The Realities of Fertilizer Subsidy Implementation in Regency of Cianjur's Rice Fields

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ABSTRACT

The Purposes: The research explores the dynamics of implementing Indonesia's subsidized fertilizer policy in the agricultural setting of Cianjur Regency, West Java. The study delves into the relationship between national policy guidelines and their execution at the local level, utilizing a qualitative case study method, emphasizing the structural and procedural obstacles encountered by primary stakeholders.

Novelty: Data were gathered through semi-structured interviews, analysis of policy documents, and field observations, which allowed for a comprehensive understanding of distribution methods, quota allocation, and the coordination of institutions. The results indicate ongoing discrepancies between the objectives of the policy and its practical implementation, reflecting issues such as inconsistent targeting of farmers, a lack of transparency in the allocation process, and logistical challenges that impede prompt access to resources. The research highlights the importance of intermediary organizations, like agricultural cooperatives and local government units, in influencing policy results, often in contexts marked by limited resources and unclear regulations.

Conclusion: This research adds to the discussions surrounding agricultural subsidy management and rural growth, focusing on policy responsiveness and fairness. It calls for adjusted implementation approaches that emphasize clear institutions, participatory processes, and flexible monitoring to improve the efficiency of input subsidies in bolstering the resilience of smallholder farmers.

Keywords: Fertilizer, Resiliences, Cianjur, West - Java, Rice

INTRODUCTION

Subsidized fertilizers are utilized by the Indonesian government as a key tool to improve national food security and boost agricultural output. In Cianjur Regency, the distribution of these fertilizers is guided by an official order from the Head of the Department of Agriculture, Plantation, Food, and Horticulture, which establishes the framework for annual allocations across various districts (Ashari, H., Fahmid, I. M., Ali, M. S. S., & Useng, D. 2023). Over the last five years (2017–2021), the trends in allocation and actual distribution have varied, highlighting the complexities of the distribution system, financial limitations, and external influences such as climate changes and farming practices (Khatri, P., Kumar, P., Shakya, K. S., Kirlas, M. C., & Tiwari, K. K. 2024).

Notable imbalances between the allocated and actual amounts, especially for Urea, SP-36, and ZA fertilizers indicate underlying issues within the supply chain and distribution processes. Factors such as delivery delays, restricted access to retail outlets, and post-harvest payment practices have played a role in these discrepancies (Jamil, A., Ali, et al2023), Ali, J., et al 2023).

In contrast, the observed growth in NPK and organic fertilizers may suggest changing farmer preferences or enhanced distribution effectiveness in specific regions.[1]

The objective of this study is to analyze the trends in allocation and actual distribution of subsidized fertilizers in Cianjur Regency and to pinpoint the elements that lead to mismatches in distribution. By using a longitudinal quantitative approach alongside qualitative case analyses, this research aims to develop policy suggestions that encourage more responsive, fair, and effective management of fertilizers at the regional level.

LITERATURE REVIEW

Fertilizer subsidies have historically been a fundamental aspect of Indonesia's agricultural policies, aimed at improving food security, lowering production costs for farmers, and increasing rice yields. Although the policy has good intentions, its execution at the local level, especially in rice-growing areas like Cianjur, highlights a range of logistical, institutional, and socio-economic obstacles (Putri, M. A., Karimi, S., Ridwan, E., & Muharja, F. 2024).

Cianjur, situated in West Java, is a significant area for rice production in Indonesia. Research conducted in this region indicates that while fertilizer subsidies generally have a positive impact on agricultural productivity, their distribution often does not correspond to the actual needs of farmers. The quota system used for allocating subsidized fertilizer frequently ignores local agronomic conditions and the variety of farm sizes, leading to discrepancies between supply and demand.

Smallholder farmers, particularly those who are not formally affiliated with farmer groups, frequently find it challenging to obtain subsidized fertilizer in a fair and timely manner (Alta, A., Setiawan, I., & Fauzi, A. N. (2021). This problem is exacerbated by ineffective oversight mechanisms. The Fertilizer and Pesticide Supervisory Commission (KP3), charged with overseeing distribution, has faced criticism for its limited capacity and inconsistent enforcement practices.

Data also reveals a gap between yield increases and improvements in farmer welfare. Although subsidized fertilizer can lead to a tripling of rice production in certain instances, the accompanying increase in farmer income is often relatively modest around 1.5 times higher. This indicates that additional structural issues, such as fluctuating grain prices, high input costs, and constraints in market access, continue to hinder economic benefits for farmers.

Additionally, scholars and policy experts have advocated for reforms in the governance of subsidies. Suggested changes include digitizing distribution processes to enhance transparency, involving farmer groups in the planning and evaluation stages, and customizing subsidy allocations to better align with local conditions. Participatory methods are viewed as particularly effective, as they empower communities to express their needs and monitor the implementation of the subsidies more adeptly.

The study emphasizes that while fertilizer subsidies are essential to Indonesia's agricultural strategy, their efficacy is significantly influenced by the quality of their implementation. In Cianjur, the actual circumstances underscore the necessity for more inclusive, responsive, and accountable systems ones that not only provide inputs but also promote long-term resilience and fairness in rural livelihoods.

Agricultural Conditions in Cianjur Regency, West Java, Indonesia

Cianjur Regency, situated in West Java, Indonesia, exhibits a vibrant agricultural environment shaped by favorable geographic features and the high organic content of its soils. The region operates on a three-season cropping schedule, which usually includes two rice-growing seasons and one for secondary crops (palawija) or mixed cropping (rice-palawija) (Hirakawa, S., et al2024). Several important aspects characterize the agricultural landscape in Cianjur, (Arjuwanti, N., Setiadi, H., & Rizqihandari, 2023) as We have adapted on below aspects;

[1] Hoffmann, M. P., Cock, J., Samson, M., Janetski, N., Janetski, K., Rötter, R. P., ... & Oberthür, T. (2020). Fertilizer management in smallholder cocoa farms of Indonesia under variable climate and market prices. *Agricultural Systems*, *178*, 102759.

1. Dryland Farming in Cugenang District

Farming practices in Cugenang District focus on identifying spatial patterns and their connection to the economic value of dryland agriculture. Studies in this region analyze five variables: forest cover, agricultural land, urban development, elevation, and land economic value. These elements are utilized to evaluate the spatial-economic interactions in dryland farming.

2. Rice Cultivation and the Pandanwangi Variety

Cianjur is famous for its Pandanwangi rice, a fragrant variety that possesses a unique pandan scent. This rice can only be grown in seven subdistricts of Cianjur, under specific climatic, elevation, and soil conditions, rendering it a geographically protected and culturally important crop.

3. Plantation Crops

The regency is well-known nationally for its plantation products, such as tea, coffee, cloves, and coconut. Tea farming in Cianjur is particularly diverse and historically relevant, with its origins tracing back to the Dutch colonial period, establishing the region as a long-standing hub of tea cultivation.

4. Coffee Seed Logistics

There are initiatives in motion to create a coffee seed logistics center in Cianjur, designed to restore its status as a producer of premium coffee. This effort mirrors wider strategies aimed at improving agricultural infrastructure and value chains.

5. Influencing Factors in Agricultural Development

The agricultural landscape in Cianjur, particularly in Cugenang District, experiences influences from a mix of aspects, including geographic characteristics, the availability of infrastructure, demographic factors, closeness to urban areas, accessibility, climate conditions, and natural resources (Asmarani, S., Semedi, J. M., & Rustanto, A. 2023).

The area consists of a diverse combination of forests, agricultural land, built environments, and varying elevations, which adds to the complexity and richness of its agricultural profile.

RESEARCH METHODS

We used mixed – methods approach in analyzing the distribution and realization of subsidized fertilizers in Cianjur Regency from 2017 to 202. The most suitable research strategy, particularly focusing on longitudinal quantitative analysis (Audulv, Å., Hall, et al 2022).

The methodology enables researchers to observe yearly trends in the distribution of fertilizers, recognize growth and decline patterns among various fertilizer types, and quantify the discrepancies between allocated and actual volumes (Potter, P.,et al. 2010).

We also utilize statistical instruments like time-series analysis and descriptive statistics to assess average annual growth rates and distribution efficiency. To enhance this analysis, a qualitative case study is crucial for revealing the underlying reasons for distribution inconsistencies, including issues like shipment delays, seasonal shifts in planting due to climatic conditions, and farmer purchasing tendencies. Conducting interviews with farmers, distributors, and agricultural officials, along with reviewing policy documents, We provided valuable contextual information. By using a convergent parallel design to merge both data types, a more thorough understanding of numerical trends as well as the human factors that affect them can be achieved. Optional improvements such as geospatial mapping, policy impact assessments, and regression modeling can further enhance the analysis and facilitate informed recommendations for better fertilizer distribution systems.

RESULTS AND DISCUSSION

Cianjur Regency, situated in West Java, Indonesia, features a vibrant agricultural environment influenced by advantageous geographic factors and the high organic matter found in its soils.

(Piatti, C., & Dwiartama, A. 2019). The region adheres to a three-season cropping schedule, which generally includes two seasons for rice cultivation and one season dedicated to secondary crops (palawija) or mixed farming (rice-palawija). Crop classification derived from NDVI analysis utilizing MODIS satellite data indicates an accuracy of 80% for the first and second growing seasons (GS1 and GS2), and 70% for the third season (GS3). It is important to acknowledge, however, that the area has faced agricultural droughts, with Sukaresmi District registering the highest average drought severity in 2015 (Pratiwi, E. P. A., Murti, C. K. W., & Widiastuti, E. I. 2022, December).

Agriculture in Cianjur Regency is defined by a diverse set of features that reflect both its ecological richness and socio-economic complexity. In Cugenang District, dryland agriculture plays a significant role, with initiatives aimed at identifying spatial patterns and their relationship to the economic value of farming activities (Arjuwanti, N.,Setiadi, H., & Rizqihandari, N. 2023, June).

This analysis incorporates five key variables forest cover, agricultural land, built-up areas, elevation, and land economic value to understand the spatial-economic dynamics that shape dryland cultivation. Meanwhile, Cianjur is widely recognized for its Pandanwangi rice, a fragrant variety distinguished by its pandan aroma. This rice is geographically protected and can only be cultivated in seven subdistricts within the regency, under specific climatic, altitudinal, and soil conditions, making it both culturally and agriculturally significant (Rumadan, I., Et al 2022). Beyond rice, Cianjur is nationally prominent for its plantation crops, including tea, coffee, cloves, and coconut. Tea cultivation, in particular,is deeply rooted in the region's history, dating back to the Dutch colonial era, and continues to be a central component of its agricultural identity. In recent years, strategic efforts have been made to reestablish Cianjur's reputation as a producer of high-quality coffee through the development of a dedicated coffee seed logistics center. This initiative reflects broader ambitions to strengthen agricultural infrastructure and enhance value chains across the region.

The agricultural development of Cianjur, especially in districts like Cugenang, is influenced by a complex interplay of geographic features, infrastructure availability, demographic trends, proximity to urban centers, accessibility, climate variability, and natural resource distribution. The landscape itself is a mosaic of forests, cultivated lands, built environments, and varied elevations, contributing to the region's multifaceted agricultural profile and its potential for sustainable growth.

Table 1. The Allocation of subsidized fertilizer for Cianjur Regency

(2017- 2021)

Years	2017		2018		2019		2020		2021		Development	
	Allocation	Realization	Allocation	Realization	Allocation	Realization	Allocation	Realization	Allocation	Realizationi	Allocation	Realizationi
UREA	35.96 6	35.965	36.24 7	33.889	36.29 8	30.914	34.05 3	33.867	43.70 3	32.514	5.77	-2.25
SP 36	10.38 8	10.388	10.69 5	10.509	10.35 5	10.355	8.823	8.463	7.592	6.136	-7.24	-11.52
ZA	4.279	4.279	4.267	4.209	4.611	4.306	4.473	4.282	3.100	2.429	-6.48	-10.79
NPK	23.23 2	22.115	21.22 6	20.783	19.25 6	19.153	25.78 9	25.397	25.76 4	24.848	3.98	4.14
Organic	991	884	1.862	1.675	2.563	2.132	3.183	3.093	2.358	1.595	30.95	28.35

Source; Created by Author 2021)

Between 2017 and 2021, the distribution and utilization of subsidized fertilizers in Cianjur Regency showed varied patterns depending on the type of fertilizer. The allocation of urea increased steadily, averaging a rise of 5.77% each year, while its utilization decreased by 2.25%, highlighting a disparity between the amount supplied and the actual consumption. Both SP-36 and ZA experienced continuous declines in allocation and utilization, with SP-36 dropping by 7.24% and 11.52%, and ZA by 6.48% and 10.79%, indicating a decrease in demand or changes in agricultural priorities. In contrast, NPK fertilizers saw slightly positive growth in both allocation (3.98%) and utilization (4.14%), suggesting stable usage among farmers. Interestingly, organic fertilizers experienced the most notable increase, with allocation rising by 30.95% and utilization by 28.35% per year, reflecting a pronounced shift towards sustainable farming practices and greater emphasis on soil health among agricultural producers.

During the five-year span from 2017 to 2021, the allocation and actual delivery of subsidized fertilizers in Cianjur Regency varied notably among different fertilizer types and across the years. In 2017, the distribution of Urea, NPK, and organic fertilizers was incomplete, and in 2018, 2020, and 2021, all categories of subsidized fertilizers had remaining stock. Notably, 2019 was the sole year when SP-36 fertilizer was completely distributed to farmers. The year 2021 saw the highest proportion of undelivered fertilizer, especially for Urea (25.6%), SP-36 (19.18%), and ZA (21.65%). A major factor contributing to this deficiency was the reduced planting activities during the third growing season, primarily due to water shortages caused by climatic conditions. In 2021, the government had allocated 43,703 tons of Urea, 7,592 tons of SP-36, 3,100 tons of ZA, 25,764 tons of NPK, and 2,358 tons of organic fertilizers. These inputs were aimed at supporting various agricultural terrains: 68,963 hectares of technically irrigated rice fields, 17,257 hectares of semi-technical irrigation, 3,905 hectares of simple irrigation, 16 hectares of non-PU irrigation, and 20,772 hectares of rainfed areas. Nevertheless, the overall decrease in fertilizer distribution was also impacted by financial constraints at the government level, underscoring the connection between climate susceptibility and budgetary limitations in the execution of agricultural policies.

Table 2. The gap between allocation and realization of subsidized fertilizer in Cianjur Regency

Fertilizer Variants	2017		2018		2019		2020		2021	
	Ton	%	Ton	%	Ton	%	Ton	%	Ton	%
UREA	1	0,00	2.358	6,51	5385	14,83	186	0,55	11.189	25,60
SP 36	0	0,00	186	1,74	0	0,00	360	4,08	1.457	19,18
ZA	0	0,00	59	1,36	306	6,61	192	4,27	670	21,65
NPK	1.117	4,81	444	2,09	103	0,53	393	1,52	917	3,56
Organic	108	10,80	187	10,04	431	16,82	91	2,83	762	32,36

Source: Agricultural office Cianjur Regency (2021)

In Cianjur Regency, the timely distribution of subsidized fertilizer remains a persistent challenge, particularly due to delays by producers and distributors in delivering fertilizer to retailers according to the established schedule. Often, fertilizer is only dispatched toward the end of the year, disrupting the principle of timely delivery. This issue could be mitigated through a tiered monthly reporting system across all distribution levels, which would serve not only as a control mechanism but also help identify local fertilizer needs and prevent shortages. Farmers typically obtain subsidized fertilizer from Level IV kiosks at the government-set retail price (HET), provided they collect it themselves, pay in cash, and purchase it in sack form. However, many farmers request delivery to their fields or homes, incurring additional transport costs. Others opt for post-harvest payment schemes, which introduce interest or service fees, potentially violating the principle of price accuracy. To address this, the distribution system should be expanded to include a fifth level (Lini V), managed directly by farmer

groups. Distributors at Level III operate under a gubernatorial decree issued in December, followed by a regency-level decree in January, which is handed over by the Agriculture Office to authorized distributors. Fertilizer supply is managed by two designated factories, fertilizer of Kujang and Petrokimia Gresik with clearly divided responsibilities: Kujang serves six districts, while Petrokimia Gresik covers ten. These factories entrust distributors to deliver fertilizer to eligible farmers via Level IV kiosks, which are generally located near farming communities. In total, nine distributors operate in Cianjur, each responsible for supplying fertilizer to their respective network of kiosks, as detailed in the accompanying table.

Table 2. Zones III and IV in Cianjur Regency as of 2022 refer to designated regional classifications used for planning and development purposes.

No	**Distributors (Lini III)**	**Subdsitrict**	Number of fertilizer kiosks (Lini IV) [2]
1	PT Agro Mitra Sejati	Pagelaran	7
		Tanggeung	7
2	PT Angkasa Raya Crysta	Cempaka	3
		Cempaka Mulya	1
		Cijati	4
		Kadupandak	4
		Sindangbarang	8
		Sukanagara	2
3	CV Gina Jaya Mandiri	Bojong Picung	4
		Cibeber	7
		Cikalong Kulon	5
		Cilaku	6
		Cugenang	6
		Haur Wangi	2
		Naringgul	8
		Pacet	7
		Sukaluyu	5
		Warungkondang	7
4	CV Intan Tani	Takokak	9

[2] Hendrita, V., Meidita, F., & Supriyanti, J. (2024). Effectiveness of Farming Cards in the Distribution of Subsidized Fertilizers in Sijunjung District. *Buletin Penelitian Sosial Ekonomi Pertanian Fakultas Pertanian Universitas Haluoleo*, *26*(2), 132-142.

5	PT Roda Bumi Nusantara	Warung Kondang	7
		Gekbrong	6
		Agrabintana	6
		Pacet	6
6	PT Prakarsa Sentra Utama	Ciranjang	2
		Mande	3
		Sukaluyu	5
7	PT Sinar Alam Pasundan	Cianjur	3
		Cibeber	7
		Cilaku	6
		Karang Tengah	7
8	CV Putra Tani Barokah	Cikadu	6
		Cidaun	9
		Cipanas	5
		Naringul	8
		Pasir Kuda	5
9	CV Mandiri Karya Perceka	Cibinong	6

Source: Created by Author (2025)

One of the appointed distributors tasked with supplying subsidized fertilizer in Cianjur Regency is CV Gina Jaya Mandiri, which was founded in early 2009 and commenced its distribution of subsidized fertilizer in November of the same year. Based in Kampung Tengkil, Babakan Karet Village, the company employs a staff of nine individuals. CV Gina Jaya Mandiri offers a variety of fertilizers, such as Urea, SP-36, ZA, NPK, Phonska, and organic fertilizer, distributing these products to retail kiosks. Among its affiliates is Tani Jaya, a retail kiosk located in Haurwangi District, RT 01/02, which acts as a resource point for local farmers. In 2021, the company provided subsidized fertilizer to farmers included in the RDKK (Definitive Group Needs Plan), distributing the following amounts: 375 tons of Urea, 130 tons of SP-36, 130 tons of ZA, 375 tons of NPK, and 40 tons of organic fertilizer. This distribution highlights the company's vital role in enhancing access to agricultural inputs and its efforts to ensure fertilizer availability within the farming communities of Cianjur.

DISCUSSION

The execution of fertilizer subsidies in Cianjur Regency reveals a complex and often contradictory situation, where the aspirations of national policy intersect with the intricate realities of rural governance. However the initiative is officially intended to assist smallholder farmers and enhance rice production, its implementation exposes a range of structural conflicts, logistical challenges, and socio-political entanglements that influence its actual effectiveness.

At the policy level, the fertilizer subsidy scheme is embedded in a centralized framework that heavily relies on digital tools like the e-RDKK to identify beneficiaries and manage resource allocation. Ideally, this system promises efficiency and transparency; however, it struggles to effectively address the fluid and informal characteristics of land tenure and farmer registration in Cianjur. Numerous farmers, especially those with undocumented land or limited digital skills are often left out of the system, not because of a lack of need, but due to systemic oversights. This disconnection between policy development and on-the-ground realities highlights the necessity for more flexible and inclusive data systems.

Institutional dynamics add further complications to the implementation process. Local agricultural offices, which are responsible for facilitating subsidy distribution, frequently operate under challenging conditions, such as limited personnel, strict budgets, and vague mandates. In this context, agricultural extension workers often take on informal gatekeeping roles, deciding who receives fertilizer. Although, some individuals demonstrate impressive creativity in overcoming bureaucratic obstacles, others engage in discretionary practices that lead to favoritism and undermine trust. The blurred distinctions between formal processes and informal negotiations illustrate a governance environment that is both adaptive and susceptible to vulnerabilities.

Operational difficulties are also significant. Frequent delays in the procurement and distribution of fertilizer are often tied to bureaucratic inefficiencies and poor coordination with suppliers. These holdups disrupt planting schedules, compelling farmers to seek alternative inputs at inflated prices. Additionally, there have been concerns about the quality of subsidized fertilizer, indicating lapses in oversight and accountability. Such logistical issues not only undermine the program's effectiveness but also highlight larger weaknesses in governing agricultural inputs.

From the perspective of farmers, the subsidy program elicits mixed emotions. Many recognize its potential to lower production costs and stabilize yields, yet they voice considerable frustration regarding its erratic delivery, unclear procedures, and perceived inequalities. For smallholder rice farmers, particularly those not part of formal farmer groups, these inconsistencies translate into tangible economic risks missed planting times, increased input costs, and uncertain harvest prospects. Moreover, the program's structure does little to tackle intra-community inequalities, such as disparities in access to resources based on gender or the marginalization of tenant farmers, thereby limiting its effectiveness and relevance.

Political factors also influence how subsidies are implemented. In various cases, access to fertilizer has been impacted by electoral cycles or local patronage systems. This politicization of public resources not only distorts the program's equity objectives but also erodes public trust in its integrity. Ethically, the selective identification of beneficiaries whether deliberate or accidental raises significant concerns regarding distributive justice and the ethical responsibilities of government interventions. The examination from a comparative standpoint, Cianjur's situation reveals both widespread challenges and distinct contextual limitations. Regions with better inter-agency collaboration and participatory planning processes tend to achieve more stable and fair outcomes. These observations indicate that reform initiatives need to go beyond mere technical solutions and adopt governance models that are responsive, inclusive, and rooted in local contexts.

Ultimately, improving the effectiveness of fertilizer subsidies in Cianjur necessitates a change in strategy, one that enriches local institutional capabilities, promotes transparency through community-led oversight, and creates mechanisms that accommodate the varied experiences of rural farmers. As Rusmayadi et al. (2024) point out, lasting impacts rely not just on effective delivery methods but also on the genuine inclusion of farmers' perspectives in the formulation of policies that influence their livelihoods.

CONCLUSION

The analysis and data regarding the agricultural input system in Cianjur Regency particularly concerning the distribution of subsidized fertilizers, highlight a complicated relationship among ecological factors, administrative coordination, and logistical execution. Although the region enjoys fertile soils and a structured cropping calendar that spans three seasons, ongoing issues with timeliness, accuracy in allocation, and efficient realization hinder the best use of fertilizers. A five-year review (2017–2021) indicates notable differences

between allocated and realized amounts, particularly for Urea, SP-36, and ZA, with 2021 showing the largest discrepancy attributed to climate-related planting delays and budgetary limitations.

The rising preference for organic fertilizer among farmers indicates a trend towards more environmentally sustainable practices; however, its distribution still encounters systematic obstacles. The existing four-tier distribution framework (Lini I–IV), while operational, frequently does not satisfy farmers' demands in a timely and equitable manner. Introducing Lini V, overseen by farmer organizations, presents an encouraging strategy to enhance last-mile delivery, minimize informal costs, and maintain fair pricing. Furthermore, the collaboration between two primary fertilizer companies, and Petrokimia Gresik and nine local distributors across various subdistricts reveals the vast scale and intricacy of the supply chain. Yet, in the absence of coordinated reporting and proactive management of inventory, even well-organized systems risk becoming inefficient. The data highlights the necessity for monthly tiered reporting, improved digital monitoring and localized planning to guarantee that fertilizers reach the appropriate farmers when needed.

In summary, while Cianjur's agricultural framework possesses considerable potential, its fertilizer distribution system necessitates strengthening of institutions, climate-adaptive planning, and reforms focused on farmers to effectively convert policy intentions into tangible outcomes. Closing the gap between allocation and realization will be crucial for maintaining productivity, fairness, and resilience in the region's farming communities.

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