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Agricultural conversion phenomenon to non-agricultural land in Tasikmalaya City

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This study aims to determine the phenomenon of land conversion and the factors that affect the conversion of agricultural land to non-agricultural in Tasikmalaya City. Land conversion is a common phenomenon along with urban land dynamics. The research method used was a descriptive method, with an observation data collection technique, documentation study, and literature study. The result of the research showed that (1) the phenomenon of conversion of agricultural land to non-agriculture could be seen from the agricultural land area converted to non-agriculture; and (2) the factors that influenced the conversion of agricultural land to non-agriculture were population growth causing increased economic need, as well as government policy factors in the development of regional infrastructure.

Key words: *Agriculture, Land Conversion, Urban Land Dynamics*

Introduction

Development closely related to land conversion in urban areas continues to increase over time as development expands, followed by population growth (Tarigan & Robinson, 2010; Yunus & Sabari, 2008). This condition leads to the conversion of high land from agricultural land or plantation to non-agricultural lands, such as settlements, offices, shops, roads, and other public infrastructure facilities (Soemarno, 2013).

The increasing demand for urban land development is expanding as the population grows, while the area of land is not growing and is becoming even more limited (Mantra & Bagoes, 2000). Currently, agricultural land has a low land value compared to other types of land (non-agricultural). Consequently, agricultural land will continue to experience land conversion to non-agricultural (Fadjarajani, 2001). Whereas, agricultural land is very important; in addition



to having economic value as a food support buffer, it also serves as a water catchment area, regulates the water system, and provides for the absorption of carbon in the air (Banowati et al., 2013; Arsyad & Sitanala, 2010).

The benefits of such agricultural land should be preserved and are not to be neglected. Besides disturbing the ecosystem, the conversion of agricultural land also disrupts the socio-economic life of farmers because the perceived socio-economic changes tend to be in the direction of the farmers (Soemarwoto, 2004); (Sihaloho & Martua, 2004). The existence of paddy fields becomes very important for the sustainability of agriculture, but in fact, the area of rice fields is increasingly longer and tends to decrease (Sihaloho & Martua, 2004; Widjanarko, 2006; Daldjoeni, 2014; Sutmaatmadja, 1988). This usually occurs in urban areas, including in Tasikmalaya City. The increasingly narrowing of this land area indicates the conversion of agricultural land to non-agricultural land. Therefore, the objective of this study is to determine the phenomenon of land conversion and the factors that affect the conversion of agricultural land to non-agricultural in Tasikmalaya City.

Methodology

This research used a descriptive method with data collection technique combined with field observation, interview, literature study, and documentation study (Sugiyono, 2012). The total sampling technique of landowners included a maximum of 17 families, and the purposive sampling of farmers or farm laborers included a maximum of 62 families.

Discussion

Agricultural land conversion phenomenon into non-agricultural land

1 Land conversion is a partial or complete change of function of the land area from its original function (as planned) to other functions that have negative impacts (problems) on the environment and the potential of the land itself (BPS Statistics Indonesia, 2017). The conversion of land in the Sukanagara subdistrict of Purbaratu, Tasikmalaya City during 2013–2017 included agricultural land converted into housing and settlement, agricultural land into a ring road, and agricultural land into a place of business (shops). The rate of land conversion (% or per cent) is determined by the difference in the size of the land in the current year, minus the previous year's land area, multiplied by 100 per cent.

Table 1. Change of area of agricultural land in 2013-2017

Year	Area of farmland (Ha)	Diminish (Ha)	Percentage (%)
2013	83	-	-
2014	73	10	80.19
2015	73	-	-
2016	71	2	13.20
2017	70	1	6.6
Total		13	100

Source: Data BPP

Based on the data (subtracting the land area in 2017 from the land area in 2013), the result is a decrease of agricultural land area in the last five years in Sukanagara Village by 13 hectares, if the average reduction of agricultural land area was 2.6 per cent, per year. This was related to the process of housing construction, roads, and economic facilities that required land, therefore converting agricultural land in Sukanagara Village. The land changes be identified in the image of the following Google Earth results (figure 1).

Figure 1. Google Earth image of Sukanagara subdistrict



Figure 2. Map of 2013 before land conversion

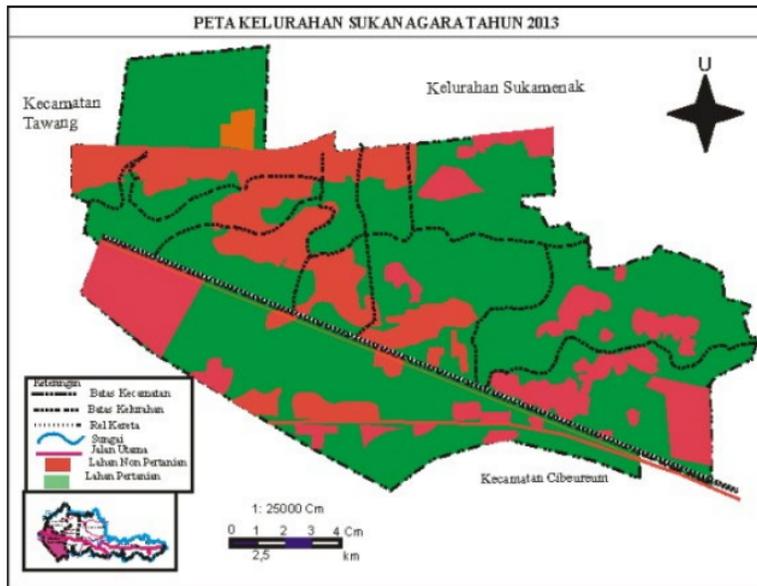
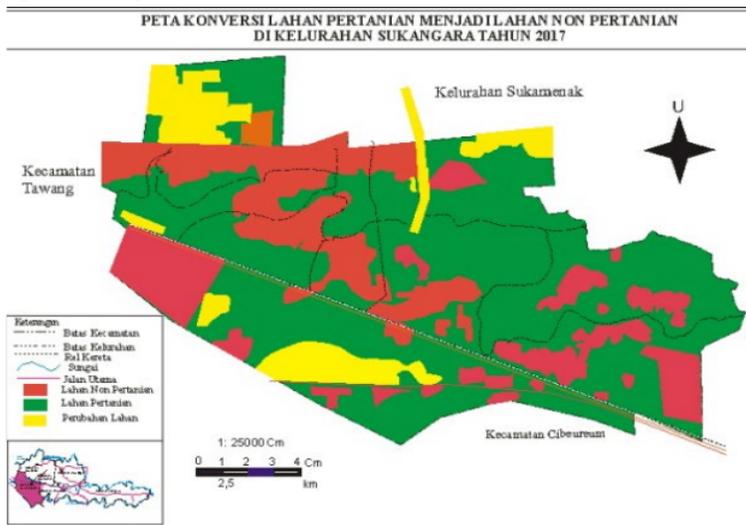


Figure 3. Map of 2017 after land conversion



Based on the data of BPP Sukanagara Urban Estate, the area of farmland (paddy fields, ponds, gardens) in 2013 consisted of 83 hectares (40 per cent). In 2014, it decreased to 73 hectares (35 per cent) and remained at this size in 2015. In the year 2016, the area reduced



again to 71 hectares. The final year, in 2017, the area was 70 hectares (34 per cent). Meanwhile, non-agricultural land (cemetery, yard, settlement, sport/recreation, office, and service) in 2013 amounted to 123 hectares (60 per cent) and grew to 136 hectares (66 per cent) in 2017. Total farmland decreased from 2013 to 2017 covering 13 hectares, while non-agricultural land increased by 13 hectares. The land area in the land conversion that changed in Sukanagara Village is as follows:

Table 2. Convertible land change condition 2013 – 2017.

No	Type of Land Change	Area (Ha)	Percentage (%)
1	Housing/Settlements	8	61.54
2	Place of Business and Services	2	15.38
3	Social and Public Infrastructure	3	23.08
	Total	13	100

Source: Research result data of 2018

Based on the data, the agricultural land that changed into housing/settlement consisted of eight hectares (61.54 per cent), agricultural land into a place of business/services consisted of two hectares (15.38 per cent), and agricultural land into a social and public infrastructure consisted of three hectares (23.08 per cent). The next section explains the result of the following research.

Housing. According to the provisions of Law Number 1 Year 2011 on Housing and Settlements, Housing and Settlements are a collection of houses as part of settlements, both in urban and rural areas, equipped with public facilities and utilities as a result of efforts to fulfill decent housing. While, the settlements are part of the environment outside the protected area, both in urban and rural areas, that function as a residential environment or place of activity to support life. Based on the form included in the form of demographic adaptation conversion, this was related to the increasing number of residents in Sukanagara Village. According to monograph data in 2017, as many as 8,103 people resided in 2,390 settlements/housing units, indicating that 3–4 people lived in each house.

Road. Roads are road transport infrastructures covering all parts of the road, including auxiliary buildings and equipment intended for traffic, located at ground level, above ground level, below ground level and/or water, above the surface water, except railroads, road lorries, and cable roads (Regulation of Minister of Public Works No. 11 Year 2010 Article 1).

Figure 4. Construction of North ring road in Sukanagara subdistrict. **Figure 5.** Conversion of land into shops.



The conversion of agricultural land into the North Ring Road was built in accordance with the Decree of the Head of the Capital Investment and Integrated Licensing Agency of Tasikmalaya City No. 591/Kep. 020/PL-BPMPPT/2015 on October 28, 2015, with the Provision of Location Determination for Land Procurement Needs for Construction of the North Ring Road on behalf of Tasikmalaya City Government, covering an area of $\pm 115,500\text{m}^2$. Construction of the road was still in the process of widening, which was planned to connect the territory of Karangresik with Lanud (Air Field) Wiriadinata. The existence of the road construction made the surrounding land undergo development in the form of shops and places of business.

A rice field in 2015 was converted from agricultural land into a form of shopping in the Sukanagara Village area, consisting of two hectares. There are several shops that line along Jalan Purbaratu, including a Puskesmas (Public Health Center), which are in the process of developing buildings, pharmacies, and banking facilities. The existence of the construction of economic and social facilities can support the lives of the people around them.

Factors that affect the conversion of agricultural land into non-agricultural land

Population growth. The factors that encourage the conversion of agricultural land to non-agriculture include population factors; namely, the increase and the spread of population in a region. Changes in the population structure, including the number and population density, affect the changes in land use associated with the increasing conversion of agricultural land into non-agricultural land in the Village District of Sukanagara Purbaratu Tasikmalaya.

Figures increased from 7,206 in 2013 to 8,103 in 2017 with the rate of population growth known from the current year's difference with the previous year i.e. 8,103 minus 7,206 is a



known population growth of 897 inhabitants. Based on this data, the rate of population growth in this five-year period in Sukanagara Village was 1.79 per cent. This increase in population growth is influenced by natural population growth (birth) and non-natural (migration or migration).

Land requirements. The land is the surface of the earth that is useful for human life which is formed by complex physical and non-physical factors contained thereon. Population growth is related to the needs; the greater the rate of population growth, the greater the need either in the form of clothing, food, shelter, including the need for land demand to satisfy the needs and desires. Thus, development continues to occur from year to year to support human activities.

This development requires land, so land conversion is basically unavoidable in the implementation of development. Increasing the need for land in a region means a reduction of the area of agricultural land. Based on the research results, the conditions of land converted for the construction of housing consisted of eight hectares, for places of business and services two hectares, and social and public infrastructure consisted of three hectares. The construction requires 13 hectares of land.

Economic needs. The greater the number of a population, then the need is increasing. Economic growth in industry, trade, and services affects the disinterest of the population to work in the agricultural sector. Moreover, income in the agricultural sector is not sufficient because it depends on seasonal factors. The average farmer/farm laborer earns Rp. 30,000–50,000 per day. Moreover, the income of farmers with a profit-sharing system between landowners who only land invest while farmers work on energy and production costs. In addition, most farmers have land owned by others. Income is very low when viewed from the economic conditions of increasing household needs. The reason for the landowner's farmers to sell or convert their agricultural land is because of the urgency of economic needs, for business capital, to obtain better financial benefits (economics) compared to the farming sector.

Government policy. The construction of the North Ring Road that occurred through Sukanagara subdistrict, Puramatan City, and Tasikmalaya City, was built according to the Decree of the Head of Capital Investment and Integrated Licensing Service Tasikmalaya city No. 591/Kep. 020/PL-BPMPPT /2015 on October 28, 2015, with the Determination of Location For Land Acquisition Requirement for the North Ring Road Development on behalf of Tasikmalaya City Government, totaling $\pm 115,500\text{m}^2$. The government's objective for the road construction was to develop the area around Sukanagara Village, to facilitate inter-regional interaction, and to reduce the congestion of frequent residents in the road docks around the road in Kelurahan Sukanagara.



Conclusion and Recommendations

The phenomenon of the conversion of agricultural land can be identified from the agricultural land area converted to non-agriculture. The conversion of land in the Sukanagara subdistrict Purbaratu Tasikmalaya City during 2013–2017 included the conversion of agricultural land into housing and settlement, agricultural land into a ring road, and agricultural land into a place of business (shops). Agricultural land converted to housing/settlements consisted of eight hectares (61.54 per cent), agricultural land converted to business/service area consisted of two hectares (15.38 per cent), and agricultural land converted to social and public infrastructure consisted of three hectares (23.08 per cent).

The factors affecting land conversion in the Sukanagara subdistrict, Purbaratu district, Tasikmalaya City, among others, includes:

- a. Population growth
Based on monograph data between from 2013–2017, Sukanagara urban village reached a population of 8,103 people in 2017, increasing by 897 people since 2013. With a relatively fast growth rate of 1.79 per cent, this population growth has an impact on increasing the conversion of agricultural land to non-agricultural.
- b. Land requirements
Demand for land tends to increase along with population growth and economic development in the Sukanagara subdistrict Purbaratu Kota Tasikmalaya. Development occurred in the form of housing/settlement, the northern ring road, and shops. The existence of such development projects requires land.
- c. Economic needs
The landowner sells or converts his agricultural land for reasons of economic necessity or the higher the land economy because it expects more profit (economic factors).
- d. Government policy
In the framework of regional development in the form of public facilities and infrastructure aimed at providing convenience in the mobility of the community, so as to prosper the community.

It was recommended that:

- 1) The increasing number of people occurs due to natural growth (birth) and non-natural (migration) factors. The growth of the population should be reduced by increasing education to delay marriage in early age, and by improving education so the mindset of society will change, especially the mindset that assumes many children results in much sustenance. In addition, implementing a family planning program as more and more people will need more clothing, food, and shelter, including land that will affect land use change related to agricultural land conversion.



- 2) There is a need for further research on the impact of changes in land function, both positive and negative in physical and social aspects, especially for the livelihoods of inhabitants, particularly in the agricultural sector.
- 3) There should be government attention in order to be more selective and firm in giving permission for drying agricultural land that will be used for non-agricultural purposes. Converted farmland should be replaced for lost agricultural land so that agricultural land will not decrease, which will have an impact on changes in the livelihood of farmers or the loss of future generations working in the agricultural sector.



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