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Precise Land Evaluation Implementation of the Regional Spatial Plan in the Sleman Regency to Maintain Human Health and Food Security

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Abstract

Agricultural land in Sleman Regency has changed many functions, including constructing toll roads and settlements. The conversion of agricultural land to non-agricultural land, without being balanced by the creation of new farmland, resulted in the threat of crisis. This research aims to adjust the spatial plan and its application in the field to suppress and control the rate of agricultural land conversion, thus supporting the maintenance and the realization of food security and good health. It was implemented in the Sleman Regency area covering 17 sub-districts. This research uses the institutional survey method, which collects secondary data from development policies and programs from relevant agencies via email, website or coming directly to the office. The results show that the total area of agricultural land conversion in Sleman Regency is 69.93 ha per year. Agricultural land needs to increase its size by 356 ha in 2019 to meet the demands of the applicable laws and regulations. Land use unrelated to the area's function can impact ecological imbalances and potential disasters. Efforts to optimize land use include land certification, granting, signage and tightening permits. Finally, this research study concluded that by optimizing land use, it is hoped that it will be able to maintain and realize food security and good health, especially in Sleman Regency.

Keywords: actual land; food security; healthy life; land conversion; soil science

INTRODUCTION

Land use is a human activity on earth to meet the needs of their lives. The community uses the entire area of Sleman Regency for agricultural land. Astuti and Herwin (2020), in their research explained that the land use of Sleman Regency from year to year had undergone many changes. In 2018, 87.04 ha of land use were changed. In 2019, land use change decreased to 31.94 ha. In 2020, it increased rapidly to 91.02 ha, and in 2021 rose again to 95.81 ha. This shows a rapid land conversion rate in Sleman Regency, with a total land change area in the four years of 305.81 ha. Based on surveys and data, agricultural land in Sleman Regency has changed many functions, including constructing toll roads and settlements. Sinuraya (2021) revealed that sustainable food agricultural land (LP2B) in Sleman was affected by the 35.48 ha toll road project spread across Seyegan, Mlati and Tempel Sub-district. In addition to land conversion for regional development, Sleman Regency is also a target of settlement and community business activities. The total area of agricultural land conversion in Sleman Regency is 69.93 ha per year.

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Land use change is a change in land use from one specific service form to another. Alinda et al. (2021) define land conversion as a change in the function of a part or all of a land area into another role due to development and an increase in population. Based on Law No. 41 of 2009 concerning the Protection of LP2B, land conversion is a change in the function of sustainable food agricultural land into non-sustainable food agricultural land either permanently or temporarily. According to Ardani (2020), the impacts arising from land conversion, are reduced paddy fields which result in decreased rice production, which will disrupt the achievement of the food self-sufficiency, loss of fertile agricultural land, the loss of investment in irrigation infrastructure, damage to natural landscapes and environmental problems. Ayun et al. (2020) added that the conversion of paddy fields also affects the social and economic environment. The research results by Witjaksono et al. (2015) found that the impact of land conversion activities on food security reduced the volume of dry grain production. Further adverse effects include reduced sources of water reserves, reduced the good eco-system, and contamination of soil, water and air due to the activities of the surrounding community.

The conversion of agricultural land to non-agricultural land, without being balanced by the creation of new farmland, resulted in the threat of a crisis. To face this problem, the government passed Law No. 41 of 2009 concerning the Protection of LP2B. According to Taufik et al. (2018), the existence of LP2B aims to ensure the provision of agricultural food land sustainably as a source of decent work and livelihood for humanity by prioritizing the principles of togetherness, equitable efficiency, sustainability, environmental insight and independence, as well as by maintaining balance, progress and national economic unity, and adjustments to the spatial plan of the territory can be a solution. Sleman Regency, when this activity was carried out, only had Regional Regulation No. 12 of 2012 concerning the Spatial Program of Sleman Regency, so the adjustment of the spatial plan referred to Regional Regulation of D.I. Yogyakarta No. 5 of 2019 concerning Spatial Planning. With a plan map, it is hoped that development can be evaluated in terms of direction and spatial arrangement. Although there has been a lot of function change, at least there is a reference for controlling regional development.

The suitability of land use with spatial planning is an analysis of the relationship between the type of actual land use and the ideal conditions to be realized. The conversion of agricultural land is one of the phenomena that occurs a lot today in land use. According to Hambali et al. (2021), with the increase in population and development activities, the demand for land used to carry out activities are getting more significant and increasing, both in the agricultural sector and the non-agricultural sector. According to the economic principle, users will always maximize their land use. Therefore, efforts are needed to adjust the spatial plan and its application in the field to suppress and control the rate of agricultural land conversion. According to Zuhri (2018), there is supervision to maintain space utilization according to applicable reporting, monitoring and evaluation regulations. This is intended to ensure that the general plan of regional spatial planning in the Sleman Regency is consistent. This research is appropriate to maintain and realize good food security and health, as Hafidah et al. (2017) conveyed that spatial planning needs to pay attention to environmental studies so that there is a balance, both economically and socially also environmentally. Establishing perennial agricultural land areas also protects sustainable agricultural land from fulfilling people's right to food.

MATERIALS AND METHOD

Time and study location

This research was carried out for 30 days. The study was held in February to March 2022 at the Ministry of Agrarian and Spatial Planning/National Land Agency of the Sleman Regency Office, D.I. Yogyakarta.

Research design

This activity is carried out in the Sleman Regency area covering 17 sub-districts. This research used an institutional survey method. Institutional surveys in the form of secondary data collection to related agencies.

Data analysis

Data is obtained by collecting various development policies and programs from relevant agencies or regional apparatus work units through

email, website or by coming directly to the office. In this case, the data comes from the National Land Agency, the Agriculture and Fisheries Service, the Regional Development Planning Agency, and the Land and Spatial Planning Office of Sleman Regency. They were extracting more detailed information through interviews. Interviews were conducted with Civil Servants at the National Land Agency and the Agriculture and Fisheries Service of Sleman Regency.

RESULTS AND DISCUSSION

Land use

Sleman geographically stretches from 110°33'00" to 110°13'00" E and 7°34'51" to 7°47'03" S. The area of Sleman Regency is 57,482 ha or 574.82 km^2, or about 18% of the location of the D.I. Yogyakarta, which has an area of 3,185.80 km^2. Sleman Regency consists of 17 sub-districts, 86 villages and 1,212 halmets. The entire area of Sleman Regency is partly used for rice fields. Martanto and Andriani (2021) define land use as human intervention, either permanently or periodically, on land to meet the material, spiritual and combined needs of both. Several types, including forests, shrubs, settlements, farms, rice fields, moors and waters distinguish land use in Sleman Regency. The distribution of land use in Sleman Regency in 2021 can be seen in Table 1.

Actual land use evaluation of regional spatial plans

The function of the Sleman Regency area is divided into annual crop cultivation areas, protected areas, buffer areas and annual plant areas. The sustainable food agriculture area (KP2B) is included in the function of the yearly crop cultivation area. According to Amalina et al. (2018), a KP2B is an agricultural cultivation area that has an expanse of LP2B and a stretch of sustainable food agricultural reserve land (LCP2B) and its supporting elements with the primary function of supporting regional and national food independence, resilience and sovereignty. According to Masrukhin (2019), two aspects carry out in applying LP2B: planning and determining LP2B in the district regional spatial plan and research. According to data from the Sleman Land and Spatial Planning Office in 2021 and the D.I. Yogyakarta Regional Regulation No. 5 of 2019 concerning the Regional Spatial plan, the area of land used for LP2B in Sleman Regency is 1,947.54 ha. The LCP2B is 534.50 ha. The total land area used for KP2B

Table 1. Land use distribution data of Sleman Regency

Sub-district	Land use						
	Shrubs (ha)	Forest (ha)	Farm (ha)	Settlements (ha)	Irrigated fields (ha)	Rainfed fields (ha)	Moor (ha)
Berbah	7.8	0	241.1	559.4	1,326.3	0	319.8
Cangkringan	660.6	97.9	1,443.2	643.3	1,275.0	0	675.1
Depok	9.9	0	352.2	1,595.6	905.8	0	318.0
Gamping	0	0	368.1	1,028.0	1,311.9	0	145.5
Godean	0	0	204.0	905.4	1,532.2	0	27.1
Kalasan	1.7	0	196.7	1,011.6	2,162.6	0	191.5
Minggir	0	0	159.3	855.5	1,571.9	2.9	45.8
Mlati	0.6	0	214.6	1,163.4	1,369.1	0	72.6
Moyudan	0	0	270.7	860.9	1,450.5	22.7	90.5
Ngaglik	5.5	0	141.2	1,303.3	2,195.9	0	187.1
Ngemplak	14.8	0	176.9	993.8	2,313.7	0	153.8
Pakem	253.2	826.9	365.3	844.6	1,907.5	1	379.5
Prambanan	210.3	0	310.3	576.9	1,042.0	378.7	1,546.0
Seyegan	0	0	186.3	857.7	1,599.9	0	9.7
Sleman	0	0	148.5	988.8	1,891.5	78.4	11.8
Tempel	0	0	341.2	883.9	954.2	926.2	70.1
Turi	266.2	0.5	682.7	853.4	1,365.0	140.4	710.8
Area (ha)	1,430.7	1,117	5,802.4	15,926.0	26,175.0	1,550.3	4,954.0
Percentage (%)	2	2.5	10	28	46	3	9

Source: Sleman Regency Land and Spatial Planning Office (2021)

is 18,482.04 ha, spread over 16 sub-districts. *Kapanewon* Depok is not included in the LP2B or LCP2B determination area because Depok is already densely populated with urban settlements and is an educational center or mobility center for community activities. In comparison, LCP2B is only found in *Kapanewon* Cangkringan, with an area of 534.50 ha. Regional data with LP2B in Sleman Regency in 2021 as shown in Table 2.

A regional spatial plan is a layout plan of various land allotments to meet an area's different wants and needs. According to Andriawan et al. (2020), the regional spatial plan, from now on abbreviated as the regional spatial plan, is the result of spatial planning, which contains development policy objectives, development strategies, determination of regional spatial structures, determination of regional spatial pattern plans, determination of strategic areas, the direction of space utilization, and control of regional space benefits for 20 years. The definition of spatial patterns is also explained in Regional Regulation of Sleman No. 3 of 2021 concerning the National Medium Term Development Plan 2021 to 2026. Space patterns are the distribution of space designations in an area, including space allocation for protection and cultivation functions. According to Rismawati et al. (2021), the harmony of spatial patterns with land use is a comparison between the direction of an area according to spatial planning and the existing conditions of current land use. The spatial pattern plan for the Sleman Regency consists of a protected allotment area and a cultivation allotment area. The spatial pattern plan for protected allotment areas in Sleman Regency includes water catchment areas, river border areas, areas around lakes and reservoirs, Merapi Volcano National Park and Nature Tourism Parks, geological reserve areas, disaster-prone areas for Merapi Volcano eruptions, landslides, earthquakes, and droughts, as well as cultural heritage areas with an area of 14,414 ha. The spatial pattern plan for the cultivation allotment area of Sleman Regency consists of community plantation areas, agriculture, mining and energy, industry, tourism, settlements, defense and security, and research and higher education allotment areas with an area of 43,068 ha.

Spatial plan of Sleman Regency 2021 to 2040 as shown in Figure 1. Provincial or district spatial plans have a validity period of 20 years and can be reviewed every five years. Sleman Regency, at the time this activity was carried out, only had Regional Regulation No. 12 of 2012 concerning the Sleman Regency Regional Spatial plan for 2011 to 2031. However, although it still needs to update the policy, Sleman Regency has passed Sleman Regent's Regulations No. 3 of 2021 concerning the Detailed Spatial Plan of the East Sleman Region 2021 to 2040. For the detailed

Table 2. Regional data with LP2B in Sleman Regency in 2021

Sub-district	LCP2B (ha)	LP2B (ha)	Area (ha)
Berbah		885.38	885.38
Cangkringan	534.50	1,241.75	1,776.25
Gamping		310.43	310.43
Godean		938.90	938.90
Kalasan		1,083.11	1,083.11
Minggir		1,235.89	1,235.89
Mlati		371.43	371.43
Moyudan		1,074.79	1,074.79
Ngaglik		966.17	966.17
Ngemplak		1,449.65	1,449.65
Pakem		1,408.01	1,408.01
Prambanan		1,604.12	1,604.12
Seyegan		1,188.98	1,188.98
Sleman		1,133.09	1,133.09
Tempel		1,371.70	1,371.70
Turi		1,684.15	1,684.15
Area (ha)	534.50	17,947.54	18,482.04

Source: Sleman Regency Land and Spatial Planning Office (2021)

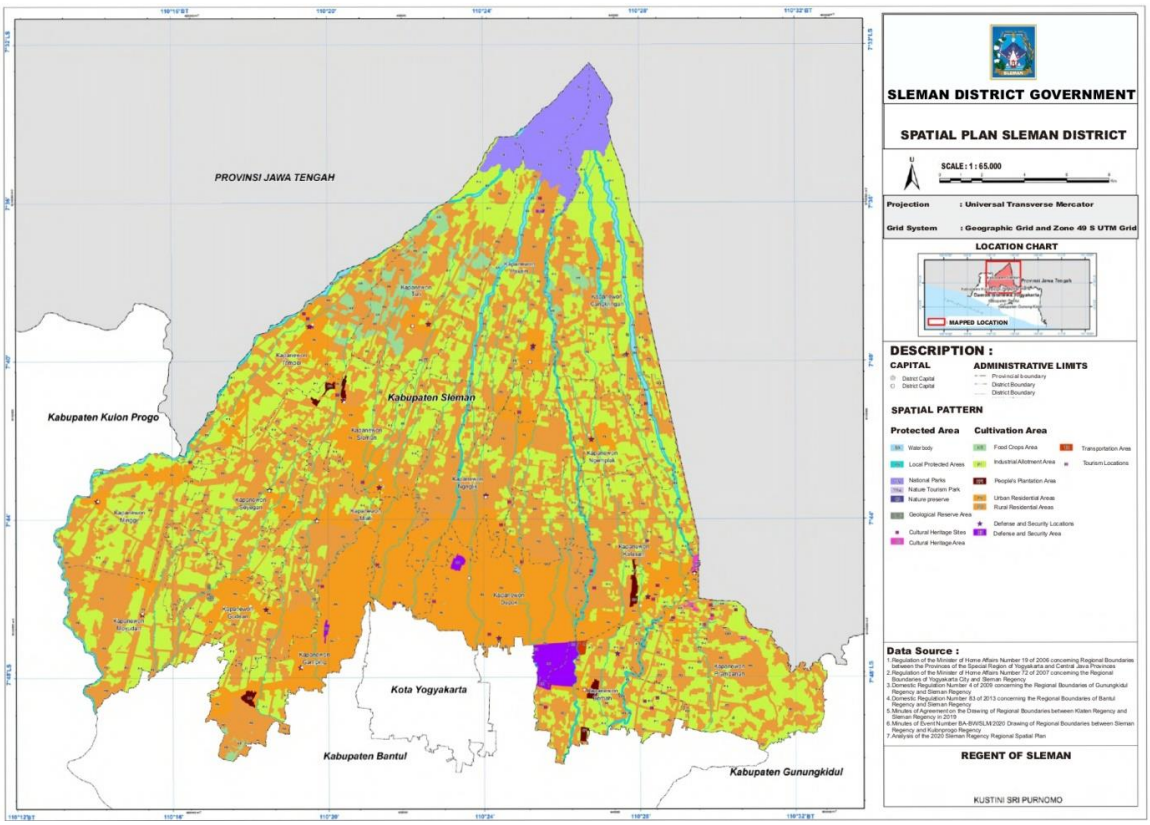

Figure 1. Spatial plan Sleman Regency 2021 to 2040 (draft regional regulations)

spatial plan, the west Sleman region is still awaiting ratification, while the central and northern regions are still in submission. The issue of land conversion in Sleman Regency shows a mismatch between the expected ideals and the fact that it occurs on the ground. Muryono and Utami (2020) explain that there are six sources of spatial plan irregularities, namely the need to accommodate current community needs and space allocation not supported by the availability of adequate infrastructure. The lack of socialization of spatial plans, the lack of community legal awareness, the difficulty in land acquisition in appropriate locations, and the lack of established spatial objectives still need to be addressed.

Land use deviation is a form of land use conversion that is different from the spatial plan in the form of an area function that is unsuitable for use. According to Soma (2021), land use mismatch generally occurs on land that is planned as agricultural land into non-agricultural ground. This is closely related to the need for vast land, resulting in much land conversion. Based on the data obtained, the deviation in the use of LP2B that occurred in Sleman Regency was the transfer of land functions for the construction of freeways in 3 sub-districts of the existing 17 sub-districts. The Sleman Land and Spatial Planning Office has prepared regional regulations related to LP2B as a mechanism for using LP2B for regional development. However, negotiating the Regional Legislation Project in the form of minutes of legislation at the Sleman Regional People's Representative Assembly level. Based on the results obtained from an interview with Mr. Supriyatno at the Land and Spatial Planning Office of Sleman Regency, there are seven villages in three sub-districts affected by the construction of the Yogya-Bawen toll road. These areas include LP2B, namely in the Seyegan, Mlati and Tempel regions, with 915 fields. Seyegan Sub-district has the highest number of fields, namely 372 fields, Mlati 277 fields, and Tempel 266 lots. Sinuraya (2021), in his research, stated that LP2B in Sleman was affected by the toll road project covering an area of 35.48 ha. The details are that 8.64 ha are needed for the Yogyakarta-Solo freeway construction project, and 26.84 ha for the Yogyakarta-Bawen line.

The most common violation of spatial planning regulations in the Sleman Regency area

is the trigger for establishing settlements and developing tourism for housing, culinary areas, supermarkets and lodging (homestays, dorm rooms, and hotels) on agricultural land. This situation is the background for the reduction in the area of agricultural land due to the proven land conversion in 2017, covering an area of 19,131 ha. In 2019 to 18,126 ha, the existing agricultural land in Sleman Regency was below the figure stipulated in D.I. Yogyakarta Provincial Regulation No. 5 of 2019 concerning the D.I. Yogyakarta Regional Spatial Plan for 2019 to 2039. As a result, Sleman Regency needs help allocating land intended as LP2B areas. Similar results in the research of Ansari et al. (2020) showed many deviations in perennial agricultural land. Agricultural land statistics in Sleman Regency in 2011 to 2019 decreased by 4,693 ha, while non-agricultural land increased.

Table 3. Agricultural land area of Sleman Regency from 2011 to 2019

Year	Agricultural land area (ha)
2011	22,819
2012	22,786
2013	22,623
2014	22,233
2015	21,907
2016	21,842
2017	19,131
2018	18,137
2019	18,126

Source: Sleman Agriculture, Food and Fisheries Service (2020)

Table 3 shows the number of agricultural land distribution figures in Sleman Regency succeeded as a safe zone as evidenced from 2011 (22,819 ha) to 2016 (21,842 ha) well-controlled. Still, from 2017 (19,131 ha) to 2019 (18,126 ha), there was the most change in the function of agricultural land due to the construction of freeways, so it precisely needed adjustment to the new rules, especially the Regional Regulation of the D.I. Yogyakarta Province No. 5 of 2019 concerning the Spatial plan of the D.I. Yogyakarta for 2019 to 2039. According to Krisnantoro and Pramono (2021) and Ayub et al. (2022), there are many agricultural land conversions due to economic value factors (land rent). According to Nainggolan et al. (2021), the difference in land rent between residential and agricultural land is up to 79 times. Arisoy et al. (2019) added that another factor, namely the pursuit of local indigenous income, also often trumps long-term interests in food security. In accumulation, it is predicted that Sleman Regency, procuring agricultural land, needs to increase its area by 356 ha. The actual data on the location of agricultural land in Sleman Regency from 2011 to 2019 is 18,126 ha, while the conformity follows the KP2B with an area of 18,482 ha to suit the needs of the mandate of the applicable legislation.

Ideally, agricultural land that enters LP2B cannot be converted, as stated in Article 21 of Regional Regulation No. 6 of 2020 concerning the Protection of LP2B. The area of LP2B designated in paragraph (1) is prohibited from being converted. The prohibition of conversion, as referred to in paragraph (2), is excluded from the conversion of LP2B by the local government in the context of the construction of residential houses owned by land-owning farmers, land acquisition for the public interest, or natural disasters. Regarding the conversion of LP2B, as referred to in paragraph (3), the regional government replaces the area of land converted. Therefore, the Sleman Regency Government prepared a LP2B reserve on agricultural land in the Disaster-Prone Area (KRB) III of Mount Merapi, covering Cangkringan, Pakem and Turi Sub-districts. Habibatussolikhah et al. (2016), in their research, said that buffer areas are the key to maintaining food conditions in Sleman Regency (sustainable food security policy).

In addition to land conversion for regional development, Sleman Regency is the target of settlement and community business activities. The implication is extensive settlement growth, both in urban and rural areas. According to Fahyudi et al. (2020), the development of settlements that are experiencing expansion will cause a change in the function of the surrounding land; from an economic point of view, if agricultural land converts into residential land, it will harm the income and employment of farmers. This condition contradicts Sleman's essential function as a water catchment area for the Yogyakarta region. As a result, water catchment areas are decreasing through raw land conversion in upstream areas, plantation areas and agriculture. According to Meilani et al. (2020), reduced water catchment areas cause rain that does not seep into the ground but flows on the surface and can cause flooding if the water discharge is too high. Open space is also shrinking

in urban areas, especially Beran and Depok. The transfer of moor functions occurred in Pakem Sub-district, while Gamping, Minggir, Moyudan and Prambanan Sub-districts kept their tasks the same. The definition of a water catchment area, according to Nasrah et al. (2022), is an area with a high ability to absorb rainwater, so it is a place to fill earth water (aquifer) which is helpful as a source of water. This area is spread across 10 sub-districts out of 17 existing sub-districts. Based on deviations that occurred based on data obtained from National Land Agency of Sleman Regency in 2020 (Table 4), Sleman experienced agricultural land conversion of 69.93 ha per year.

Healthy life and food security

Food security is an absolute prerequisite as one of the essential roles in human life. Food security is a condition of fulfilling households' food needs, which are reflected in the availability of sufficient food, both in quantity and quality, that is safe, equitable and affordable. The primary function of food for humans is to meet the needs of the body's nutrients. A healthy life will be awakened by solid food security. Along with increasing public awareness of the importance of a healthy life, the need for food is also growing. According to Verawati et al. (2021), food security indirectly impacts human health, such as through the problem of malnutrition. An important cause of nutritional problems is a lack of access to food availability in the region. Food security is a multidimensional concept, covering the chain of food and nutrition systems starting from production, consumption distribution and nutritional status. So that food security is essential to maintain as a fulfillment of nutrition and human nutrition for a healthy life.

The conversion of agricultural land use harms the environment, which results in a decrease in food security. Law No. 18 of 2012 explains that food security is a condition for the fulfillment of food by the state to individuals, which is reflected in the availability of sufficient food, both in quantity and quality, that is safe, diverse, nutritious, equitable, and affordable and does not conflict with the religion, beliefs, and culture of the community, to be able to live a healthy, active, and productive life sustainably. Prasada and Priyanto (2019) added that natural resources in the form of existing soil and water could be used to obtain agricultural productivity, especially rice, both in extensibility and intensification. Sleman Regency does not allow for an increase in agricultural production through intensification. According to research conducted by Rizqi (2020), Sleman Regency is classified as a very dense area, so intensification is done by paying attention to land use planning.

Table 4. Agricultural land conversion and water catchment in 2020

Sub-districts	Land conversion		Total	Water catchment area
	Rice field (ha)	Moor (ha)	(ha)	(ha)
Berbah	3.62	0.14	3.76	
Cangkringan	0.21	0.15	0.36	4,821.09
Depok	5.69	1.55	7.24	
Gamping	6.60	0	6.60	
Godean	1.13	0.05	1.18	
Kalasan	3.32	1.74	5.06	2,432.01
Minggir	1.88	0	1.88	
Mlati	3.24	0.37	3.61	2,579.80
Moyudan	0.36	0	0.36	
Ngaglik	5.62	1.05	6.67	519.57
Ngemplak	1.63	1.43	3.06	2,588.97
Pakem	1.52	12.18	13.70	0.37
Prambanan	0.83	0	0.83	
Seyegan	0.38	6.81	7.19	4.92
Sleman	3.61	0.05	3.65	2,574.22
Tempel	0.48	0.07	0.55	4,642.24
Turi	1.04	3.20	4.24	4,042.24
Total (ha)	41.60	28.78	69.93	24,205.38

Source: Sleman Agriculture, Food and Fisheries Service (2020)

The main factors affecting food security in Sleman Regency are rice production, population growth, economic factors and urban development. According to Wicaksono (2015), the level of food security in 2013 was 149.83%, and in 2020, it is estimated to be 95.83%. In their book, Tono et al. (2021) state that Sleman ranked 59 out of 416 regencies in Indonesia with a Food Security Index (IKP) of 83.39 in 2021. Food security has decreased from year to year. This is due to the land conversion that continues to occur. Therefore, the conversion level of agricultural land that occurs in Sleman Regency affects food security.

The harvest area is strongly influenced by the conversion of agricultural land and the transfer of commodities. Meanwhile, productivity is influenced by human resources, seeds, fertilizers and agricultural technology. According to Arimbawa and Widanta (2017), productivity is also one factor that significantly affects farmers' levels of welfare, especially food crops. Pangestika and Prihtanti (2020) added that the food crop subsector's farmer exchange rate (FTP) in 2020 decreased compared to 2018, from 102.96 to 101.03. The FTP is targeted at 102 to 104. It is necessary to increase rice productivity so that the FTP target is achieved.

Based on data from the Sleman Agriculture, Food and Fisheries Service (Table 5) obtained regarding the harvest area, production, and average rice production per sub-district last updated in 2018, Ngemplak has the most significant and Turi is the sub-district with the smallest harvest area. The average rice production in 2018 in Sleman Regency was 53.42 quintal ha^{-1}, a decrease from 2017. The harvest of paddy rice and paddy fields of Sleman Regency in 2018 was recorded at 246,539 tons. Compared to 2017, there was a 16.30% decrease in production by, with a presentation of 289,070 tons. Following the statement of Harini et al. (2019), the reduction in the area of agricultural land due to land conversion has an impact on reducing agricultural production. Although Sleman Regency has many land conversions, farmers' rice production is still sufficient and relatively safe. Afandi (2011) explained that, theoretically, shrinking land area is not necessarily automatic and significantly causes a decrease in rice production. According to Saragih et al. (2018), rice production is generally determined by two main variables: land area and productivity. Putra and Walmi (2020) added that the increase in rice production tends to be more dominantly influenced by increased productivity than land area.

Table 5. Harvest area, production, average rice production of Sleman Regency in 2018

Sub-districts	Harvest area (ha)	Production (ton MDG^{-1})	Average rice production (quintal ha^{-1})
Moyudan	3,315.13	16,704.97	50.39
Minggir	3,515.39	18,118.48	51.54
Seyegan	2,953.53	16,020.20	54.24
Godean	3,354.99	18,533.02	55.24
Gamping	2,561.56	14,097.74	54.10
Mlati	2,138.27	11,568.43	54.85
Depok	1,024.06	5,617.33	54.85
Berbah	2,568.21	14,086.28	53.60
Prambanan	3,122.47	16,567.46	53.06
Kalasan	3,135.76	17,030.60	54.31
Ngemplak	3,865.60	21,082.39	54.54
Ngaglik	3,129.11	16,781.83	53.63
Sleman	2,946.89	15,742.96	53.42
Tempel	2,094.62	11,076.81	52.88
Turi	804.82	4,231.25	52.57
Pakem	2,677.35	14,195.15	53.02
Cangkringan	2,940.25	15,084.13	51.30
Total	46,148.00	246,539.02	53.42

Source: Sleman Agriculture, Food and Fisheries Service and Sleman Land and Spatial Planning Office (2018)
Note: MDG = milled dry grain

The role of the government in land use control

Land use not determined by the spatial plan, especially the area's function, can impact ecological imbalances and disaster potential. To optimize land use according to what has been regulated in the Sleman Regency spatial plan, the Sleman Regency Government controls land use at the district or city level. According to Nur (2019), natural disasters can occur due to ecological imbalances, triggering floods, landslides, fires and droughts. To protect agricultural land as contained in Sleman Regency Regional Regulation No. 12 of 2012 concerning the Sleman Regency spatial plan, the Sleman Regency Government carries out various strategies, including certification of agricultural land, granting signage to agricultural areas and tightening permits. The regional planning board of Sleman Regency has made improvements to land development planning according to its designation, both for land that must be maintained as agricultural land and for regional spatial development into industry, education, trade and settlements.

CONCLUSIONS

The eternal agricultural land of Sleman Regency is being converted for a 35.48 ha toll road, residential and commercial. The total area converted per year is 69.93 ha per year, meaning that the speed of land conversion in Sleman Regency is fast. Sleman Regency needs to increase the size of agricultural land by 356 ha as of 2019 to comply with the demands of applicable regulations. Optimization effort is a recommendation from this research. These recommendations from this research study can be used and considered by local governments when developing policies for implementing land conversion. Finally, land conversion policy implementations will allow us to maintain and realize food security and good health for society.

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