began to be displaced and replaced with other sectors that tend to be more competent as indicated above. The agriculture sector's contribution to GDP is relatively minor in aggregate, despite the fact that its growth is always positive.

Alor Regency has experienced rapid expansion in the agricultural sector, however it is classified as quadrant four since livestock productivity has not been optimized, resulting in a superior product. The productivity of food crops and plantations is still lower than that of East Nusa Tenggara Province's and significantly lower than national productivity, and the fisheries sector is still dominated by small-scale fishermen without boats. According to the findings of the study (LP2M UNDANA Research Team, 2019), there were 365 RTP in Alor Regency, whereas traditional capture attempts with boats without motorcycles yielded 1,269 RTP. In contrast, there was a minor growth in the horticultural sub-sector, as well as the electricity procurement industry, financial services, and insurance.

Horticulture, biopharmaceuticals, plantations, and decorative plants are among the agricultural sub-sectors that have declined in Belu Regency. Non-

agricultural sectors such as energy procurement, water procurement, tourism, and transportation all saw a boost.

In Manggarai Regency, the agricultural industry has shrunk, particularly in the horticulture sub-sector and plantations, although biopharmaceutical crops have expanded slightly. There was also a decrease in certain livestock in the livestock sub-sector, while there was a minor gain in other types of cattle. Non-agricultural sectors such as electricity procurement, tourism, transportation, communication, and financial services and insurance all saw a significant boost. The findings of this research are consistent with those of a study (Wicaksono, 2010), which notes that while some regency have strong economic growth rates, places designated as lagging, such as Banyumas, Banjarmasin, Jepara, Kebumen, Pekalongan, and Grobogan, are included in quadrant four.

CONCLUSION

The agricultural sector's economic growth in East Nusa Tenggara Province's fluctuated slightly between 2010 and 2019, but remained stable at a rate of 3 percent to 4 percent. Using the Klassen typology with a regional approach, regency or cities in East Nusa Tenggara Province's tended to fall into the advanced but depressed group from 2010 to 2019. Ende Regency, Kupang City, Lembata Regency, and Sabu Raijua Regency, specifically areas with advanced agricultural sectors, are located in quadrant one. There are nine regency in the second quadrant classification with advanced but depressed agricultural growth. East Flores Regency, Malacca Regency, West Manggarai Regency, East Manggarai Regency, Rote Ndao Regency, Sikka Regency, Southwest Sumba Regency, East Sumba Regency, TTS Regency, and Ngada Regency are the regency's involved.

There is only one regency in the third quadrant categorization, West Sumba Regency, which has a rapidly increasing agricultural sector. There are six regency's in the fourth quadrant classification: Alor Regency, Belu Regency, Manggarai Regency, Nagekeo Regency, Central Sumba Regency, and Kupang City, with agricultural areas left behind. According to the conclusion, the increase in the classified sector is trailing behind the higher agriculture sector, implying that the

government's intervention is required. This role is played by boosting the quality of human resources and improving/purchasing facilities and infrastructure that support the agricultural sector's development.

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