
Implementation of Sustainable Food Agriculture Land Protection Policy in Supporting Food Security in Indramayu Regency, West Java Province

Habdul Manan^{1*}, Mawar², Maya Puspita Dewi³, izzatusholekha⁴

Universitas Muhammadiyah Jakarta, Indonesia

Email: wiraangkasa01@gmail.com*, mawar@umj.ac.id, maya.pd@umj.ac.id,
Izzatusholekha@umj.ac.id

ABSTRACT

This article discusses the implementation of the Sustainable Agricultural Land Protection Policy (PLP2B) in Indramayu Regency, West Java Province, which aims to support national food security. The study analyzes the challenges, strategies, and successes in maintaining agricultural land sustainability amidst the rapid conversion of land to non-agricultural uses. The findings indicate that, although significant regulatory efforts are in place, ongoing land conversion remains a major challenge. The Indramayu Regency Government continues to address this issue through policies involving various stakeholders, including the central government, local government, private sector, and communities. This research provides important insights into the effectiveness of these policies in achieving long-term food security goals.

Keyword: policy; land protection; food security; land conversion; Indramayu Regency; PLP2B.

Corresponding Author: Habdul Manan

E-mail: wiraangkasa01@gmail.com



INTRODUCTION

Indonesia is an agrarian country where the majority of its population works in the agricultural sector, which is one of the main economic sectors that provides jobs and supports the country's economy. However, in recent years, there has been a shift in the economic structure with the growth of the industrial and service sectors. With fertile agricultural land supported by a tropical climate, rainfall, and rivers that flood agricultural areas, the land becomes highly fertile. In addition to the tropical climate, Indonesia also has diverse topography from lowlands to mountains, providing a variety of soil types with different characteristics that, with proper management, can be used as fertile agricultural land (Dharmawan et al., 2023; Setyawan, Lee, & Prawitasari, 2019; Sihombing & Nugraha, 2025).

In another context, land is a vital resource whose use depends on its allocation, such as: 1) Agricultural land as the foundation of the agricultural sector, producing various crops; 2) land for housing and settlements; 3) land for industry and infrastructure; 4) land for nature conservation and ecosystem preservation; 5) land for tourist parks; 6) land for energy and mining. In line with land quality, Arsyad (2008) explains that quality land is characterized by its ability to produce agricultural products. Pressure on agricultural land is increasing due to its limited availability, caused by: 1) conversion of agricultural land due to population growth, urbanization, and infrastructure development; 2) degradation of agricultural land from overexploitation; 3) allocation of land for industry, plantations, and other projects; 4) land used for infrastructure development and food needs. According to research, Puspasari, Anneke (2012) explains that most land is converted for infrastructure development, housing, energy needs, mining, and commercial industrial estates.

Based on data from the Ministry of Agriculture, Indonesia's agricultural sector has shown positive performance, with significant economic growth and improved farmers' welfare (Arifah & Kim, 2022; Arifin et al., 2019; Siregar et al., 2024; Wahyono, Hasanah, Parmawati, & Wong, 2023). In January–August 2025, agricultural commodity exports increased by 38.25%, national rice production reached 33.19 million tons of GKG in January–November 2025, and the NTP (Farmer Exchange Rate) rose to 124.36 in September 2025, up 0.63%.

The agricultural sector is also the largest absorber of labor in Indonesia, adding 850,000 workers between August 2024 and February 2025, and is referred to as the "backbone" of the national economy. Key indicators of the sector's performance include: 1) an increase in agriculture, forestry, and fisheries exports by 38.25% to USD 4.57 billion in January–August 2025; 2) economic growth in the agricultural sector as the "backbone" of the national economy, contributing positively to Indonesia's economy; 3) national rice production reaching 33.19 million tons of GKG in January–November 2025, up 12.62% from the previous year; 4) improved farmer welfare, with the national NTP rising to 124.36 in September 2025, up 0.63% from the previous month; 5) job creation, as the sector absorbed an additional 850,000 workers between August 2024 and February 2025. The main policies and strategies are: 1) in the downstream strategy, the Ministry of Agriculture encourages increased export added value, revival of industry, strengthening of the local economy, and job creation; 2) the government's commitment to national food security by ensuring a rice surplus without imports; 3) strengthening of Ministry of Agriculture data sourced only from BPS, Bulog, and USDA for accuracy and transparency.

Along with development dynamics, at the end of the 1980s, there was significant conversion of land to non-agricultural uses, especially on Java Island, where land-use conflicts were more intense than on other islands due to limited food-crop agricultural land amid rising demand driven by regional economic growth. If not addressed, the sustainability of the agricultural sector cannot be maintained (Nasoetion, L.I., and E. Rustiadi, 1990). With investor involvement, land conversion is hard to avoid, necessitating a reorientation of agricultural development vision, anticipatory strategic steps, and a more comprehensive understanding of agricultural land conversion (Rusastra, Wayan I., et al., 2001).

Even though agricultural land makes a significant contribution, rice remains a basic need in the long term, so rice production is a core policy in agricultural development. Rice commodities are inseparable from rice fields on Java Island, which support national rice production—a key role evident during rice self-sufficiency in 1984, when it accounted for more than 62% of total national production. Its role remains substantial today, contributing no less than 50% of national rice (Mubyarto, 1977). Java Island continues to support national rice self-sufficiency despite massive land conversion; as of 2023, it still contributes 52.5% to national rice production. Over 41 years since self-sufficiency in 1984, Java Island's contribution to national rice has remained no less than 50%, solidifying its status as a national rice barn.

Over time, rice production on Java Island in 2023 reached 28.35 million tons of GKG, accounting for 52.5% of the national total of 53.98 million tons. Rice production outside Java

Island (all provinces outside Java) was 25.63 million tons, or 47.5% of the national total. This data highlights Java Island's significant contribution to national food needs, though the total slightly decreased from the previous year.

The data is calculated from total rice production on Java Island: West Java Province (9,140,039.20 tons of GKG), Central Java Province (9,084,107.53 tons), East Java Province (9,710,661.33 tons), D.I. Yogyakarta (534,113.69 tons), and Banten Province (1,686,483.29 tons), divided by the national total of 53.98 million tons of GKG. The percentage outside Java is derived by subtracting Java Island production from the national total and dividing by the national total. The 2023 national rice production of 53.98 million tons of GKG converts to 31.10 million tons of milled rice, based on BPS Indonesia data.

Rice production data for Java Island in 2023 from the Central Statistics Agency (BPS) shows decreases in harvest area and production in several provinces compared to the previous year, due to land conversion and climatic factors, such as: 1) West Java Province: harvest area of 1.58 million hectares with production of around 9.10 million tons of GKG in 2023; a 6.84% decrease in harvest area in 2024 compared to 2023. 2) Central Java Province: rice production of 9.08 million tons of GKG in 2023, down 2.91% from 9.36 million tons in 2022; harvest area decreased by 2.86%. 3) East Java Province: slight production increase to 9.71 million tons of GKG in 2023, up 1.93% from 2022, but facing high land conversion threats. 4) D.I. Yogyakarta: rice production of 534,113.69 tons of GKG in 2023, down 4.91% (27.59 thousand tons) from 561.70 thousand tons in 2022; harvest area and production figures are fixed. 5) Banten Province: rice production of 1,686,483.29 tons of GKG in 2023, down 5.71% (102.10 thousand tons) from 1.79 million tons in 2022; harvest area and production figures are fixed.

Overall, despite annual fluctuations, long-term trends show land conversion as a primary driver of challenges in maintaining rice production capacity on Java Island. Regarding rice production in each region, Anonymous (2002) explains that production capacity is determined by three factors: 1) the rate of rice field conversion; 2) extensification programs; 3) intensification programs through technology development.

Based on data from the Central Statistics Agency (BPS) and official documents from the Directorate General of Agricultural Infrastructure and Facilities (Ministry of Agriculture) on rice fields in Java Island in 2023: 1) total LBS (raw rice field) area on Java Island is 5,341,394.21 ha, down 1,362,263 ha; 2) West Java Province: 1,583,656.28 ha of LBS, with around 592,717 ha converted; 3) Central Java Province: 1,642,761.23 ha of LBS, with around 62,193 ha converted; 4) East Java Province: 1,698,083.31 ha of LBS, with around 659,200 ha converted; 5) D.I. Yogyakarta: 105,693.66 ha of rice fields, with around 2,153 ha converted; 6) Banten Province: 311,199.73 ha of LBS, with around 46,000 ha converted.

The extent of rice field conversion on Java Island—with study results from Pakpahan et al. (1993)—shows Java Island at 1,362,263 ha/year, West Java Province at 592,717 ha/year, Central Java Province at 62,193 ha/year, East Java Province with the largest at 659,200 ha/year, D.I. Yogyakarta the smallest at 2,153 ha/year, and Banten Province at 46,000 ha/year.

Agricultural land conversion on Java Island impacts food security; despite government efforts to protect rice fields, conversion remains a challenge to food availability.

Meanwhile, the positive impacts for farmers selling rice fields, as explained by Wijaya, Irawan, and Farid (2000), include the ability to purchase larger new land (even if distant), improved quality of life through better housing, increased non-land assets or savings, and enhanced human resources via education funding from land sale proceeds. The impact of agricultural land conversion on Java Island as a food center was recognized by Sir Stamford Raffles (1918), quoted in Arifin B. (2007), noting Java's vast agricultural land producing rice as a staple, prominently during the 1984 self-sufficiency program (63.12% of national production). Shrinking rice fields do not necessarily reduce production, as land area and productivity determine output.

The development dynamics on Java Island since the 1980s, including increased agricultural land conservation in the 1990s, show that conversion has a significant, cumulative impact on rice production capacity (Hakim C., 1989), leading to reduced harvest areas and overall production volume through 2023. The impacts are: 1) rice fields as the main production base, so land loss directly reduces capacity cumulatively across years; 2) conversion often targets fertile, well-irrigated land, causing permanent production loss; 3) as a national rice barn, Java Island's high conversion rate threatens self-sufficiency and food security at regional and national levels; 4) indirect impacts include environmental damage, reduced water catchment areas, erosion, flooding, and drought.

From data on converted land, particularly rice fields shifting to other uses, central and regional governments must pay attention, as Adjid, D.A. (1985) explains that Indonesia experienced a leveling off in 1985, making rice field area maintenance crucial for food needs. Moreover, as a developing country with relatively low land productivity, Indonesia requires ample land supported by agricultural technology innovations for large-scale production. Nationally, new land development occurs outside Java, but at high cost and risk of failure.

Agricultural land conversion in Java, especially West Java Province, surged in the 1990s due to infrastructure, population growth, and industrial development. Data from the BPS of West Java Province shows 1.58 million hectares of rice fields in 2023, with conversions for housing (52.22%), industry (26.44%), offices (5.80%), and other uses; most conversions occur in rural areas where rice fields predominate. Conversions are concentrated in northern coastal West Java Province (Kustiawan, 1997), used for housing (39%), industry (35%), and other purposes—often in rice production centers like Indramayu Regency, West Java Province, affecting national rice supply.

Indramayu Regency is one of the main and largest rice production centers in West Java Province, even called a "national rice barn" in Indonesia. Data and programs indicate dynamic rice farming in Indramayu Regency, with productivity increases, modernization, and regional development efforts. However, rice production is affected by natural disasters or extreme weather; in 2023, events caused an overall decline in West Java Province production. Indramayu Regency spans 204,011 ha, with 125,442 ha of LBS; GKP (harvested dry grain)

production was 1.76 million tons in 2021 (average productivity 5.8 tons/ha), 1.79 million tons in 2022 (6.0 tons/ha), 1.67 million tons in 2023 (6.2 tons/ha), and 1.70 million tons in 2024 (6.6 tons/ha).

Indramayu Regency is one of West Java Province's largest rice barns, mostly lowlands with technical irrigation suitable for rice cultivation (Ichdayati & Sari, 2018; Paiman, Ardiyanta, Ansar, Effendy, & Sumbodo, 2020; “The Fantasy of National Rice Barn and Reality of Farmers in Indramayu,” 2023). Obstacles include agricultural land function changes from farming (rice fields, fields, gardens, moors) to non-agricultural uses (housing, industry, roads, trade, ponds), converting productive land to non-farming uses. Converted land in Indramayu Regency was 6,691.71 ha in 2022, 14,872.33 ha in 2023, and 12,388.96 ha in 2024.

Agricultural land area in Indramayu Regency was 252,021 ha in 2021, 245,329.29 ha in 2022, 230,456.96 ha in 2023, and 218,068 ha in 2024—indicating 47,261.29 ha converted between 2021 and 2024.

Agricultural land conversion in Indramayu Regency is rising due to its strategic location for non-agricultural development. To prevent uncontrolled conversion, government policies are essential. Law No. 41 of 2009 on PLP2B protects LP2B (sustainable food agriculture land) from conversion, ensuring sustainability through land-use regulation, landowner incentives, violator sanctions, and cooperation among central/regional governments, private sector, and communities.

The central government enforces LP2B protection via zoning, farmer incentives, law enforcement, and education. Local governments implement sustainable practices through spatial planning, conservation, and management. Indramayu Regency Regulation No. 1 of 2011 governs infrastructure-related conversions, setting permit procedures and compensation.

Indramayu Regency's regulations align with national policies to safeguard agricultural land. The regency adapts them via tailored rules, farmer empowerment, and land-use enforcement, with stakeholder cooperation, monitoring, and evaluations for effective PLP2B implementation. Challenges persist, including development pressures and leadership inconsistencies, affecting policy effectiveness.

In summary, although central and regional regulations provide a framework for protecting agricultural land, challenges like development-driven conversion and limited community participation hinder full success. Nonetheless, strengthening governance, incentives, and farmer empowerment are essential for sustainable agricultural land and food security in the region.

The author identifies and formulates the following key research problems: (1) How is the implementation of the PLP2B policy in Indramayu Regency? (2) How can the PLP2B policy be effectively implemented in Indramayu Regency? (3) What strategies can make the PLP2B policy more effective in Indramayu Regency? The research objectives are to describe and analyze PLP2B policy implementation, assess its effectiveness, and propose improved strategies. This study offers practical benefits (deeper understanding, priority actions,

evidence-based strategies, monitoring contributions) and academic benefits (new knowledge on PLP2B, reference for future research), ultimately enhancing policy effectiveness.

METHOD

This research employed a qualitative approach that produced descriptive data in the form of spoken or written words from observed behavior (Melong, Lexi J., 2007). The method involved studying research objects where the researcher served as the key instrument, with triangulation for data collection, inductive analysis, and emphasis on meaning rather than generalization. The approach investigated social phenomena through detailed reports from respondents' perspectives.

Source triangulation checked data validity by comparing information from multiple relevant informants. This study applied triangulation by cross-verifying interviews with respondents, significant others, and observations, ensuring data credibility.

The research adopted a phenomenological approach, with the researcher observing natural field phenomena. Data sources included subjects' experiences, collected via in-depth interviews, observations, videos, and field notes.

The research locus was Jumbleng Village, Losarang District, Indramayu Regency, West Java Province. The focus examined PLP2B implementation, agricultural land conversion by investors, community and local government responses, and conversion consequences.

Data collection used observation, interviews, and documentation, combined through triangulation. Interviews involved direct communication with informants for detailed information (Ulber Silalahi, 2012). Documentation drew from records at the Indramayu Regency office and related agencies. Triangulation integrated these techniques and sources, including nine key informants: three Indramayu Regency officials, two sub-district/village officials, one Losarang District farmer group chair, one investor, and two PLP2B experts.

Informants were selected via purposive sampling based on research criteria (Sugiyono, 2012). Nine informants included five officials, one investor, one farmer group chair, and two experts, providing comprehensive insights into PLP2B policy implementation.

Data analysis followed a descriptive approach, systematically processing interview transcripts, field notes, and materials (Neong Muhajir & Rake Sarasin, 1996). It proceeded in three stages: 1) data reduction through summarization, coding, and theme clustering; 2) data presentation in simplified, meaningful forms to identify patterns; 3) conclusion drawing, refined iteratively from initial field findings.

Data validity relied on source triangulation, re-interviewing significant others close to respondents to verify information (Suyanto & Sutinah, 2008). This ensured the reasonableness and consistency of conclusions.

RESULTS AND DISCUSSION

Overview of Research Objects

Indramayu Regency is one of the national rice production centers that has the largest raw rice field area in West Java. The regional economic structure is still dominated by the agricultural sector of food crops, especially rice. Based on the regional spatial planning document, the Sustainable Food Agricultural Land (LP2B) area was determined to ensure the sustainability of food production and reduce the rate of land conversion. In the last five years, Indramayu has faced quite high development pressure, especially from the residential, industrial and infrastructure sectors.

The Indramayu Regency Government has established a policy for Sustainable Food Agricultural Land Protection (PLP2B) through a Regional Regulation on the determination of Sustainable Food Agricultural Land (LP2B). This policy aims to maintain the availability of productive rice fields in the long term and prevent uncontrolled land conversion.

Research Results

The results of the study show that the implementation of PLP2B in Indramayu Regency has not been fully effective. The level of farmers' understanding of PLP2B is still low, the supervision of land conversion is not optimal, and land data is not fully up-to-date. However, farmers tend to support the determination of LP2B if it is accompanied by incentives, irrigation certainty, and support for production facilities. Overall, PLP2B has the potential to maintain the sustainability of agricultural land, but its success is highly dependent on the commitment of local governments and farmer participation.

Implementation of PLP2B Policy

- a. Planning and Determination of LP2B. The results of the study show that the planning process has been carried out through: 1) Identification and inventory of agricultural land using spatial maps from BPN and the Agriculture Office. 2) Determination of an LP2B area of $\pm 84,684$ Ha in the Regional Regulation on PLP2B. 3) Integration of LP2B into the RTRW so that it has binding legal force. 4) However, some village officials said that: a) LP2B mapping is not entirely in accordance with the actual conditions in the field. b) There are still productive rice fields that have not been included in the LP2B map.
- b. The implementation of PLP2B is carried out through: 1) Control of land use transfer permits through the OSS system. 2) Cross-sector coordination, especially Bappeda, the Agriculture Office, DPMPTSP, and the Public Works Office. 3) Conversion restrictions on technically irrigated rice fields. In the field, there is still a weak supervision of PLP2B, namely: 1) Limited supervisory human resources. 2) Lack of reports from the public. 3) There is still a "neglect" of small-scale non-agricultural development.
- c. Supervision and Law Enforcement Patterns. The study found that: 1) Supervision is incidental, not periodic. 2) There have been no cases of PLP2B violations that have been subject to strict legal sanctions. 3) The government prioritizes a persuasive

approach rather than action. This causes some people to consider the PLP2B rules "less firm".

Supporting Factors for PLP2B Implementation

Based on the results of interviews and observations, supporting factors include: a) Commitment of the Regional Government. The existence of the PLP2B Regional Regulation is a strong legal basis for the protection of agricultural land. b) Availability of Land Spatial Data. Digitized LP2B data makes it easier to identify land use changes. c) The presence of Farmer Groups and Gapoktan. Farmer groups are active in providing information on land change and promoting sustainable agriculture. d) Government Assistance Program for Farmers. Such as land optimization programs, mechanization, and superior seed assistance that increase productivity.

Factors Inhibiting the Implementation of PLP2B

Several inhibiting factors were found, as follows: 1) High Development Pressure. The need for land for housing, roads and industry is driving the acceleration of conversion. 2) The economic value of non-agricultural land is higher. Farmers tend to sell land, especially in areas near city centers. 3) Weak Supervision and Enforcement of Sanctions. There are no strict sanctions for violators who make compliance low. 4) Lack of Socialization of PLP2B. Many villagers do not fully understand the prohibition of land conversion in the LP2B area. 5) The Problem of Fragmentation of Land Ownership. The increasingly narrow land makes it difficult for farmers to maintain their farming business.

Impact of PLP2B Implementation

- a. The impact on the Land Conversion Rate, are: 1) In Sukagumiwang District, conversion decreased after the determination of LP2B. 2) In Indramayu District, rice field shrinkage is still high due to settlement expansion. 3) In Jatibarang District, PLP2B can hold back some conversions but not completely. Overall, PLP2B reduces conversion rates but has not been able to handle them thoroughly.
- b. The impact on agricultural productivity is: 1) Rice productivity in the LP2B area tends to increase due to the intensification program. 2) Farmers gain easier access to agricultural machinery (alsintan). 3) However, some farmers complain about water limitations in the dry season.
- c. The impact on farmers' welfare is: 1) Certainty of land status provides a sense of security to invest in farming. 2) However, the prohibition of selling or transferring land functions makes some farmers feel economically limited.
- d. The summary of the research results is: 1) The implementation of PLP2B has been running, but it is not optimal, especially in the aspect of supervision and law enforcement. 2) Supporting factors come from government commitment, spatial data and support from farmer groups. 3) The main inhibiting factors are high development pressure and weak sanctions. 4) The impact of PLP2B can be seen in the slowdown in land conversion and increased productivity, although it is not significant in some areas.

Discussion

The results of the study show that the implementation of PLP2B in Indramayu Regency has been running, but its effectiveness is still limited. Theoretically, the PLP2B policy is in line with the concept of Sustainable Land Use Planning, which is the protection of agricultural land through regulatory instruments, incentives and supervision. However, its implementation is still influenced by structural factors such as the importance of regional economic development, weak supervision of land conversion and lack of community participation in land use control, the influence of the implementation is: 1) The implementation is still influenced by structural factors such as the interests of regional economic development. The implementation of Sustainable Food Agricultural Land Protection (PLP2B) in Indramayu Regency is still facing significant challenges, especially due to the strong encouragement of regional economic development. Regional economic interests are often a factor influencing space utilization decisions, so agricultural land protection policies do not always run in accordance with ideal regulations. In the context of regional development, the government seeks to increase economic growth through the development of infrastructure, industrial estates, trade centers, and other strategic projects. However, some of these development programs have the potential to require a large area of land and ultimately cause pressure on agricultural land that should be protected. This pressure shows that there is a tug-of-war between economic goals and food land protection goals. In addition, the selling value of land in areas experiencing economic growth tends to increase, thus triggering interest in land conversion by owners and investors. This condition indicates that economic interests are often the dominant variable that also affects the effectiveness of the implementation of PLP2B.

As a result, some strategic agricultural land is still vulnerable to conversion of functions, even though it has been listed in the Spatial Plan and LP2B plan. 2) Weak supervision of land conversion transfer. Weak supervision of land conversion is one of the main factors that cause the implementation of PLP2B to not run effectively. Although regulations regarding the protection of agricultural land have been established, the monitoring mechanism in the field is often not optimal, both in terms of coordination between agencies, the number of human resources, and the consistency of the application of sanctions. This not yet strong supervision opens up space for gradual land conversion, either through the transfer of functions that are not recorded, developments that exceed spatial planning provisions, and land purchase and sale transactions that do not follow LP2B procedures. In addition, the weak control of local governments is also influenced by the limited supervision budget, the lack of up-to-date land mapping, and the lack of a technology-based reporting and monitoring system. 3) Lack of community participation in land use control. The lack of community participation in land use control is one of the factors that weakens the effectiveness of PLP2B implementation. The community, especially farmers as parties who directly interact with the land, have not been fully involved in the process of planning, monitoring and supervising land transfer.

This low involvement is often caused by a lack of information about the LP2B rules, uneven government socialization, and limited space for public consultation in the preparation

and revision of spatial planning. The lack of community involvement is also triggered by low awareness of the importance of maintaining long-term agricultural land, especially in the midst of economic pressure and high land selling values. As a result, people sometimes do not report land use violations or even participate in the process of buying and selling agricultural land that has the potential to be converted. Sustainable Food Agricultural Land Protection (PLP2B) in Indramayu Regency.

Analysis of PLP2B Policy Implementation

The implementation of the Sustainable Food Agricultural Land Protection (PLP2B) policy in Indramayu Regency shows a fairly progressive effort in maintaining the existence of agricultural land, especially productive rice fields. As one of the national rice barns, Indramayu has a great responsibility for provincial and national food stability; therefore, the existence of PLP2B regulations is an important aspect in preventing rampant land conversion, which continues to increase along with economic development, urbanization, and infrastructure expansion.

Conceptually, the implementation of PLP2B is a form of applying the principle of sustainable land-use planning, namely land-use regulation that considers ecological, economic, and social sustainability. In Indramayu Regency, regulations related to PLP2B have been outlined in the Regional Regulation on the Protection of Sustainable Food Agricultural Land. This Regional Regulation stipulates LP2B areas, mechanisms for controlling land-use conversion, and sanction instruments. However, the results of the study indicate that implementation remains partial. On the one hand, the government has identified land, compiled LP2B maps, and integrated them into the RTRW document; on the other hand, control and supervision mechanisms are still not optimal. This condition reflects an imbalance between policy outputs (regulatory products) and policy outcomes (effectiveness in the field). In other words, regulations are in place, but institutional capacity and supervisory apparatus are not yet fully prepared.

In the context of George Edward III's policy implementation theory, communication, resources, implementers' disposition, and bureaucratic structure strongly influence policy success. In the case of Indramayu Regency, communication factors and bureaucratic structures function relatively well, whereas resource availability and implementer commitment remain critical issues. Limited supervisory human resources, budget constraints, and insufficient public socialization cause the PLP2B policy to operate below its optimal potential.

Effectiveness of LP2B Area Determination and Mapping

The normative determination of the LP2B area in Indramayu Regency is in accordance with the guidelines from the Ministry of Agriculture, namely through the identification of productive rice fields, feasibility analysis and the determination of priority areas. However, the results of the study show that there is a difference between the LP2B map and the factual conditions in the field. Several village officials and farmer groups said that there are still productive rice fields that are not included in the LP2B map, while some lands that are no longer active as rice fields are still listed in the LP2B. This discrepancy shows that the mapping

process is not completely based on actual data (ground check), spatial accuracy is very important considering that the LP2B map has legal implications. Mapping errors can have an impact on: 1) Potential conflicts between the community and the government. 2) Unclear land status. 3) Difficulties in supervising land conversion transfer. 4) Decrease in public trust in the PLP2B policy.

In addition, spatial data updates are still not carried out regularly, in the context of very fast land use dynamics, especially in urban areas such as Indramayu, Jatibarang, and Sindang Districts, periodic map updates are an urgent need. When static data is used in a dynamic environment, policy effectiveness becomes low. A comparison between the theoretical concept of PLP2B which demands data accuracy and update with empirical conditions in Indramayu Regency shows that the technical implementation is not in line with regulatory demands. To increase the effectiveness of the LP2B designation, it is necessary to remapping was carried out based on a more modern geographic information system (GIS) and involved the participation of village communities.

Land Function Transfer Control between Regulatory Ideals and Field Reality

Land conversion control is the core of PLP2B, based on the results of the research, the mechanism for controlling land conversion licensing in Indramayu Regency has been carried out through the OSS (Online Single Submission) system and a verification process by the Investment Office and the Agriculture Office. Normatively, land that has been designated as LP2B may not be converted except for national strategic interests. However, reality shows that there are some cases of conversion that occur without permission or through non-strict licensing. Factors that cause weak control include: 1) High development pressure (housing, shophouses, industry). 2) Much higher selling value of non-agricultural land. 3) Weak integration across sectors in land use control. 4) Lack of field supervision and reporting from the community. 5) Pragmatic decision-making at the village level. 6) This phenomenon shows the existence of moral hazard at the grassroots level, where some village officials or landowners prioritize short-term economic benefits over the sustainability of agricultural land. This contrasts with PLP2B's goal of emphasizing long-term protection.

From the perspective of land resource economics theory, land conversion occurs due to high economic rents in the non-agricultural sector. If agricultural land does not provide economic value equivalent to commercial land, the conversion trend will remain high. This is a structural weakness PLP2B, the policy prohibits the transfer of functions, but does not provide large enough economic incentives for farmers to survive.

Supporting and Inhibiting Factors for PLP2B Implementation

The results of the study identified several supporting factors that were sufficient to help the implementation of PLP2B in Indramayu, including: 1) the commitment of the local government through the preparation of the Regional Regulation and the formation of the PLP2B technical team. 2) Availability of digitized spatial data. 3) The active role of farmer groups as government partners in land identification and monitoring. 4) Agricultural intensification programs, such as assistance with alsintan and superior seeds. However, the

inhibiting factors were found to be more dominant, namely: 1) High development pressure due to economic and population growth. 2) Lack of socialization so that the community does not fully understand the limitations of LP2B. 3) Weak enforcement of sanctions, where violations are often not processed legally. 4) Fragmentation of ownership land, making it difficult to consolidate land. 5) Limited budget for monitoring and updating data.

This analysis shows a gap between policy design (which is ideal) and implementation capacity (which is realistic). In other words, the PLP2B policy in Indramayu Regency is still in the compliance struggle stage, namely the struggle to achieve the optimal level of compliance.

The Impact of PLP2B Implementation on Agricultural Land and Food Security

In general, the implementation of PLP2B in Indramayu Regency has a positive impact although it is still limited. In some sub-districts with low conversion pressure, PLP2B is able to stabilize the area of rice fields. However, in more urban sub-districts, land shrinkage still occurs. In terms of agricultural productivity, several LP2B areas show a trend of increasing crop yields due to government assistance. However, this increase has not been able to compensate for land shrinkage in urban areas. At the socio-economic level, PLP2B provides a sense of security for farmers to continue to manage their rice fields because there is legal certainty.

However, some farmers consider PLP2B to limit their economic opportunities, especially for those who want to sell their land. From the perspective of regional food security, PLP2B plays an important role in maintaining the rice supply of Indramayu Regency as the main producer of West Java. If conversion is left unchecked, Indramayu Regency has the potential to experience a significant decline in production in the next 10-20 years.

Policy Implications and Recommendations

Based on the discussion, the implementation of PLP2B in Indramayu Regency needs to be strengthened through: 1) Remapping of LP2B based on actual data and involving villages and communities. 2) Scheduled surveillance, not incidental, by increasing the number of supervisors. 3) Strengthening cross-sector coordination, especially with DPMPTSP, Bappeda and PU. 4) Providing economic incentives for LP2B farmers, such as tax relief and capital support. 5) Enforcement of strict sanctions against violations, so that policies have a deterrent effect. 6) Development of a more profitable agricultural business model, so that farmers are not tempted to sell their land.

Indramayu Regency is a Regency that has potential in various sectors, ranging from agriculture, fisheries, energy and tourism, with potential in various sectors, of course many investors are interested in this, so that it will be able to affect the sustainability of food production, to overcome this Indramayu Regency Government's efforts in PLP2B, are 1) Preparation of Regulations and Planning. 2) Land Determination and Data Collection. 3) Land Conversion Control. 4) Empowerment and Assistance of Farmers. 5) Incentives for Farmers and Landowners. 6) Agricultural Infrastructure Development. 7) Community Socialization and Education. So that the results (Outcome) of the efforts carried out through the Implementation

of PLP2B in Indramayu Regency, the positive results are: a) The maintenance of most productive agricultural land. b) Increased productivity in several LP2B areas. c) Increasing awareness of village officials and farmers. d) Availability of more accurate land data. The negative results of the efforts made by the Indramayu Regency Government against PLP2B are: a) Land conversion is still occurring. b) The interests of economic development often shift the priority of PLP2B. c) Public participation is still low. d) Irrigation infrastructure is not evenly distributed. e) The implementation of incentives has not been optimal.

The implementation of PLP2B in Indramayu Regency has shown concrete efforts through regulations, land data collection, supervision and empowerment of farmers as a form of commitment to maintain food security, control land conversion and ensure the sustainability of the agricultural sector. However, the results are still mixed, namely that some land has been successfully protected, but the threat of conversion remains high due to economic development pressures, weak supervision and lack of community participation.

CONCLUSION

The implementation of the PLP2B (Sustainable Food Agricultural Land Protection) policy in Indramayu Regency proved suboptimal, hindered by inaccurate LP2B area mapping, ineffective land conversion controls, weak supervision, and low public compliance stemming from insufficient sanctions, despite efforts to integrate it into regional regulations and spatial planning. While it slowed rice field shrinkage and offered legal certainty for farmers, persistent urban development pressures, fragmented land ownership, inadequate economic incentives, and high non-agricultural demand limited its impact on long-term food security. Strengthening institutions, enhancing enforcement, updating spatial data regularly, and providing robust economic incentives for farmers are essential for improvement. Future research could quantitatively model the economic trade-offs of PLP2B enforcement versus development gains across Indonesian regencies to inform scalable policy reforms.

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