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Analysis of The Implementation of Sustainable Food Agricultural Land Protection Policy in Bandung District: A Case Study of Rice Field Conversion in Cikancung District

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ABSTRACT

The policy of sustainable protection of agricultural land becomes crucial in addressing land degradation and land use conversion, primarily from agriculture to non-agriculture, alongside the increasing demand for land due to population growth and economic development, which can lead to negative impacts such as a decrease in food security, marginalization of agricultural land, and an increase in flood risks. This research aims to analyze the implementation of the Sustainable Protection of Food Agricultural Land Policy, understand the rate of paddy field conversion, and identify trends in land conversion after the policy's enforcement. This study employs a qualitative approach, with data obtained through interviews, observations, and documentary studies. The research is conducted in Bandung Regency, with samples taken from Cikancung Sub-district, Bandung Regency, West Java Province. Informants involved in this research are selected through judgment sampling and are individuals related to the sustainable protection of agricultural land policy and relevant stakeholders. Data analysis is conducted using qualitative and spatial analysis. The research findings indicate that implementing a sustainable agricultural land protection policy in Bandung Regency is still in the socialization and planning stages. Based on spatial analysis, implementing the policy in the Cikancung Sub-district has led to the conversion of paddy fields, predominantly converted into industrial land, particularly in non-technical irrigation paddy fields. This conversion covers a total area of 20.3 hectares, with the most significant change occurring in non-technical irrigation paddy fields converted into industries, covering an area of 13.7 hectares. Based on internal, external, and policy analysis, the policy implementation in the Cikancung Sub-district could have been more optimal in addressing the conversion of paddy fields.

Introduction

Land degradation is a significant concern in sustainable development, as it significantly impacts natural resources, ecosystem services, and people's livelihoods and economies. Land use conversion is one of the causes of land degradation (Triani & Novani, 2023). This land conversion process can adversely affect local communities and the environment. Negative impacts include illegal settlements, poverty, water bodies, soil pollution, and increased flood intensity (Samat, Awang, Hussin, & Nawi, 2020). The most highlighted adverse effects of agricultural land conversion are declining food security, reduced agricultural employment, and marginalization of agricultural land. Another negative impact of this land use change on the environment is increasing the intensity of flooding due to reduced water catchment areas (Syawal, Madani, & Mustari, 2021).

The high change rate in land use, especially from agricultural to non-agricultural, is increasingly visible, especially in developing countries. Population growth continues to increase, causing an increase in human activities to meet the needs of life. This human activity is related to activities that utilize existing natural resources (SDA). One of the resources needed for human activities is the island (Suharyanto, Arya, & Mahaputra, 2017).

The increasing needs of the community are driving the growing demand for land. The rising scarcity of land due to population growth, accompanied by high demand for non-agricultural activities due to economic development, ultimately changes agricultural land. One example is the transformation of rice fields used as non-agricultural or built-up land (Pramanik, Purnomo, & Kasiwi, 2020).

Changes in paddy fields are not only influenced by internal factors within the region itself, which include the role of farmers, but they also depend on changes that occur outside the area (due to interactions with growth centers or surrounding areas). The study of (Wahyudi, 2020) suggests that the improvement of the land conversion process from external factors is caused by increased development of the non-agricultural sector to obtain land that can be immediately utilized, especially with those seen from accessibility and biophysical characteristics. The two main aspects in this case involve (1) Government Programs such as the implementation of Ring Road / Ring Road Projects and (2) the Role of Investors / Private Sector, especially in the industrial sector. In this context, an approach is needed to understand the changing dynamics of rice field conversion so managers can consider potential changes. The need for environmental, social, and economic infrastructure development, along with changes outside the region that affect rice fields directly or indirectly, affects the growth of existing rice fields.

Conflicts of interest arise when there are differences between individuals who want to optimize rice fields for purposes that are considered to have higher economic value and the interests of the nation or community who want to maintain the sustainability of the existing rice field system, being one of the causes of difficulty in keeping the rice field system, the continuous occurrence of this rice field land conversion. As a developing country, Indonesia struggles to maximize development or maintain food sovereignty. National development that continues to be intensified can undoubtedly threaten food

security, including rice food sovereignty. The environmental balance is also threatened due to changes in areas that function as water and carbon catchments, which have been lost to built-up land. Therefore, regulations are needed to maintain and protect rice fields so they can be maintained and exist as perennial rice fields.

As a form of controlling land use change that continues to increase, the government makes policies through Law No. 41 of 2009 concerning "Protection of Sustainable Food Agricultural Land and Government Regulation No. 1 of 2011 concerning Determination of Sustainable Food Agricultural Land Conversion." The government also regulates incentives for farmers who maintain their agricultural land not to be converted and used as non-agricultural land by issuing Government Regulation No. 12 of 2012 concerning "Incentives for Sustainable Food Agricultural Land Protection." However, since the policy issuance, the area of raw rice fields in Indonesia has decreased yearly.

BPS said the area of raw rice fields has decreased; in 2018, the remaining land area was 7.1 million hectares, a decrease compared to 2017, with an area of 7.75 million ha. Director General of Agricultural Infrastructure and Facilities of the Ministry of Agriculture Sarwo Edhie Wibowo stated that rice fields' average raw land area has decreased by 650,000 hectares per year (Lestari, 2022). The Minister of Agrarian Affairs and Spatial Planning / BPN 2019 announced that the area of raw rice fields increased by 7.46 million hectares. The increase occurred due to embossed rice fields covering an area of 386 thousand hectares.

One is rice granaries in Indonesia, namely in West Java Province. According to detik.com news, from 2014 to 2018, raw paddy fields in West Java continued to shrink from the original 936,529 Ha to 898,711 Ha (Mardhiya & Julia, 2023). In 2019, the Bandung Regency Government issued Regional Regulation No. 1 of 2019 concerning "Protection of Sustainable Agricultural Land and its amendments, Bandung Regency Regional Regulation Number 15 of 2019 concerning Amendments to Regional Regulation Number 1 of 2019 concerning Protection of Sustainable Food Agricultural Land which stipulates a sustainable food land area of 31,046.74 Ha."

In 2021 to follow up on Presidential Regulation No. 59 of 2019 concerning "Control of Land Use Change," the Ministry of Agrarian Affairs and Spatial Planning / BPN issued Decree ATR / KBPN No 1589 / SK-HK.02.01 / XII / 2021 concerning "Determination of Protected Rice Field Maps in Districts / Cities in West Sumatra Province, Banten Province, West Java Province, Central Java Province, Yogyakarta Special Region Province, East Java Province, Bali Province, and West Nusa Tenggara Province."

In Kepmen ATR/BPN No 1589/SK-HK.02.01/XII/2021, it is determined that the area of Protected Rice Fields (LSD) in Bandung Regency is 30,107 Ha. However, according to Bandung Regency Regent Dadang Supriatna, there is a discrepancy between LSD and the new Regional Spatial Plan Regional Regulation. Regarding the difference between the area of rice fields stipulated in Kepmen ATR / BPN No 1589 / SK-HK.02.01 / XII / 2021 and the area of existing rice fields in Bandung Regency, actual verification is carried out, the results of which are stated in the Minutes of Agreement on Actual Verification of Settlement of Discrepancies in Protected Rice Fields with Spatial Plans.

Based on the Minutes of Agreement on Actual Verification of Settlement of Discrepancies in Protected Rice Fields with Spatial Plan dated October 11, 2022, of the LSD area stipulated in Kepmen ATR/BPN No 1589/SK-HK.02.01/XII/2021, an area of 5,677.36 ha cannot be maintained as an LSD object because there is a national strategic project plan, there is a national interest in flood management, There are development plans in the context of regional development, investment plans and there are individual property rights that are prioritized to be considered for housing development. The phenomenon of shifting the status of rice field tenure to investors or business people shows that the potential for agricultural land conversion still exists even though the Bandung Regency Government has made a policy to protect sustainable farming land.

Bandung Regency is an area that has a large enough raw paddy field. However, due to development pressure as a buffer area for the capital of West Java province, many paddy fields have been converted and used as non-agricultural land for industry, services, or settlements. In 2019, to curb the rate of agricultural land conversion, Bandung Regency Regional Regulation No. 1 of 2019 concerning "Protection of Sustainable Food Agricultural Land" was issued. The regulation stipulates that food agrarian land that cannot be converted and protected covers an area of 31,046.74 Ha. The regional regulation is a follow-up step from the Bandung Regency Government to Law No. 41 of 2009 concerning the Protection of Sustainable Food Agricultural Land.

In its implementation, land determined to be sustainable food agricultural land is used as a reference in land conversion permits. However, it turns out that in some areas that have been determined to be sustainable food agrarian land, there are differences in the allocation of land use as outlined in the Bandung Regency Regional Spatial Plan in 2016. Many industrial, service, and housing entrepreneurs have invested and purchased land by looking at the regional spatial plan in 2016. The impact of this is resistance from investors because the land that has been purchased is determined to be sustainable food agricultural land and is prohibited from being converted.

Due to this refusal, Bandung Regency Regional Regulation No. 15 of 2019 concerning Amendments to Regional Regulation No. 1 of 2019 concerning the Protection of Sustainable Food Agricultural Land, one of which replaces the area of sustainable food agricultural land that is designated to be prohibited from conversion by Wet Agricultural Land and Dry Agricultural Land as outlined in the Bandung Regency Regional Spatial Plan in 2016.

Based on the 2020 Land Use Balance Map (Bandung Regency Land Office), there is still a conversion of agricultural land used as non-agricultural land. This cannot be separated from the role of farmers, landowners, or non-farmer landowners who have the right to use their land. The issuance of a policy prohibiting the conversion of rice fields does not necessarily stop the desire of landowners to use their land according to their needs. The insistence on economic needs, limited land ownership, and the demand for land with high price offers are some of the reasons farmers sell or convert their rice fields.

Amid development pressure in Bandung Regency as a buffer area for the provincial capital and the insistence on the increasing economic needs of farmers, controlling the

conversion of paddy fields for the Bandung Regency Regional Government is a considerable challenge. Based on this, the purpose of this study is to analyze the implementation of the Sustainable Food Agricultural Land Protection policy, determine the rate of conversion of rice fields, and identify trends in land use change after the enactment of the policy.

Research Methods

This study uses a qualitative approach to analyze the implementation of sustainable food agricultural land protection policies, with data obtained through interviews, observations, and documentation studies. In the interview stage, in-depth interviews were conducted with policy implementers and related farmer groups. This study also collects additional information on the Cikancung sub-district on land use through literature studies and digital sources by referring to government archives/documents related to agricultural land conversion control policies. The research was conducted in Bandung Regency with sampling in Cikancung District, Bandung Regency, West Java Province. The choice of location is because based on spatial analysis of the 2020 Land Use Balance Map with the Sustainable Food Agricultural Land Map, the rate of conversion of rice fields designated as Sustainable Food Agricultural Land in the sub-district is the largest compared to all sub-districts in Bandung Regency. Many rice fields are designated industrial estates in the Regional Spatial Plan of Bandung Regency, Cikancung District. The informants in this study were selected by judgment sampling and are officials concerned with sustainable food agricultural land protection policies (Agriculture Office, Land Office, Spatial Planning Office, Licensing Office, Village Head, and Farmer Group) data analysis using qualitative and spatial analysis. Spatial analysis was carried out to determine the conversion of paddy fields into built-up land by overlaying the 2020 Land Use Map with the 2023 Land Use Map.

Results and Discussion

Implementation of Sustainable Food Agricultural Land Protection Policy (PLP2B)

PLP2B is a strategy to overcome the increase in agricultural land conversion due to development. In 2019, Bandung Regency issued a policy on protecting sustainable food agricultural land through Regional Regulation No. 1 2019. This regulation was later revised and changed to Regional Regulation No. 15 of 2019.

Implementation of Regional Regulation Number 1 of 2019

Regional Regulation No. 1 of 2019 was enacted on January 19, 2019, containing 11 Chapters and 73 Articles. According to the regulations, the area of agricultural land prohibited from conversion and protection covers an area of 31,046.74 Ha spread across 30 districts. The regional regulation has also attached 31 maps of sustainable food agricultural land.

The first activity carried out after the establishment of the PLP2B policy was socialization at the district level, which was attended by agencies within the local government of Bandung Regency, all sub-districts throughout Bandung Regency,

representatives of Village Heads, the Indonesian Farmers Harmony Association, and agricultural organizations. In addition to direct socialization, socialization was done through the agriculture office's website, social media, agricultural extension centers, and agricultural partners. According to Ir, direct socialization has yet to be carried out for farmers or rice field owners whose land is designated as sustainable food agricultural land. Yayan Agustian, M.Si.,

"For socialization to the community, we socialize it through websites, partners' representatives, and sub-districts and villages because if we go directly door to door to each sub-district, it is too much and time-consuming. In addition, there is also an Agricultural Extension Center that directly conveys to the community."

One of the direct differences felt after establishing the LP2B policy is that when there is an application for a location permit located on a paddy field, the Department of Agriculture is always invited to discuss the granting of location permits and during field reviews. The Department of Agriculture was asked to consider whether the location included LP2B objects or not. Before the PLP2B policy was established, attention to the alif function of paddy fields needed to be improved, and the Agriculture Office was rarely involved.

Regional Regulation No. 7 of 2012 states, "The discussion of granting location permits is carried out by a technical team tasked with carrying out the process of research, assessment, and examination of technical requirements in the field of licensing stipulated by the Regent Decree." The technical team has a fixed team and a non-fixed team. The permanent team, also called the basic infrastructure work unit, consists of Bappeda, DPMPTSP, Bandung Regency Land Office, the Environment Office, and the Public Works and Spatial Planning Office. In contrast, a non-permanent team is a work unit that becomes a situational technical team depending on the designation of the location permit requested.

Location permit services are a means to control the conversion rate of rice fields. With the establishment of the PLP2B policy, the Sustainable Food Agricultural Land Map is used as a reference in granting location permits. When the area requested for a location permit enters the sustainable food agricultural land area, it will be rejected. It must be removed from the area requested for a location permit. From 2019 until now, there has been a change in the mechanism for granting location permits. The mechanism for granting location permits changed after the enactment of the Job Creation Law.

One of the requirements for the location permit is the existence of technical land considerations, which are the authority of the Bandung Regency Land Office. According to the Regulation of the Minister of Agrarian Affairs and Spatial Planning/Head of the National Land Agency of the Republic of Indonesia No. 27 of 2019, Land Technical Considerations refer to technical evaluations related to land use, including analysis of ownership, control, land utilization, and use. This analysis considers land availability, soil capability, and spatial suitability. Based on the words of the Coordinator of the Land Use Substance Group, after the issuance of the PLP2B policy in the preparation of land

technical arrangements, the LP2B Map became the basis for making technical consideration maps.

Based on information from the Village Head and village officials in the sub-district, it has never been implemented. In Cikasungka Village, for example, several farmers or rice field owners convert their rice fields into house buildings. Until now, no guidance has been given to farmers who convert their rice fields into house buildings.

The PLP2B policy also regulates the supervisory function of the Regional Government of Bandung Regency. This supervisory function includes reporting, monitoring, and evaluation. Reporting is carried out in stages from the village or village government to the district government through the sub-district using the periodic report format. The district government also reported the activity to the provincial government. However, in its implementation, according to the results of interviews with the Head of Cikasungka Village, the village work unit never made a report related to the protection of sustainable food agricultural land; this was by statements from the Secretary of Mandalasari Village and the Secretary of Tanjunglaya Village. The village needs to be made aware of any duty or authority to carry out supervision or reporting related to the protection of sustainable agricultural land, especially regarding land conversion violations in sustainable food agricultural land areas.

Based on the discussion above, starting from the stipulation of Bandung Regency Regional Regulation Number 1 of 2019, the implementation of the policy has yet to be fully implemented and only until the socialization stage and the determination of the Sustainable Food Agricultural Land Map. Control measures implemented are only in the form of licensing mechanisms related to converting functions to agricultural land until the revision of Bandung Regency Regional Regulation No. 1 of 2019.

In October 2019, the Department of Agriculture submitted a revision to the PLP2B Regional Regulation with the following considerations:

1. There is a recommendation from the Ministry of ATR/BPN concerning the Clarification and Verification of the Standard Area of Rice Fields, dated September 12, 2019;
2. Determination of Sustainable Food Agriculture Areas that are not adequately accommodated in the regulation regarding LP2B Protection as well as the arrangements in the RTRW (Regional Spatial Plan) and RDTR (Detailed Spatial Plan)
3. There are no norms regarding standards, procedures, and criteria for providing incentives as a regulatory mandate in PP 12/2012 Article 40. (Bandung Regency Agriculture Office)

2019, the Ministry of ATR / BPN issued Kepmen ATR / BPN No. 686 / SK-PG.03.03 / XII / 2019 concerning the Raw Land Area of Rice Fields. There are differences between the raw land area of rice fields set by the Ministry of ATR / BPN, LP2B Map, and Bandung Regency RTRW Spatial Pattern 2016-2036; here is a picture of the difference between the Ministry of ATR / BPN Raw Rice Field Map and the Bandung Regency RTRW Spatial Pattern:

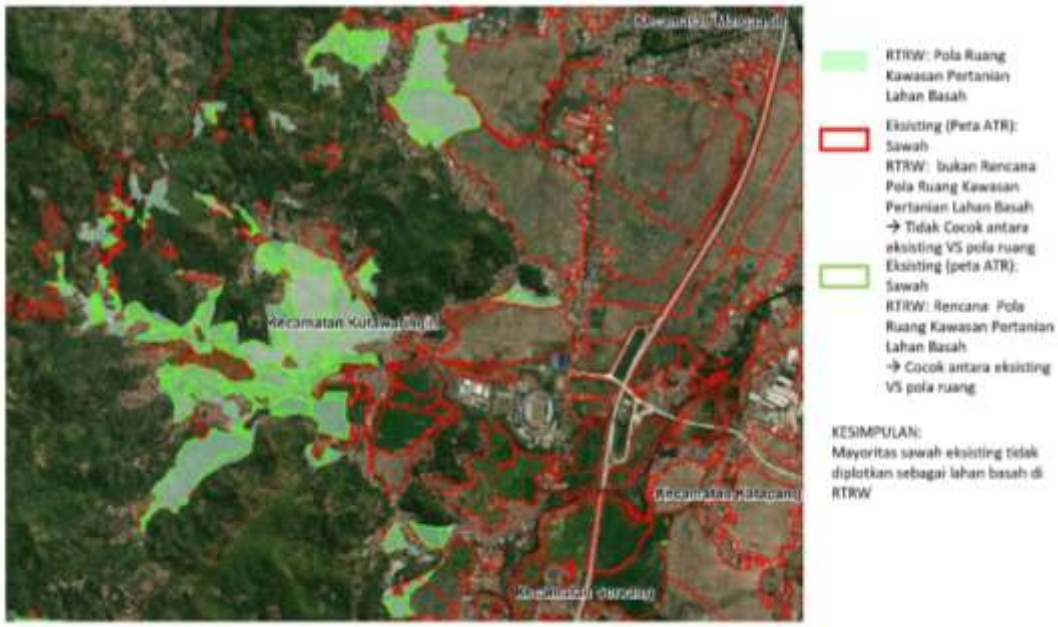

Figure 1
Differences in the Map of Raw Rice Fields of the Ministry of ATR / BPN and the Spatial Pattern of Wetland Agricultural Areas

Based on Figure 1, the above differences are the basis for the re-verification of the LP2B Map in Bandung Regency Regional Regulation No. 1 of 2019, which is one of the considerations for revising the Bandung Regency PLP2B policy. In addition, according to the Head of Extension of the Bandung Regency Agriculture Office, the existence of a Strategic Plan for National Development Projects such as the GETACI TOLL Road is one of the considerations for revising the PLP2B Regional Regulation because the compensation requirements stipulated in the PLP2B Regional Regulation are feared to hinder the implementation of National Development Projects.

From November to December 17, 2019, a discussion was held on the revision of PLP2B Regional Regulation with the Bandung Regency DPRD Pansus V Team, and on December 31, 2019, Bandung Regency Regional Regulation No. 15 of 2019 concerning Amendments to Regional Regulation No. 1 of 2019 concerning the Protection of Sustainable Food Agricultural Land.

Implementation of Bandung Regency Regional Regulation Number 15 of 2019

One of the changes in Regional Regulation Number 15 of 2019 is the elimination of the Sustainable Food Agricultural Land Map (LP2B) that has been determined and contained in the previous LP2B Regional Regulation, which contains the location and area of LP2B land. The extent of LP2B objects will be determined in the new RTRW Regional Regulation, which is still legalizing the RTRW Regional Plan. This causes unclear LP2B objects that must be protected. The unclarity of the LP2B object is the reason for the absence of an incentive program from the Agriculture Office.

According to the Head of the Extension Division of the Agriculture Office, the assistance programs and agricultural land arrangements that have been prepared cannot

be implemented because the location or object of LP2B is unclear. So, after the revision of Regional Regulation No. 1 of 2019 and changed to Regional Regulation No. 15 of 2019, the Agriculture Office cannot implement the incentive programs that have been prepared because the object of providing incentives is unclear, and for the implementation of Regional Regulation No. 15 of 2019 then waiting for the enactment of a new RTRW Regional Regulation containing sustainable food agricultural land areas.

The preparation of RDTR and RTRW is the authority of the Public Works and Spatial Planning Office (PUTR). One of the RDTR preparations stipulates Sustainable Food Agricultural Land. According to Heni Riantin, S.T., M.T. as a Young Expert Spatial Planner in the Field of Spatial Planning of the PUTR Office, "For some regions, LP2B has been included in the RDTR, while the determination of P2B Areas in RTRW has been integrated covering an area of 16,915.90 ha, but has not been ratified." four sub-districts have been determined and include LP2B, namely Soreang, Katapang, Kutawaringin, Margaasih, and Balai Endah Districts. As for the other sub-district areas, it is still in the process of being prepared in stages.

Policy Implementation Factors

George Edward III, with a policy implementation model developed with a Top-down perspective (Karim, Moenta, & Riza, 2018), emphasized four main issues in the policy implementation process that must be considered: communication, resources, disposition, and bureaucratic structures. Data related to the implementation of sustainable food agricultural land protection policies obtained through observations, documentation, and interviews from certain informants, namely:

Implementing sustainable food agricultural land protection policies faces several challenges that need attention. In the communication aspect, although policy socialization has been carried out at the district level, there are shortcomings at the sub-district and village levels, where sub-district heads or village heads have never implemented PLP2B policy socialization. This causes information clarity not to reach the lowest level of office in the sub-district or village, resulting in a lack of understanding of policy implementers at that level.

In addition, the resource factor is also a concern. The Bandung Regency Agriculture Office is experiencing a shortage of human resources, especially agricultural extension workers, whose retirements outnumber the recruitment of new employees. Although in terms of quality, most extension workers already have competency certificates, some of them concurrently hold structural position duties due to a lack of personnel.

The financial resources aspect is also an obstacle, as no specific budget is allocated for implementing PLP2B policies. The lack of clarity regarding the subject and area of land also makes it challenging to allocate budgets. Agricultural facilities and infrastructure in Bandung Regency are considered adequate. Still, there are several areas for improvement, such as the lack of computers and official vehicles at the Cikancung District Agricultural Extension Center.

Finally, it is necessary to pay attention to the aspect of authority. The absence of regulations derived from the PLP2B Policy Regional Regulation that regulates the

authority of each work unit as the implementer of PLP2B policies is an obstacle to the effectiveness of policy implementation. This has resulted in the absence of supervision or making reports on policy implementation at the village and sub-district levels. Therefore, improvements in communication, human resources, budget allocation, and authority determination are urgently needed to ensure the successful implementation of sustainable food agricultural land protection policies.

Laju Alih Fungsi Lahan Sawah Di Kecamatan Cikancung

The conversion rate after implementing the PLP2B policy is known through spatial analysis using ArcGIS 10.8 Software. The spatial analysis was carried out by overlaying the Land Use Map of Cikancung District in 2020 and the Land Use Map of Cikancung District in 2023. The 2020 Cikancung District Land Use Map was obtained from the Bandung Regency Land Office, namely:

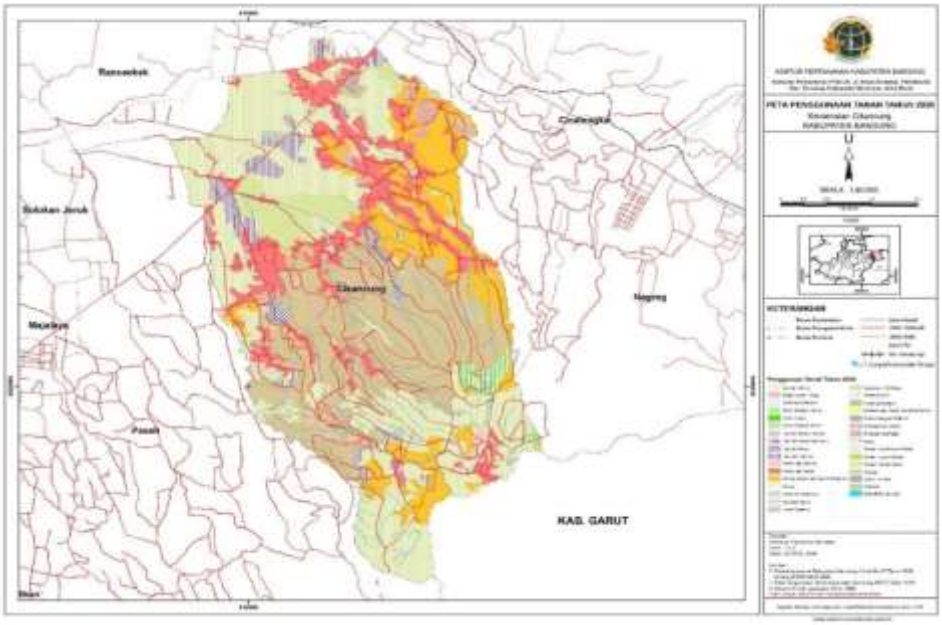

Figure 2 Land Use Map of Cikancung District in 2020

Based on Figure 2, the 2023 Cikancung District Land Use Map was obtained by updating the 2020 Cikancung District Land Use Map by delineating Google Earth Imagery in 2023 and ground checking to validate the Google Earth Image delineation results. From the delineation of Google Earth Imagery and Groundchecking, the 2023 Cikancung District Land Use Map is obtained as follows:

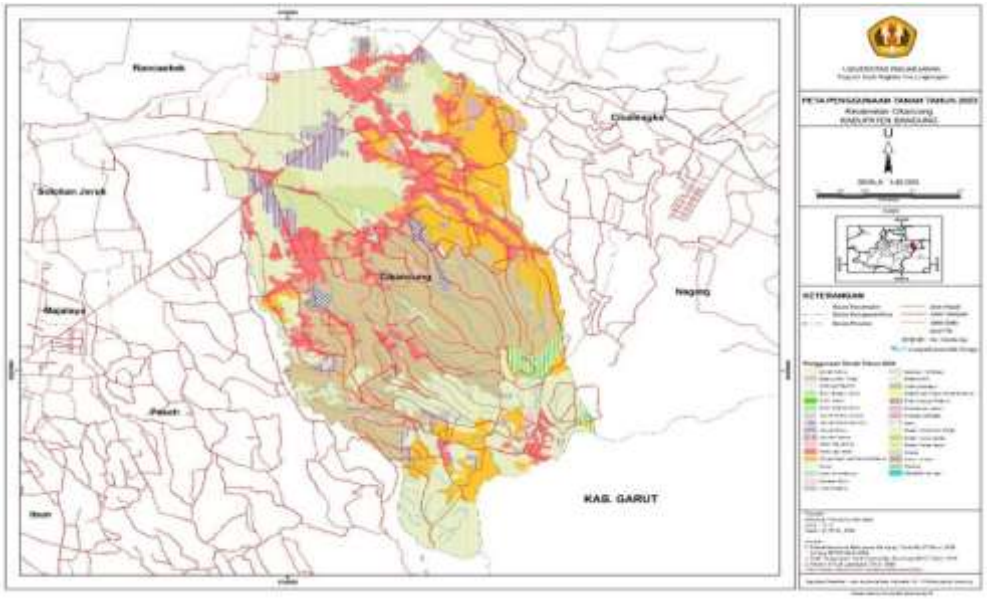

Figure 3 Land Use Map of Cikancung District in 2023

Based on Figure 3, the analysis of the rate of conversion of paddy fields after the implementation of the PLP2B policy in Cikancung District was carried out by overlaying the 2020 Cikancung District Land Use Map with the 2023 Cikancung District Land Use Map using ArcGIS 10.8 Software and obtained the 2023 Cikancung District Rice Field Use Change Map as follows:

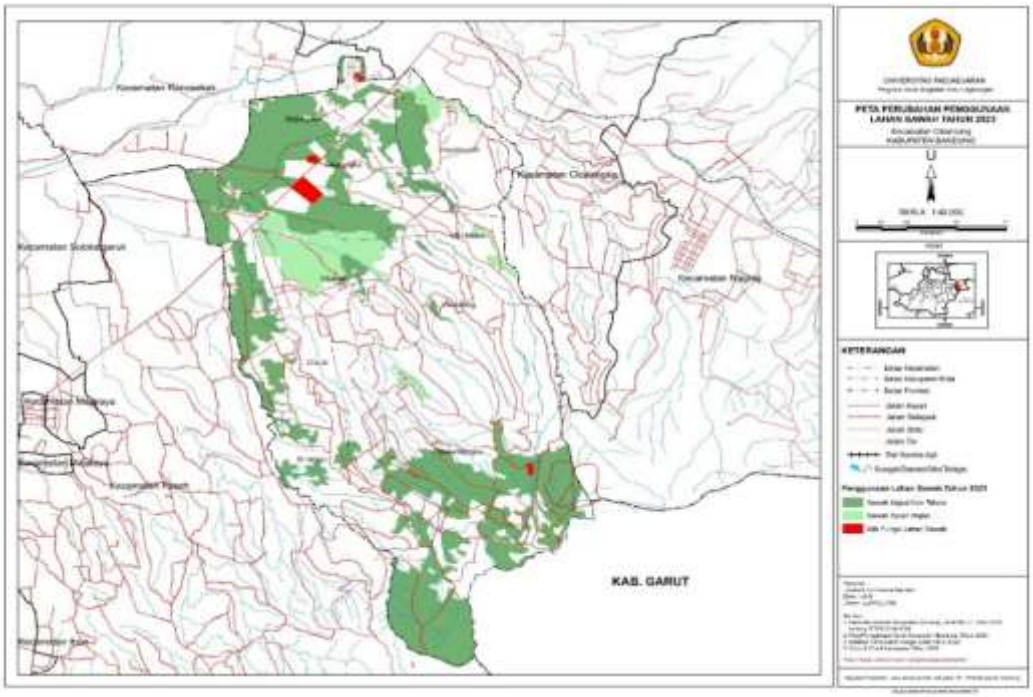

Figure 4
Map of Rice Field Land Use Change in Cikancung District in 2023

Based on Figure 4, the Rice Field Land Use Change Map above obtained data on the conversion of paddy fields in Cikancung District based on the class of change of paddy fields into built-up land; the results are:

Table 1
Area of Conversion of Rice Field in Cikancung District Based on Change Class

No	Early Use	Last Use	Class Change	Speed (m2)
1	Non-Technical Irrigated Rice Fields	Other Industries	Non-Technical Irrigated Rice Fields Become Other Industries	137.351
2	Non-Technical Irrigated Rice Fields	Rare Village	Non-technical Irrigated Rice Fields Become Rare Villages	31.738,45
3	Non-Technical Irrigated Rice Fields	Compact Village	Non-technical irrigated Rice Fields become Solid Villages	10.623,83
4	Non-Technical Irrigated Rice Fields	Compact Housing	Non-Technical Irrigated Rice Fields into Solid Housing	12.412,6
5	Swah Tara Hojin	Rare Village	Sawah Tadah Rain Becomes a Rare Village	5.943,85
6	Swah Tara Hojin	Compact Village	Sawah Tadah Rain becomes Kampung Padat	5.095,85
		Sum		203.165,58

Based on the details of Table 1, the class of changes in the use of paddy fields above, the most significant function conversion is the conversion of non-technical irrigated rice fields into industries with an area of 137,351 m2 or 13.7 Ha. In comparison, the smallest class of rice field use change is the change of rainfed rice fields into dense villages with an area of 5,095.85 m2. From Table 1, it can also be seen that rice fields converted and become non-agricultural land are fields with non-technical irrigation. With the conversion of rice fields into built-up land in Cikancung District, most of them are non-technically irrigated rice fields. Of the 20.3 Ha converted rice fields, 19.2 Ha are non-technical irrigated rice fields.

Land Conversion Trend After PLP2B Policy Implementation in Cikancung District

The trend of rice field conversion after the implementation of the PLP2B policy in Cikancung District can be analyzed from how the implementation of the PLP2B policy can suppress or solve the factors that make the emergence of rice field land conversion, as well as support from land owners as the target of the policy. Kustiwan (1997), quoted by Supriyadi (2004), stated that at least three main factors make the emergence of rice field land conversion, namely policy, external factors, and internal. Based on the results of interviews and field observations, several factors influence the emergence of rice field conversion in the Cikancung District, including:

1. Internal Factors

Narrow land tenure and low-income

The average ownership of paddy fields in Cikancung District is less than half a hectare. From 158 respondents, data on land owners with an area of more than 1 Ha totaled six people. Landowners with an area of 5000 m2–1 Ha totaled 16 people. Meanwhile, the owners of land with an area of less than half a hectare amounted to 136 people. From 158 respondents, the average area of rice field ownership is 2,241 m2 per person. Limited land ownership results in low farmers' income. According to Sumarno and Kartasasmita (2008), quoted in (Santosa et al., 2011), farmers' income from new paddy fields can meet the needs of families or farmers if they have rice fields of around 2 ha or at least 1 ha. Based on the results of observations, the average data collection from agricultural businesses ranges from IDR 250,000.00 – to IDR 3,000,000.00 per month, with an average monthly income of IDR 855,000.00. This value is still far from the UMR of the Bandung Regency government, IDR 3,492,465.00. The low income of these farmers and significant enough family dependents cause farmers to be unable to meet the needs of their families in life. This condition makes farmers optimize their rice fields to switch to non-agricultural fields or sell their agricultural land to obtain business capital and switch from farming businesses that provide more significant income potential.

Inheritance System

One of the narrower land ownership is caused by the inheritance system. Because of the narrow land area, the income from rice fields cannot meet the needs of the owner's farming family. In addition to income from small farming, the process of processing land takes time and energy, and many decide to refrain from continuing farming and divert to new sources of income in the non-agricultural sector. To open a new business, of course, capital is needed, and the rice fields owned from inheritance must be sold.

Many peasants bequeathed land to their children, later used for settlement purposes due to family development by marriage. Many farmers convert their rice fields to their children's homes because they no longer have land. A total of 17 respondents said that if needed, they might divert their agricultural land to build their children's and grandchildren's houses. This happens a lot in Cikasungka Village and Tanjunglaya Village. Because the location of their rice fields is close to settlements, many convert their rice fields into residential homes for their children. The Head of Cikasungka Village and the Secretary of Tanjunglaya Village said that in Cikasungka and Tanjunglaya Villages, many rice fields have been converted into residential houses because they are close to settlements. Most landowners build houses for their children. The village cannot prohibit it because it has no authority, and it is entirely the landowner's right to decide the land's use.

Farm Productivity

Low agricultural yields can cause farmers not to maintain their rice fields. Hidayat's research (2015) in Legok District, Tangerang Regency, shows that rice productivity negatively affects rice field conversion. The level of usefulness of paddy paddy is correlated with small land conversion. Farmers' production and income fall if prosperity is low, encouraging land conversion. Wardana et al. (2013), in a study in Mertoyudan District, Magelang Regency, revealed that rice productivity significantly affects rice field

land conversion. Rice productivity contributes to farmers' incomes, with increased productivity increasing incomes.

In Cikancung District, low rice productivity is caused by land area, lack of irrigation facilities, and pest disturbances. Rice fields in the hills are disturbed by bird pests, requiring the help of nets. The main obstacle in flat areas, such as Cihanyir, Cikancung, Cikasungka, and Tanjunglaya villages, is drought during the long dry season. However, adequate irrigation facilities and a lack of water sources cause drought and crop failure. Flooding in Cihanyir Village is an additional obstacle. Farmers in flat areas need the help of water-pumping machines and boreholes to overcome these obstacles.

2. External factors

Urban, demographic, and economic growth dynamics cause external factors. From the results of interviews and field observations, several factors were obtained that caused the conversion of rice fields, including:

Development Dynamics

Development in Cikancung District is more focused on industrial and residential development. According to Hidayat et al. (2012), land use change impacts activity growth, population, and development. Most of the paddy fields in Cikancung turned into Industrial Estates, such as in Cikasungka Village and Mandalasari Village, where 13.7 Ha of rice fields turned into factories.

Rice fields that are converted into factories are usually productive land. Some farmers were forced to sell their rice fields to factories because they were squeezed by the location of the factory's land. The growth of the industrial sector creates ample job opportunities, attracts new entrants, and increases housing needs. Limited land has caused the supply of paddy fields for settlement to increase, especially in Cihanyir Village.

Figure 5 Conversion of Rice Field Into Residential Buildings in Cihanyir Village, Cikancung District

Figure 5 shows an example of converting rice fields into residential houses in Cihanyir Village. A similar phenomenon occurred in Cikancung Village, where 12 Ha of

agricultural land will be converted into housing. In Tanjunglaya village, residents rejected plans to build housing in rice fields. In addition to industry and settlements, national strategic projects such as toll road construction contribute significantly to land use conversion. Tens of hectares of paddy fields in Cikancung changed their functions due to the GETACI Toll Road construction project.

Land Selling Price in Cikancung District

The stages in the process of converting agricultural land in general are (1) the release of land ownership rights and (2) the utilization of agricultural land for non-agricultural activities (Simatupang & Irawan, 2003). One of the causes of land use change begins with the release of land ownership rights through buying and selling. The profit value triggers the sale and purchase of paddy fields due to increased rice field prices.

The need for land for the industrial and residential sectors in Cikancung District has implications for the increasing demand for paddy fields. This resulted in a continuing increase in the selling price of paddy fields. Based on interviews with several respondents, the price of paddy fields, which was originally priced at Rp 2,000,000.00 per tumbak (1 tumbak = 14 m2), became Rp 5,000,000.00 due to demand for rice fields from the industrial sector. The high increase in selling prices caused rice field owners to decide to sell their rice fields for industrial sector purposes. In the interview, he stated that he would sell his rice field if the selling price were high. This result is almost the same as the research of (Sarjana, Dewi, & Ayu, 2015); as many as 50% of research respondents stated that they sold their land because they saw the selling price. The increasing selling price of land around the Subak Kerdung area also attracts landowners to sell their land.

3. Policy Factors

Policy factors are aspects of regulations issued by the central and regional governments related to changes in the function of agricultural land. Weaknesses in regulation or regulation are mainly related to issues of legal strength, sanctions for violations, and the accuracy of land objects that are prohibited from being converted.

The Regional Government of Bandung Regency has issued Regional Regulation Number 1 of 2019, which was later revised into Regional Regulation Number 15 of 2019 concerning the Protection of Sustainable Food Agricultural Land (PLP2B) to control the rate of conversion of agricultural land. A policy without actual implementation is like a dream that will not happen and only becomes a document neatly stored as an archive. Based on this context, a policy will see its effect if the policy has been implemented because the success or failure of a policy in achieving its objectives is determined by its implementation.

The success of the PLP2B policy in Cikancung District is influenced by the determinants of policy implementation, according to George Edward III, from the aspects of communication, resources, attitude of implementers, and bureaucratic structure of policy implementers. From the results of the study, there are obstacles in the implementation of PLP2B policies that caused until now the implementation of PLP2B policies not run optimally, including:

Communication Dimension

In the communication dimension, implementing PLP2B policies is still constrained because the socialization process only reaches some policy implementers and policy targets. Most policy implementers at the sub-district and village levels and the community do not know about PLP2B policies because policy socialization has never been implemented at the sub-district and village levels. Even though sub-districts and villages have a role as supervisors in implementing PLP2B policies, a lack of knowledge and understanding of implementers and policy objectives will undoubtedly be an obstacle to achieving PLP2B policy objectives.

Resource Dimensions

In the aspect of human resources, there still needs to be more implementing personnel in the counseling field, which is the spearhead in implementing PLP2B policies. There has been no specific budget allocation for implementing PLP2B policies for financial resources. As for authority resources, no regulation regulates the authority of each PLP2B policy implementer. Overall, the resource dimension still needs to be improved, which is an obstacle to implementing PLP2B policies.

Dimensions of the Executor's Attitude

Based on observations, all SKPD or agencies related to implementing policies on PLP2B have been involved. These SKPDs include the Agriculture Office, PUPR Office, BPN, and DPMPTSP. One form of involvement of these agencies is in the matter of granting land use permits. In particular, the Department of Agriculture, in this matter, has a hand in issuing technical approvals. In addition to being involved in implementing the PLP2B policy, all of these agencies carry out their respective duties and functions. There is no overlap with each other even though there are still no technical rules, which are derivative rules from Regional Regulations Number 1 and 15 of 2019.

Dimensions of Bureaucratic Structure

There are still obstacles in the bureaucratic structure dimension due to the absence of derivative regulations from Regional Regulations No. 1 and 15 of 2019 related to the bureaucratic structure of policy implementation, delegation of authority, implementation guidelines, and SOPs.

Overall, implementing the PLP2B policy still needs to be improved in terms of communication, resources, and bureaucratic structure. This impacts the implementation of PLP2B policies, which may not be optimal. Until now, the implementation of the PLP2B policy has only reached the socialization stage at the policy implementation level, and control of function transfer through licensing mechanisms is the primary function of agencies related to PLP2B policies.

The results of spatial analysis of changes in rice field use in Cikancung District since the issuance of the PLP2B policy there is still a land use change of 20.3 Ha. Conversion of rice fields occurs in more than rice fields bordering settlements. New residential buildings and villages appear in the area of rice fields that are not directly adjacent to settlements. Martanto (2012) and (Pakasi & Kumaat, 2018) stated that if there is land conversion in a location, the area of land converted in the area will be even greater.

If the PLP2B policy is not immediately implemented optimally, the tendency for rice field conversion will continue.

Conclusion

Based on the research that has been done, it can be concluded that the implementation of sustainable agricultural land protection policies in Bandung Regency has only arrived at the socialization and planning process. The undetermined area of Sustainable Food Agricultural Land in the RTRW Regional Regulation is an obstacle to the implementation of the PLP2B policy. The Bandung Regency Agriculture Office can only implement the policy if a transparent policy object or target exists. Based on spatial analysis, implementing the PLP2B policy in Cikancung District has caused the conversion of rice fields, especially in non-technical irrigated rice fields, which have predominantly turned into industrial land. This conversion of paddy fields covers a total area of 20.3 Ha, with the most significant change occurring in non-technical irrigated rice fields, which become industrial areas of 13.7 Ha.

Based on the analysis of internal, external, and policy factors, it can be concluded that the PLP2B policy in Cikancung District could have been more optimal in overcoming the conversion of rice fields. The main drivers of conversion are internal factors such as narrow land ownership, inheritance systems, and low productivity. External factors, such as development dynamics and rising land selling prices, also contribute to the trend of conversion of paddy fields in the region. Policy implementation constraints, especially in communication, resources, and bureaucratic structure, reinforce the tendency of rice field conversion in the Cikancung District.

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