

Development of Agropolitan Area in Papua Province, Indonesia (Districts of Muara Tami, Arso, and Skanto)

**Yannice Luma Marnala Sitorus*, Normalia Ode Yanthy and
Anggia Riani Nurmaningtyas**

*Urban and Regional Planning Study Programme (PWK), Jayapura, Papua 99351, Indonesia
Universitas Sains dan Teknologi Jayapura (USTJ), Padang Bulan, Jayapura, Papua 99351, Indonesia*

ABSTRACT

The region of Papua is relatively isolated due to the limitation of transportation infrastructure and the high cost of transportation there, either going to or from the area even for within the area of Papua itself and the number of cities there. Besides that, farmers originally from Papua generally are still living in subsistent life culture. This study aims to describe the conditions of agropolitan area development in the city of Jayapura, the one of agropolitan areas in Papua, and its surrounding area after the program has been running since 2002. The result of study showed that there had not been a regulation on agropolitan area development in provincial level while the agropolitan area in the area of study covered various districts in the city and regency. In general, agropolitan area in the city of Jayapura and the surrounding area had not developed significantly, as seen, among others, from the agribusiness link there, which was still short, the downstream agribusiness subsystem infrastructure was still quite limited, farmers' capacity was still low with a level of dependency on the government which was still high.

Keywords: Agribusiness system, agropolitan

ARTICLE INFO

Article history:

Received: 19 March 2017

Accepted: 15 August 2019

Published: 18 December 2019

E-mail addresses:

nala_ustj2006@yahoo.co.id (Yannice Luma Marnala Sitorus)

normaliaodeyanthy@yahoo.com (Normalia Ode Yanthy)

anggiahermawan@yahoo.com (Anggia Riani Nurmaningtyas)

* Corresponding author

INTRODUCTION

The concept of agropolitan as area development strategy in urban area of Jayapura and its surrounding, especially districts of Arso and Skanto in Keerom Regency, has not run adequately, marked by, among others, the decrease in agricultural sector contribution toward Gross Regional Domestic Product (GRDP) of the city of Jayapura and Keerom Regency, within the

the last five years. Theoretically, in the development of an agropolitan area, its ideal result can only be seen after 25 years, with the initial challenge according to the government of changing the agricultural society culture from cultivation into agroindustrial culture, to process agricultural produce to have added value (Department of Public Works, 2007). However, the challenge in Papua is even greater since it has to deal with the culture of the farmers originally from Papua who live with a tendency of being subsistent. Besides that, it has to also be considered that agropolitan areas in Java developed also because of the influence of the developments of cities there which are their market and the number of the cities is quite significant. This condition is not found in Papua. The development of cities there is still low besides the number which is also still small. Besides that, there is a limitation on transportation infrastructure between areas which causes the high cost of transportation in Papua. If the development of positive agriculture alone cannot be reached until now after the concept of agropolitan started to be implemented in 2002, is it possible that the agropolitan area in Papua be able to reach its ideal condition after 25 years? This study aims to describe the conditions of agropolitan area development in the city of Jayapura, the one of agropolitan areas in Papua, and its surrounding area after the program has been running for 14 years.

MATERIAL AND METHODS

This research describes on 3 aspects : (1) agricultural sector development policy, and (2) development of agricultural area (agribusiness subsystem infrastructure, agribusiness link, and activities of farmers), (3) impact of agricultural sector development.

The research location are the city of Jayapura, especially district of Muara Tami, and its surrounding area, namely districts of Arso and Skanto in Keerom Regency. The city of Jayapura and Keerom Regency have advantages in terms of their geographic condition due to their locations which are next to each other and also each area has been connected by on land road network. Consequently, it is appropriate if these areas are then developed into one of agropolitan areas in the province of Papua.

This study used qualitative and quantitative approaches with descriptive methods in analyzing the result. The data for this study was acquired from the other studies/literatures, Central Bureau of Statistics Indonesia, and the present survey. Information on Keerom was obtained through the present survey while information in the city of Jayapura was getting from the other study. The primary data was obtained by observation and semi-structured interviews. Interviews with several speakers (local authorities) were obtained to get the preliminary information. Then interviews with the farmers were obtained to get the further explanation of the phenomenon that occurred there. The interview was stopped after obtaining the repeated answers from

respondents. The number of respondents was 31 farmers in Arso District, that were sampled, and taken randomly.

RESULTS AND DISCUSSIONS

Agricultural Sector Development Policy

The masterplan for the development of an agropolitan area in Indonesia is prepared for long-term (25 years), medium (5 years), and short (1 year) programs. Short-term programs have between 1-3 years of pioneering and stimulant time (Department of Public Works, 2007). Financing the development of agropolitan areas requires large funds and multiyears. Central government support is stimulant and adapted to the level of regional development, which is carried out for three consecutive years, to be further developed independently by the local government and the community (Department of Public Works, 2007, p.4). There are three stages of economic development in agropolitan area, those are (Department of Public Works, 2007): (1). Agriculture supported by upstream industry aimed at food self-sufficiency (short and medium term); (2). Agricultural supported agro-industry aims to increase income (medium and long term); (3).Advanced industrial agriculture aims to improve welfare (long term).Regions developed into agropolitan are national, regional (inter-provincial), and local, depending on the marketing area.

Evaluation on the development of an agropolitan area is not only seen from the growth of agricultural production but the most important is the empowerment of the community. The indicators of

farmers empowerment can be seen from the following points (Department of Public Works, 2012):

- (a) As many as 80% of farmers' institutions are able to develop market-oriented and environment-oriented businesses.
- (b) The business network of farmers / farmer groups is shaped and active.
- (c) Each village and district in the agropolitan area develops a participatory and jointly agreed annual program to be implemented.
- (d) Long Term Activity Plan and Detail Engineering Design results for physical execution of infrastructure and facilities in agropolitan area are jointly agreed to be implemented and 70% can be implemented in agropolitan area.

As with other areas in Indonesia, development of agricultural area in Papua is also not separated from green revolution program implemented by the central government. However, green revolution with efforts in crop intensification was introduced in Papua initiated with the opening of settlement areas for transmigrants. In 1982, when the city of Jayapura and Keerom Regency were still part of Jayapura Regency, District of Muara Tami (presently in the administrative area of the city of Jayapura), Districts of Arso and Skanto (presently part of administrative area of Keerom Regency), were appointed by the central government as area of Transmigration Settlement Unit in Papua (at the time was known by the name Province of Irian Jaya) which then

received transmigrant residents among others from the island of Java. Besides settler groups in the area, transmigrants who were natives of Papua, among others from Jayawijaya, Paniai, and Arso were also accommodated. However, they were not able to adopt modern agricultural technology thus farmers originally from Jayawijaya and Paniai returned to the old pattern of farming from their place of origin, while farmers originally from Arso returned to their subsistent life pattern, which was to combine forest and hunting produce (Fatem, 2002). In the same year, PTPN II Tanjung Morawa (state-owned enterprise in agribusiness) opened its work area in Keerom and started to plant palm trees followed by growth of Community Core Plantation in Arso and Skanto as well as its processing manufacture in Arso VII (District of Arso). Both district areas then developed first into settlement areas then also as agricultural product central areas in Keerom Regency.

The government of Papua Province appointed irrigation area in the district of Muara Tami, it is known as Koya Irrigation Area. The development planning started to be conducted in the budgeting years of 1992/1993 and 1997/1998, supporting agricultural program with an area of 5000 Ha.

In 2002, the central government (the minister of Public Works and the minister of Agriculture) started to introduce the concept of agropolitan development in Indonesia. Not all rural areas got support in its agropolitan area development, only a certain

number of areas were developed to become model areas. Muara Tami District in the city of Jayapura is one of the areas included in the strategic plan of the Department of Public Works. This department has a role in development of physical infrastructure in supporting agricultural activity such as: roads and irrigation network. Keerom Regency was not appointed as an area to obtain support from the center in its development of agricultural area. However, agropolitan area development policy is only found in the level of the city of Jayapura while policy in provincial level, which regulates agropolitan area in urban area of Jayapura and its surrounding area, has not been explicitly stated.

Development of Agricultural Area

Spatial area of Arso and Skanto Districts, Keerom Regency, which consists of 25 villages, based on the characteristics of each area, compared to the characteristics of area spatial function distribution according to Agropolitan concept, is divided into several spatial functions as follows:

- (a) Area of Order 3 (Center for Agricultural Area Unit) in Muara Tami District covering Village of East Koya and West Koya. Only these two villages which have received the irrigation service thus agricultural activity higher than in the other villages (Sitorus et al., 2015, p.28).
- (b) Area of Order 3 in Arso District consists of Village of Yanaman (UPT PIR I), Yamta (UPT PIR II),

Bagia (UPT PIR III), Sanggaria (UPT Arso I), Yuwanain (UPT Arso II), Yamua (UPT Arso I), Warbo (UPT Arso VII), Dukwia (UPT Arso VIII), Yaturaharja (UPT Arso X), and Ifia-Fia (UPT Arso XI).

The villages have been appointed as transmigration settlement areas with a relatively higher agricultural activities than in the other villages.

- (c) Area of Order 3 in Skanto District covers Village of Jaifuri (UPT Arso III), Arsopura (UPT Arso IV), Wiyantri (UPT Arso V), Intaimilyan (UPT Arso IX), Traimilyan (UPT Arso XII), Naramben (UPT Arso XIII), and Wulukubun (UPT Arso XIV). These villages have been appointed as transmigration settlement area with relatively higher agricultural activities than the other villages.
- (d) Area of Order 2 (Main Village/ Agropolitan Center) in Muara Tami District is Village of West Koya and in Arso and Skanto Districts is Village of Arso Kota.
- (e) Area of Order 1 (Center of Agropolitan Area/Agropolis) is District of Abepura, specifically Youtefa Market. It is a regional scale market whose service area reach does not only cater the people in the city of Jayapura, but also caters for the people from the surrounding regencies (Keerom Regency and Jayapura Regency). The distance of order 1 area to order

3 area in Muara Tami District is quite near, i.e. approximately 18,6 km meanwhile the distance of order 1 area with quite far order 3 area in Arso and Skanto Districts, i.e. approximately 45 km.

Prime agricultural commodities from Muara Tami District are rice, 2nd crops, vegetables, fruit and stock farm produce while from districts of Arso and Skanto are crops, horticulture (spices, vegetables, oranges, bananas, and pineapples), and plantation (cacao, areca nut, and coconut). There have not been many urban areas around the city of Jayapura and this city is the main city in the Province of Papua with the highest number of populations. The city of Jayapura is the main marketing area of agricultural produce from the districts of Muara Tami, Arso and Skanto.

The average agricultural subsystem in the study location does not have complete facilities yet, especially downstream agribusiness subsystem which has very limited facilities. Visually, housing condition in the districts of Muara Tami, Arso and Skanto is still much different if compared to the housing condition in urban area. The level of services of several basic facilities to support the life of the people in Muara Tami, Arso and Skanto, still needs to be increased, among others, road network, clean water network and waste management. The majority of respondents in Arso stated that clean water service there was quite satisfactory (68,6%) even though actually there was no clean water network service

yet. This is made possible due to the existence of a number of rivers or water springs found there.

The existing irrigation network in Koya, Muara Tami District, still functions and there is an irrigation rehabilitation program from related agency. But the area of rice fields there began to decrease. Land of 5000 hectare served by technical irrigation network is only 4000 hectare left due to the presence of the land use change (Papua River Area Office, n.d, p.6). Change in land use of rice fields among others into fishing recreation ponds is to meet the recreation demand of the residents of the city of Jayapura. A fairly close distance between the 1st area which is an urban area with West Koya Village also influences the change of function of agricultural land there (ideally within 35-60 Km). The policy of Jayapura City Government currently prepares the Muara Tami area as a new settlement area due to the rapid development of Jayapura City.

In Keerom reGENCY, technical irrigation network built by the Department of Public Works was only available in UPT Arso V (Skanto District) while traditional irrigation network that utilizes water resource from rivers there could be found in UPT Arso I, VII, VIII, X (Arso), and IV (Skanto). In general, the condition of irrigation network is quite adequate. Development of agropolitan area development supporting infrastructure there is emphasized more on farming business subsystem (such as irrigation network, inspection roads).

Agribusiness Sub Terminal in West Koya Village does not function because generally buyers directly buy from farmers and carry them directly to the city or farmers transport their produce directly to Youtefa Market. Aividjan Terminal in Arso has not functioned optimally because generally wholesalers directly buy to farmers and transport them directly to the city. The condition of road network is relatively adequate but public transportation facility is still limited. More of the local people rely on their own transportation such as motorcycle or going on foot. The majority of respondents in Arso District stated that the level of transportation service there is unsatisfactory (68.57 %). The far distance between order 1 and order 3 areas and the high cost of the transportation cause the difficulty in flow of commodity and people from order 3 to order 1 area thus causing them to rely on wholesalers in the marketing of their harvest.

The previous study shows that the majority of farmers (46.91%) in Muara Tami District sell their harvest produce to buyers that come to the area, approximately 38.27% of farmers sell their harvest produce themselves to the market, and 14.81% of farmers sell to wholesalers in the market. Approximately 84% of farmers in the district of Muara Tami directly sell their harvest produce without prior special treatment and only 1.45% of farmers process or package first, others are distributed through business units and for own consumption (Sitorus et al., 2015). Survey results show the majority of farmer respondents (81%) in Arso District

sell their harvest to wholesalers who come to their place, approximately 13% of farmers sell their own harvest themselves to the local markets (Arso), and 6% of farmers sell to wholesalers also in the local markets. Almost all farmer respondents in Arso directly sell their harvest without special processing beforehand, except for cacao farmers, who clean the skin of cacao fruit to obtain the seeds then dried to decrease the water content, because the lower the water content, the higher the selling price. As a consequence of lack of further processing business, thus when harvest is abundant, such as oranges and bananas, farmers leave them to go bad.

Besides the potential for crops, Muara Tami District also has fishery potential, especially freshwater fishery. Cultivation ponds of freshwater fish can be found in West Koya and East Koya with the main water source from Tami Dam irrigation channel. Besides being marketed directly, a number of processing business has started to grow in West Koya and East Koya, in the form of ponds for fishing as well as functioning as eating place, some are even equipped with accommodation facilities. These fishing recreation ponds are visited by many tourists from the surrounding area (other districts in the city of Jayapura) on holidays (Sitorus et al., 2015).

Unlike in Muara Tami District, agricultural activity in Keerom Regency, such as the one seen in the districts of Arso and Skanto, has oriented on plants of agro industry with the aim of marketing outside

of the area (export), that is among others with the presence of palm tree and cacao plantations. Yields of farms which become prime commodity are cacao, areca nut and coconut. Cacao has market in and out of the country while demand for areca nut and coconut from the surrounding regency area is still high (Turua, 2014). The appeal of palm trees for farmers has decreased as a result of problems in palm tree processing plant there, thus, the markets are also affected. Palm tree farmers experienced a loss due to the inability to accommodate their harvest (Rumbarar, 2016).

Economic activity in Muara Tami District developed more than in the districts of Arso and Skanto. This is caused by closeness in distance of Muara Tami District with main farming city (order 1) or Youtefa Market, also because the people are more creative in creating business of agrotourism (fishing ponds equipped with restaurant facility even accommodation facility) as well as business of harvest processing even though it is still in a small scale. Small shops selling harvest, either raw or processed, for instance boiled corn, cassava crackers, tempe crackers, and yam crackers, can be seen along the main road in Muara Tami District. This sight cannot yet be seen in the districts of Arso and Skanto. This shows that economic activities in agropolitan area of order 3 depends on cash and human flow from area of order 1 but this flow may not take place if there is no interesting activity for them in area of order 3 (Sitorus et al., 2015).

There are many farmers organizations in these districts but the ones that are active are only a few, such as in Arso, there are only 16 farmers groups which are active. These societies are generally established according to ethnic groups or communities that routinely conduct meetings in the form of reciting the Qur'an or monthly social gathering. The understanding that these groups were established for the purpose of cooperation with other parties for instance in terms of getting aid and information from the government or assignment from the management of palm tree plantation, not because of their own intention in increasing their own welfare, causing their capacity to lack growth. Initiative and creativity of farmers still rely on efforts conducted by the government while information providers themselves have limitation due to minimum operational cost provided by the local government (Turua, 2014).

Villagers are already involved in each development plan in village each year, but their participation is generally at tokenism plaction level (involving community representatives in the development program but the decision remains in the hands of the government) according to the Arnstein participation ladder (Arnstein, 1969). Due to the limited knowledge shows that the majority of farmer respondents in Arso (51.43%) have an education level of elementary school), their participation rate is not yet optimal (Survey, 2016).

Impact of Agricultural Sector Development

Farmers are provided with new housing and technical irrigation network so that they can plant the main commodities among others rice in accordance to the central government's guidance at the time. Then the central government also implemented a developmental policy in agricultural sector oriented at industry (agroindustry) by opening up plots of plantation area, such as palm tree, coffee, and cacao plantations. Farmers in mountainous area of Papua are encouraged to cultivate coffee plants while farmers in Keerom and Jayapura Regencies are encouraged to cultivate cacao. The developmental approach is generally *top down* and technocratic. Such developmental program also increases the income of the farmers but still cannot empower them. This can be seen from various stories as follows.

At the beginning of development in Papua, in order to fulfill the primary food of the people, the government brought in or imported rice from outside of the area. Consequently, there has been a change in food consumption pattern on the indigenous people of Papua, which was initially benefited from sago as the main source of carbohydrate, into rice. The other study shows that by the introduction of rice to the people of Sentani, Jayapura Regency, the function of sago as a source of daily staple started to be replaced (Yeny & Alhamid, 2005). This had an impact on the development of population of sago forest there which is a native plant of Papua. The decrease in sago forest while the suitable

land for paddy fields was still limited causing huge dependency of the people of Papua on areas of source of producers outside of their area.

Farmers in Papua become quite dependent on government's policy thus making them unable to adapt easily when there is a problem or when there is a market change. For example, problems in palm tree processing plant in Arso caused palm tree market disturbance causing lost to farmers because of inability to promptly sell their harvest. Many are affected by its impacts for relying their income on the commodity and hoping on government's interference to handle the problems at the plant (Rumbarar, 2016). It is necessary to increase agricultural information especially in terms of plant diversification, innovation in processing harvest and its marketing. Timer (as cited in Adnyana, 2006) stated that it is necessary to have a dynamic agricultural system, depending on commodity diversification which has a market prospect which is more profitable by integrating variety of fruit, variety of vegetables, and livestock. This establishment requires farmers to survive even if there are problems to the market of one of their commodities grown by relying on other commodities.

The potentials of Papua in agricultural sector are quite significant considering the large area that can be used and from that much of it has a status of communally held which means that ownership as well as management is handled by the indigenous people of Papua. However, farmers originally from Papua who are in the

districts of Muara Tami, Arso, and Skanto generally have a level of income which is relatively lower than farmers from outside the area even though they have larger plots of land. Turua stated that behavior and culture of the natives of Keerom Regency tended to have subsistent attitude which has made them not be able to develop like other farmers who come from other places. Turua also stated that the farmers originally from Papua but came from farmers originally from Papua from the area because they were more productive in their work (Turua, 2014).

Developmental approach with the characteristics of *top down* and technocratic is also sometimes not to the point as seen among others on the lack of function of terminal facilities built by the government, for examples Agribusiness Sub Terminal in Village of West Koya, Muara Tami District, and Aividjan Terminal in Arso District. This facility should be built on the local market location that had been existed.

CONCLUSIONS

The agropolitan area in the city of Jayapura and the surrounding area has not developed significantly, as seen, among others, from the agribusiness link there, which is still short, the downstream agribusiness subsystem infrastructure is still quite limited, farmers' capacity is still low with a level of dependency on the government which is still high. Since it was declared an agropolitan area in 2002, after 14 years ago, the city of Jayapura is still at the stage of food self-sufficiency. GRDP growth rate in

the agriculture sector has been positive but has not been able to encourage the growth of agro-industry activity. It is expected that ideal conditions will not be achieved with the remaining program's time (11 years) especially if there is no special attention from the central and regional governments on the limited conditions in Papua.

This pioneering and stimulant development program is less appropriate when applied to relatively isolated areas with few growth centers (urban areas), such as Papua Province. The local government and the community have not been able to independently develop an agropolitan area if inter-regional infrastructure is not yet established and the marketing area is still limited. The development of regional infrastructure facilities, which requires substantial funds in their development, will depend heavily on development programs from the central government.

ACKNOWLEDGEMENTS

The authors have financial aid from Indonesian Government (Ministry of Research, Technology, and Higher Education), such as a research grant, in doing this research.

REFERENCES

- Adnyana, M. O. (2006). *Lintasan dan marka jalan menuju ketahanan pangan terlanjutkan dalam era perdagangan bebas* [Tracks and road markings leading to food security continue in the era of free trade]. In J. Sutanto (Ed.), *Revitalisasi pertanian dan dialog peradaban* [Revitalizing agriculture and civilizing dialogue] (pp. 109-146). Jakarta, Indonesia: Kompas.
- Arnstein, S. R. (1969). A ladder of citizen participation. *Journal of the American Planning Association*, 35(4), 216-224.
- Department of Public Works. (2007). Agropolitan era baru pembangunan wilayah berbasis pertanian [Agropolitan a new era of agricultural-based regional development]. *Buletin Cipta Karya, Departemen Pekerjaan Umum*, 5(6), 2-4.
- Department of Public Works. (2012). *Agropolitan era baru pembangunan wilayah berbasis pertanian* [Agropolitan and minapolitan, the regional concept towards harmony]. Jakarta, Indonesia: Departemen Pekerjaan Umum.
- Fatem, A. (2002). *Studi peningkatan taraf hidup transmigrasi lokal asli Papua di wilayah transmigrasi Arso Kabupaten daerah tingkat II Jayapura* [Study on improving the standard of living on indigenous Papuan transmigrants in the Arso transmigration area II Jayapura Regency] (Master's thesis). Bandung, Indonesia: Institut Teknologi Bandung.
- Papua River Area Office. (n.d.). *Profil daerah irigasi Koya* [Profile of the Koya irrigation area]. Jakarta, Indonesia: Balai Wilayah Sungai Papua, Dirjen SDA Kementrian PU.
- Rumbarar, H. (2016, June 7). Problematika perkebunan sawit di Keerom [Problems with oil palm plantations in Keero]. *Jerat Papua*. Retrieved July 10, 2016, from <http://>
- Sitorus, Y. L. M., Yanthy, N. O., & Nurmaningtyas, A. R. (2015). *Perkembangan kawasan agropolitan di Papua (Studi kasus: Kawasan agropolitan kota Jayapura* [Development of the agropolitan area in Papua (Case study: Jayapura city agropolitan area)]. Jayapura, Indonesia : LP2M USTJ.
- Turua, U. (2014). *Model pengembangan kapasitas ekonomi petani asli papua dalam pengembangan wilayah di Kabupaten Keerom* [Model of economic capacity development of indigenous Papuan farmers in regional development in

- Keerom Regency] (Doctoral dissertation). Bogor, Indonesia: Institut Pertanian Bogor. Retrieved January 13, 2016, from <http://repository.ipb.ac.id/handle/123456789/70096>
- Yeny, I. & Alhamid, H. (2005). *Struktur sosial budaya masyarakat Dafonsoro: Sebuah tinjauan budaya dalam pengelolaan sumberdaya alam di sekitar Danau Sentani* [Socio-cultural structure of the Dafonsoro community: An overview of culture in natural resource management around Lake Sentani]. Retrieved May 9, 2016, from http://puspijak.org/uploads/info/korektor2_struktur_budaya_sentani.

