


Implementation of the Subsidized Fertilizer Distribution Program through Farmer Cards in Galung Village, Barru District, Barru Regency

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Article Info	ABSTRACT
<p>Keywords: Farmer Card, subsidized fertilizer, program implementation, farmers, Village</p>	<p>This study aims to analyze the implementation of the subsidized fertilizer distribution program through Farmer Cards in Galung Village, Barru District, Barru Regency. This program is one of the government's efforts to digitize fertilizer subsidy distribution to make it more targeted, transparent, and efficient. The research method used was a qualitative approach, with data collection techniques through in-depth interviews, field observations, and documentation. The results indicate that the implementation of the Farmer Card program in Galung Village still faces various obstacles, including farmers' limited understanding of card use, uneven card distribution, and technical issues with the electronic system used. Nevertheless, this program is considered capable of providing a new direction for more controlled and data-driven fertilizer subsidy distribution. This study recommends the need for more extensive outreach, increased farmer capacity in using Farmer Cards, and improvements to the support system to achieve equitable and sustainable subsidized fertilizer distribution.</p>
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INTRODUCTION

The subsidized fertilizer distribution program is a strategic policy of the Indonesian government to maintain national food security through support for the agricultural sector. Fertilizer subsidies are provided to ensure farmers obtain fertilizer at affordable prices, enabling optimal agricultural cultivation. However, in its implementation, this program still faces significant challenges, such as misuse of distribution, inaccurate targeting, and irregular recipient data. Therefore, the government has begun implementing the Farmer Card system as a solution to digitize fertilizer subsidies (Ministry of Agriculture, 2023).

The Farmer Card is an electronic card containing data on farmers, land, and subsidized fertilizer needs obtained through the Definitive Group Needs Plan (RDKK). Through this system, farmers can only purchase subsidized fertilizer according to the designated allocation, and transactions are conducted cashlessly through the banking system. This system is expected to improve data accuracy and efficiency in subsidized fertilizer distribution. According to Prasetyo (2022), digitization through the Farmer Card represents a form of data-driven public service transformation that is more accountable and integrated.

On the other hand, implementation at the regional level, particularly in rural areas such as Galung Village, Barru District, remains challenging. Many farmers do not fully understand the function and how to utilize the Farmer Card. Furthermore, limited technological infrastructure and fertilizer availability are often major obstacles to the program's success. This aligns with findings by Susanto and Mulyani (2023), who stated that regional implementation of the Farmer Card requires ongoing technical support and education.

The Farmer Card program is part of agricultural sector reforms expected to create a fair and transparent distribution system. However, in practice, discrepancies between the RDKK data and actual needs on the ground have created new problems. Many farmers feel they are not receiving fertilizer allocations that meet their actual needs. This demonstrates a gap between central government policy and implementation on the ground (Nasution, 2023). Therefore, a comprehensive evaluation of the program's implementation, particularly in Galung Village, is necessary.



Figure 1 Example of the Farmer Card used in Galung Village

Galung Village is an area with significant agricultural potential in Barru Regency. The main commodities grown by farmers in this village include rice, corn, and seasonal vegetables. The subsidized fertilizer distribution program through the Farmer Card (Kartu Tani) has been implemented in this village since 2021. However, its effectiveness remains questionable among the community and village government. Many farmers still complain about delays in distribution and insufficient fertilizer quotas. This highlights the importance of an in-depth study of this program's implementation in Galung Village.

According to data from the Barru Regency Agriculture Office (2024), there are approximately 327 farmers registered in the Galung Village RDKK (Regional Farmer Card), but only about 70% have received and are actively using the Farmer Card. The remainder are still in the application process or are unaware of the registration process. This fact reinforces the argument that unequal access to this subsidy program persists. The system is not yet fully integrated and lacks technical assistance are key inhibiting factors.

The Ministry of Agriculture (2023) emphasized that the Farmer Card is part of a closed-loop digital agriculture system aimed at accelerating technology adoption among farmers. However, its effectiveness depends heavily on regional readiness, particularly in terms of farmer digital literacy and supporting infrastructure. Therefore, the implementation of this program needs to be adapted to the social, economic, and cultural conditions of the local community. Not all regions have the same capacity to optimally absorb and implement digital systems.

Research conducted by Maulana et al. (2023) shows that the successful implementation of the Farmer Card (Kartu Tani) depends heavily on synergy between local governments, agricultural extension workers, distributing banks, and farmer groups. Lack of coordination between implementing actors can lead to confusion among farmers, the beneficiaries. Therefore, a collaborative approach needs to be prioritized in the implementation of this technology-based subsidy program.

Other obstacles frequently encountered in the Farmer Card program are limited internet connections in villages and the lack of EDC (Electronic Data Capture) machines at retail kiosks. In Galung Village itself, there are only two official retail kiosks serving dozens of farmer groups, leading to long queues and delays in distribution. Furthermore, some farmers lack bank accounts, a key prerequisite for using the Farmer Card. These issues highlight the importance of inclusion.

Financial management in subsidy policies (Yuliana, 2024).

Public policy implementation depends not only on the accuracy of program design but also on institutional capacity and community support. In the context of the Farmer Card, its effectiveness depends heavily on clear information, simple implementation mechanisms, and consistent monitoring and evaluation. As stated by Wahyuni and Darmawan (2022), the success of digital-based policies requires a bottom-up approach to address real community needs. The involvement of agricultural extension workers at the village level is a crucial factor in promoting this program. However, in many areas, including Galung Village, the number of active extension workers is still limited and their scope of duties is very broad. This slows down the process of educating farmers about the use of the Farmer Card. However, according to Ministry of Agriculture regulations, extension workers have a strategic role in assisting farmer groups from data collection to fertilizer distribution (Ministry of Agriculture Regulation No. 10/2023).

The disparity in fertilizer distribution between large and small farmers also creates social jealousy at the local level. Some farmers feel that certain individuals with better understanding of the system are monopolizing fertilizer allocations. This creates potential conflict and undermines trust in the subsidy program. According to Putra and Sari (2023), one of the main risks of digitizing public services is unequal access due to differences in user capacity and knowledge.

The Farmer Card program is essentially an innovation to combat the frequent practices of data manipulation and subsidy misappropriation. However, if implemented poorly, this program can actually increase the administrative burden on farmers. This demonstrates the importance of evidence-based evaluation at every stage of policy implementation, particularly in sectors that involve grassroots communities as key actors (Rahman, 2024).

As an agricultural village, Galung Village requires an adaptive approach to implementing the subsidy program. The roles of the village head, farmer group leaders, and village financial institutions must be optimized to support the program's smooth implementation. Collaboration between local actors can be key to the successful implementation of technology-based policies such as the Farmer Card. Therefore, this study aims to examine in-depth the implementation of the Subsidized Fertilizer Distribution

Program through the Farmer Card in Galung Village, Barru District, Barru Regency. The research focuses on identifying supporting and inhibiting factors for the program, as well as formulating strategies to improve its implementation effectiveness. The results are expected to contribute to the formulation of agricultural policies that are fairer and more responsive to farmers' needs.

This study also aims to strengthen the literature on digital-based agricultural policies, which is currently limited at the village level. By understanding the reality of program implementation on the ground, this research is expected to provide a comprehensive picture of the challenges and opportunities of using the Farmer Card as a tool for distributing fertilizer subsidies in Indonesia.

METHODOLOGY

This study uses a descriptive qualitative approach to provide an in-depth description of the implementation of the subsidized fertilizer distribution program through the Farmer Card (Kartu Tani) in Galung Village, Barru District, Barru Regency. This approach was chosen because it can reveal social realities, the experiences of implementing actors, and community perceptions of the policy, which cannot be measured quantitatively.

The research location was Galung Village, one of the villages with a significant number of farmers using the Farmer Card (Kartu Tani) in Barru Regency. The location was selected purposively, considering that this village has been implementing the Kartu Tani program for more than two years and has interesting dynamics in its implementation.

The data sources in this study consisted of primary and secondary data. Primary data were obtained through in-depth interviews, direct observation, and documentation. Interviews were conducted with various key informants, including farmers receiving subsidized fertilizer, farmer group leaders, field extension officers (PPL), fertilizer retail kiosk owners, village officials, and representatives from the Barru Regency Agriculture Office. The interviews were semi-structured with flexible question guides to allow for broader information exploration.

Observation techniques were used to directly observe the Farmer Card transaction process at retail kiosks, the fertilizer distribution process, and extension and outreach activities conducted with farmers. Additionally, documentation was obtained from RDKK data archives, a summary of fertilizer distribution realization, the number of farmer cards issued, and policy regulations related to program implementation. Secondary data was obtained from various sources, such as official government reports, Ministry of Agriculture regulations, scientific journal articles, and regional agricultural statistics. These sources were used to strengthen the analysis and compare field findings with applicable national or regional policies.

Informants were selected using a purposive sampling method, selecting informants deemed to have knowledge, experience, or direct involvement in the Farmer Card program. The number of informants was determined based on the principle of information sufficiency (saturation), which occurs when the data obtained no longer reveals significant new findings. Data analysis was conducted through the stages of data reduction, data presentation, and

conclusion drawing, as outlined by Miles, Huberman, and Saldaña (2014). Data collected from interviews, observations, and documentation were coded and categorized to identify patterns, themes, and relationships among the data.

To support the analysis process, this study utilized ATLAS.ti version 24 software. This software was used to manage interview quotes, organize codes and categories, and construct a thematic network that visually represents the interrelationships between findings. The coding process was conducted inductively while adhering to the established conceptual framework. Using ATLAS.ti, researchers were able to conduct in-depth exploration of the relationships between concepts and construct a visual representation of the dynamics of the Farmer Card program's implementation at the local level. Data validity was tested using source and technique triangulation techniques, comparing interview results with direct observations and relevant official documents.

This study also upheld ethical research principles by obtaining informed consent from all informants, maintaining the confidentiality of informants' identities, and ensuring that the data was used solely for academic purposes. Each informant was given the opportunity to refuse or discontinue participation in the interview process at any time. This method is expected to provide a comprehensive, factual, and in-depth picture of how the Farmer Card program is implemented at the village level, as well as uncovering the challenges faced in achieving targeted and sustainable subsidized fertilizer distribution.

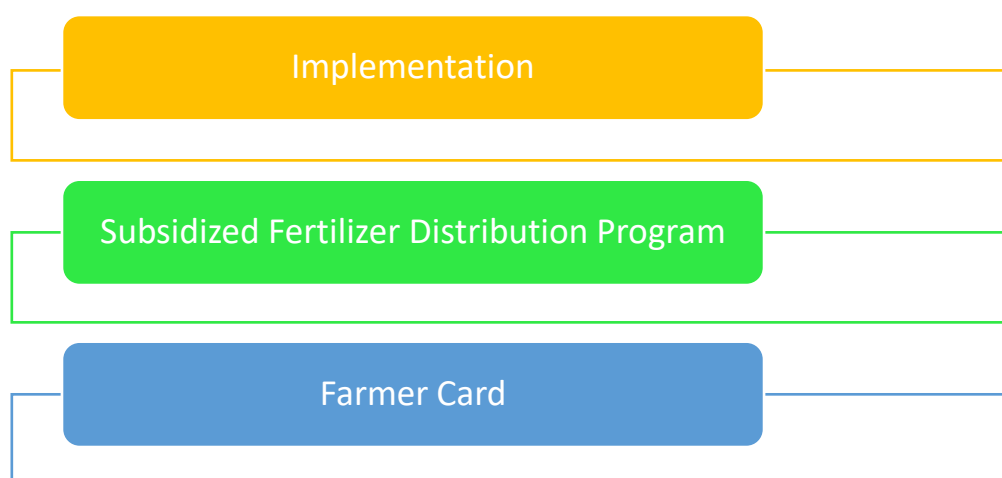


Figure 2. Thinking framework diagram

RESULTS AND DISCUSSION

Research Results

The subsidized fertilizer distribution program through the Farmer Card in Galung Village has been implemented since 2021 as part of the central government's policy to digitize the agricultural subsidy distribution process. This program aims to ensure that subsidized fertilizer is well-targeted, given only to farmers who meet the requirements and are registered in the e-RDKK (Definitive Group Needs Plan) system. Implementation in Galung Village shows

that there are still various technical and social challenges that affect the effectiveness of the program.

Most farmers in Galung Village are aware of the existence of the Farmer Card program, but their understanding of its usage flow is still limited. The process of activating the card, using the EDC machine at fertilizer kiosks, and data verification often become obstacles in the field. The researcher's observations show that only a small number of farmers truly understand that subsidized fertilizer can only be purchased using the Farmer Card. This indicates a lack of continuous socialization from the implementing parties.

In an interview conducted on July 10, 2025, the Secretary of Galung Village, Mr. Muh.Wahyudin,S.M., stated that the implementation of the Farmer Card program in his village still faces various administrative obstacles. He said: "There are still many farmers who do not have a Farmer Card due to slow data collection and an unsynchronized e-RDCK system. We at the village government have tried to help, but we need support from the agriculture office and the distributing bank so that everything can run smoothly."

According to Mr. Muh.Wahyudin,S.M., the village has conducted several coordination meetings with farmer groups and agricultural extension workers to speed up the farmer data entry process. However, the limited number of assistants and the farmers' low digital literacy have become their own challenges. Some farmers find it difficult to access information about their card status, thus hampering the distribution of subsidized fertilizer. He also emphasized the need for a simpler system that farmers can directly access.

In an interview on July 30, 2025, the Head of the Tunas Harapan Farmer Group, Mr. Musakkar, stated that the Farmer Card program has indeed brought changes in the way fertilizer subsidies are distributed, but the benefits have not been felt evenly by all members. He explained: "There are still farmers in our group who cannot redeem their fertilizer because their cards are inactive or their names are not in the system, even though they have been farming for years. We also face problems when the EDC machines in kiosks experience errors or slow connections, which delays the purchase process. In urgent situations, farmers are forced to buy non-subsidized fertilizer at a higher price, which increases production costs." He added that better coordination between kiosks, farmer groups, and local government is necessary to ensure that distribution runs smoothly, especially during the planting season.

Meanwhile, in an interview with the Head of the Aju Coloe Farmer Group, Mr. Muh.Syukur, on July 12, 2025, it was revealed that although the Farmer Card program is considered a good breakthrough, its implementation has not been optimal. He stated: "Many farmers in our group complain because fertilizer is hard to obtain, and some still cannot use their cards until now. In the end, they buy more expensive non-subsidized fertilizer." This statement highlights the reality in the field that digital systems do not always guarantee speed and ease of access.

Furthermore, Mr. Muh.Syukur mentioned that in the last planting season, about 30% of his members did not receive their subsidized fertilizer allocation on time. This affected crop quality and yield. According to him, some fertilizer retailers in the village also had difficulty operating the EDC machines due to network disruptions. This is quite a serious problem

because fertilizer distribution becomes inefficient. He suggested that the government provide an alternative backup distribution mechanism if the Farmer Card system cannot be used.

In addition to technical problems, data accuracy in the RDKK is the main obstacle in program implementation. Some farmers who have been active for a long time were not included in the recipient list, while new names who had not actively farmed appeared in the system. This shows the need for regular data updates involving local figures such as hamlet heads or farmer group leaders who better understand the real conditions of residents.

Based on the results of interviews and documentation, it is known that out of a total of about 327 farmers in Galung Village, only about 210 people have actively received and used the Farmer Card. The rest are still in the application stage or waiting for data corrections. The local Agriculture Office has suggested that farmer groups immediately revise the RDKK, but this process requires intensive assistance from extension workers and village officials.

Field observations also show that there is still resistance from some farmers to using the digital system. They feel awkward using the Farmer Card and are more comfortable with the conventional method, namely buying directly from kiosks in cash. This attitude is reinforced by the lack of training and inadequate technological support, such as stable internet networks and functioning card reader machines. Some fertilizer retailers in Galung Village also revealed that they experienced delays in receiving subsidized fertilizer supplies from distributors, especially before the planting season. This makes the process of redeeming fertilizer through the Farmer Card less than optimal. Farmers often come to kiosks only to go home empty-handed because the fertilizer is not yet available. This reduces their trust in the subsidy program.

On the other hand, the Farmer Card program actually has great potential in improving the subsidy system, which has long been prone to irregularities. Through digitalization, data on farmers, land area, and fertilizer needs can be monitored in real time. However, this system will not be effective if it is not accompanied by infrastructure and human resource readiness in the regions. The national program requires flexibility so that it can be adapted to local contexts such as in Galung Village.

In terms of supervision, it was found that fertilizer distribution control has not yet run optimally. The village government does not yet have a clear mechanism for regularly evaluating the program's effectiveness. Evaluations are only carried out when there are complaints from farmers. According to Mr. Muh.Wahyudin,S.M., a transparent reporting system is needed from retail kiosks so that the village government can also monitor distribution regularly and prepare early solutions to emerging problems.

The participation of agricultural extension workers also greatly determines the success of this program. However, in reality, in Galung Village there is only one field extension worker who must handle several villages at once. This high workload causes the farmer group assistance process to be less than optimal. In this situation, the role of the regional government is very much needed to increase the number of extension workers and strengthen synergy with villages and farmer groups.

Some young farmers who are digitally literate are actually enthusiastic about the Farmer Card. They hope this system can reduce middlemen practices and speed up the subsidy

process. However, this potential has not been well explored because there is no active involvement of the younger generation in agricultural digital training or outreach programs. If properly encouraged, young groups can become the driving force for digital agricultural transformation in the village.

From these findings, it is known that the main challenges in implementing the Farmer Card are not only technical but also structural and institutional. From the slow RDKK data validation, the farmers' unpreparedness, to the weak institutional support at the village level. Therefore, a collaborative approach involving all actors, including traditional leaders, extension workers, retailers, and the village government, is needed. Analysis from the interviews shows that most farmers feel they are not actively involved in the program planning process. They only receive information after the system is running, without having the opportunity to provide input. In fact, involving farmers from the start is very important so that the program truly meets field needs. With a participatory approach, policy implementation will be more easily accepted by the community.

The lack of digital literacy is a real obstacle in the application of the Farmer Card. The majority of farmers are not used to using electronic cards, let alone understanding a data-based system. Therefore, regular training needs to be held, not just once at the beginning. Villages can collaborate with agencies or universities to provide intensive training, especially before the planting season. From a policy perspective, this program actually has a clear and progressive direction. However, its realization in the field greatly depends on implementation consistency, data accuracy, and institutional support. Without these three aspects, the Farmer Card risks becoming a new administrative burden for farmers, not a solution. Therefore, there needs to be periodic and open policy evaluation for subsidy recipient areas.

This study found that system integration between the Farmer Card and the banking system is still needed so that the transaction process can be faster and more accurate. Some farmers admitted that they failed to buy fertilizer because their cards were not yet connected to a bank account. This problem often goes unidentified due to a lack of technical assistance. There needs to be a fast complaint system that farmers can access if they experience problems during transactions. In conclusion, Galung Village's experience in implementing the Farmer Card program can be an important lesson for other regions. The program's strength lies in its transparent, data-based system. However, its main weaknesses are unequal access to information, low digital literacy, and institutional coordination that is not yet solid. Future improvement efforts need to involve all stakeholders actively and sustainably.

ATLAS.ti analysis and Thematic Visualization

Based on the field findings described in the research results section, the qualitative data obtained through interviews, observations, and documentation were then analyzed using *Atlas.ti* software. This analysis aims to identify the main themes, group codes (coding), and map the relationships between categories that emerged from the data. Through this approach, each quotation from the informants can be systematically organized, producing a deeper understanding of the challenges, opportunities, and dynamics in the implementation of the Farmer Card program in Galung Village. The following section will present the results of the *Atlas.ti* analysis in detail, including code grouping, network views, and thematic findings relevant to the research context.

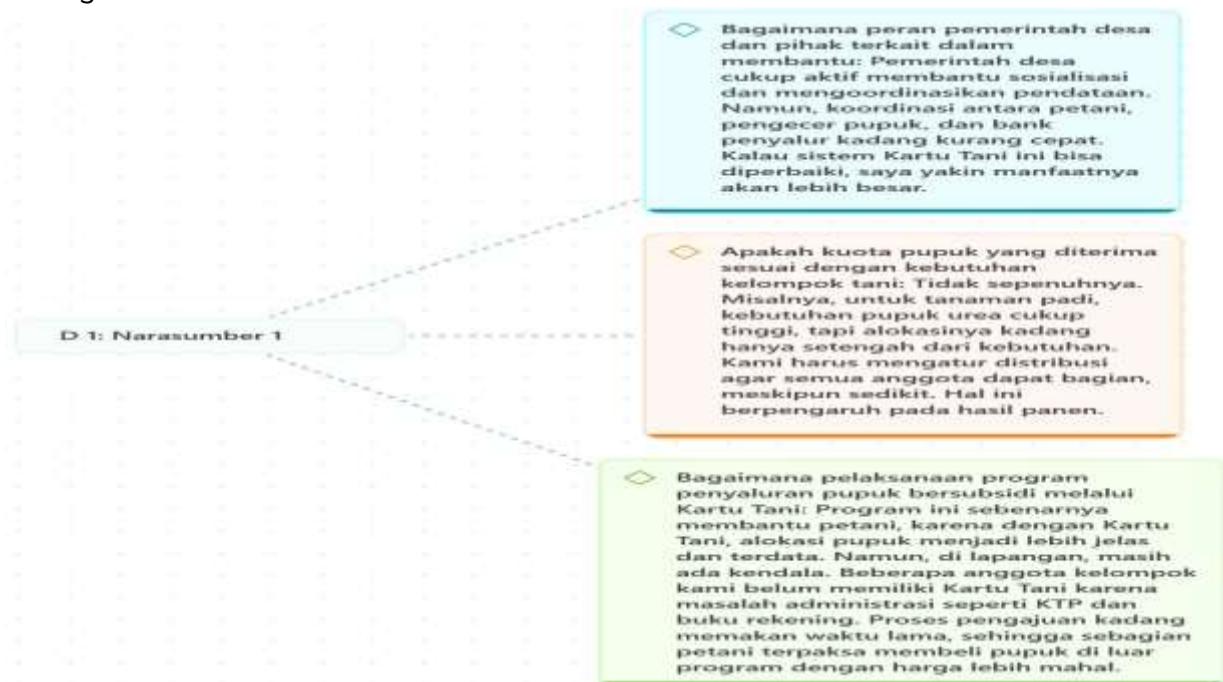


Figure 2: Visualization of the interview results with Mr. Musakkir using Atlas.ti 24

Based on the analysis using Atlas.ti of the interview transcript with Mr. Musakkir, Head of the Tunas Harapan Farmers Group, it was found that the implementation of the subsidized fertilizer distribution program through the Farmer Card (Kartu Tani) has both significant benefits and challenges. In terms of benefits, this program helps increase transparency in fertilizer allocation and streamlines data collection, facilitating oversight. However, significant obstacles remain in the field, such as some group members not having a Farmer Card due to administrative issues, such as delays in obtaining a KTP (ID card) or opening a bank account. The Farmer Card application process also tends to be lengthy, forcing some farmers to purchase fertilizer outside the program at higher prices.

Furthermore, the fertilizer quota received by farmer groups often does not match actual needs, particularly for rice, which requires large amounts of urea fertilizer. Consequently, group administrators must manage internal distribution to ensure that all members receive a limited share. This has resulted in reduced yields. On the other hand, village governments are considered quite active in assisting with outreach and data collection, but coordination

between farmers, fertilizer retailers, and distributing banks is often neither rapid nor effective. Nevertheless, farmer groups are optimistic that if the Farmer Card system is improved, the program's benefits will be even greater for increasing farmer productivity and welfare.



Figure 3. Visualization of interview results with Mr. Muh. Syukur using Atlas.ti 24

Based on the analysis using Atlas.ti of the interview transcript with the Head of the Aju Coloe Farmers Group, Mr. Muh. Syukur, it was identified that the implementation of the Farmer Card to obtain subsidized fertilizer had a positive impact, but still faced various technical and administrative challenges. Initially, many group members experienced confusion in using the Farmer Card, especially because the process had to be completed through an EDC machine at an official kiosk. This unfamiliarity led to the perception that the procedure was quite complicated. However, after brief training from the extension worker, group members' understanding and skills began to improve. However, obstacles persist, particularly related to frequent internet network disruptions during transactions, which slow down the fertilizer purchasing process.

In terms of ownership, not all group members have a Farmer Card. Approximately 20% of them are not registered in the Definitive Group Needs Plan (RDKK), which is a primary requirement for obtaining subsidized fertilizer. This situation forces some farmers to rely on purchasing fertilizer freely on the market at higher prices. Going forward, Mr. Muh. Syukur hopes that the RDKK data can be updated annually without complicated procedures, so that more farmers can participate in the program. He also hopes to have a fertilizer reserve at official kiosks to ensure timely fulfillment of fertilizer needs, especially when the Farmer Card quota has not yet been disbursed. This hope demonstrates the importance of improving the distribution system and stock management to increase the program's effectiveness.

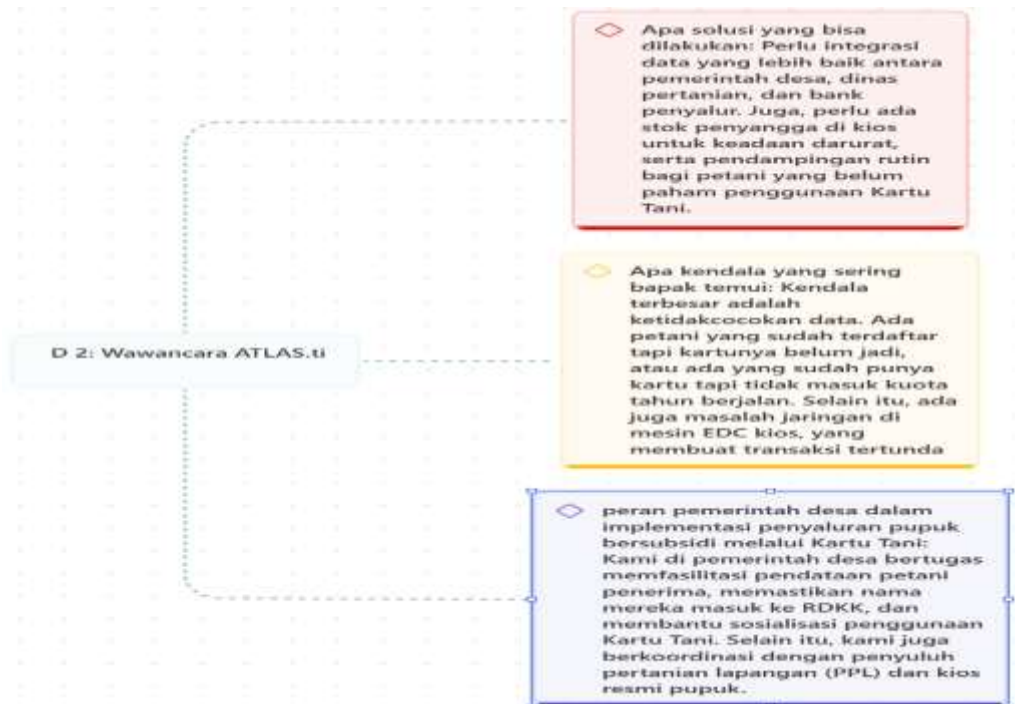


Figure 3: Visualization of the interview results with Mr. Muh. Wahyudin, S.M., using Atlas.ti
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Based on the analysis using Atlas.ti of the interview transcript with the Galung Village Secretary, Mr. Muh. Wahyudin, S.M., it was found that the village government plays a strategic role in ensuring the smooth implementation of subsidized fertilizer distribution through the Farmer Card. Their primary role includes facilitating the registration of beneficiary farmers, ensuring their names are included in the Definitive Group Needs Plan (RDKK), and assisting in the socialization process for the use of the Farmer Card within the community. Furthermore, the village government actively coordinates with agricultural extension workers (PPL) and official fertilizer kiosks to support smooth distribution.

However, implementation in the field remains beset with several obstacles. One of the biggest obstacles is data mismatches, where some farmers have registered but have not yet received a Farmer Card, or have a card but are not included in the current year's quota. Technical issues such as network disruptions at the EDC machines at official kiosks also often hamper the transaction process, preventing timely fertilizer purchases. As a solution, Mr. Muh. Wahyudin, S.M. emphasized the importance of better data integration between village governments, the agricultural office, and distributing banks to avoid information discrepancies. Furthermore, it is necessary to provide buffer stocks at official kiosks to anticipate quota delays, as well as implementing regular mentoring for farmers who are still experiencing difficulties in using the Farmer Card. This approach is expected to increase the program's effectiveness while expanding farmers' access to subsidized fertilizer in a timely and equitable manner.

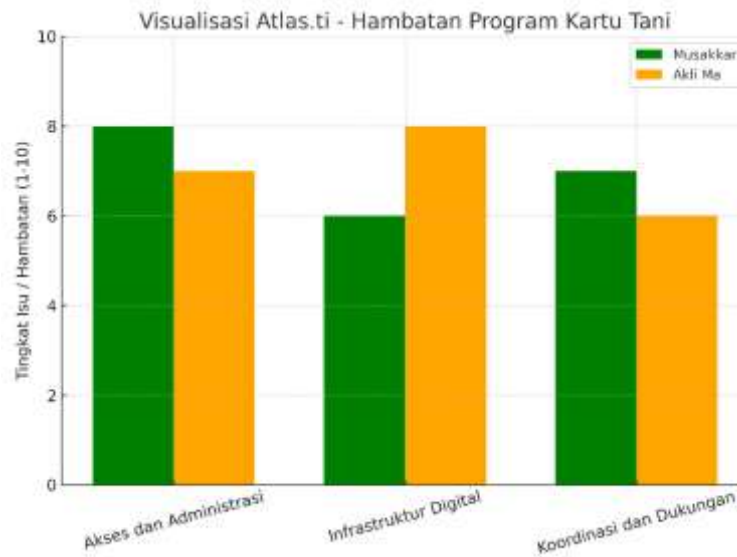


Figure 4 Comparison of Barrier Levels

This figure illustrates a comparison of the levels of barriers experienced by Mr. Musakkar and Mr. Muh. Syukur across three main categories:

- a) Access and Administration (e.g., issues with ID cards, bank books, and RDKK)
- b) Digital Infrastructure (network constraints and EDC usage)
- c) Coordination and Support (the role of village governments, retailers, and distributing banks).

Discussion

The findings in Galung Village show that the Farmer Card program, although designed to improve the accuracy and transparency of subsidized fertilizer distribution, still faces multifaceted challenges in its third year of implementation. Technical barriers such as inactive cards, EDC machine failures, and unstable internet connections undermine the program's intended efficiency. Social constraints, including limited digital literacy and reluctance among older farmers to adopt new systems, further slow adoption. These problems indicate that introducing digital reforms in rural agricultural settings requires not only infrastructure investment but also cultural adaptation strategies that address local readiness levels. Without such measures, the gap between policy design and field execution will persist, reducing program impact.

A central issue revealed in the interviews is the inaccuracy of the RDKK database, which directly determines who receives the Farmer Card and how much fertilizer they are allocated. Cases of active farmers being excluded while inactive individuals are included point to weaknesses in data verification mechanisms. This undermines farmer trust and reduces the perceived fairness of the subsidy system. In theory, the digital system should enable real-time, precise monitoring of recipients; in practice, poor synchronization between village data collection, agricultural offices, and the central system creates significant delays and errors. Continuous data validation involving local leaders could reduce mismatches and ensure timely corrections before planting seasons begin.

From an institutional perspective, coordination between stakeholders—village governments, agricultural extension workers, farmer groups, kiosks, and the distributing bank—remains insufficient. The shortage of field extension workers exacerbates the situation, as one officer is tasked with serving several villages simultaneously, limiting the support farmers receive during critical moments. The lack of a dedicated monitoring and evaluation framework means issues are addressed reactively rather than preventively. The absence of regular reporting from kiosks to the village government further hinders proactive problem-solving, leaving many challenges unresolved until they become severe enough to cause crop yield losses.

Economic implications of these inefficiencies are significant. Delays in accessing subsidized fertilizer force farmers to purchase more expensive non-subsidized alternatives, raising production costs and reducing profit margins. This is particularly detrimental during the planting season, when timing is critical for achieving optimal yields. If the Farmer Card system cannot guarantee timely fertilizer access, its economic rationale for farmers becomes weak, possibly discouraging continued participation. In some cases, farmers' reliance on informal fertilizer markets resurfaces, counteracting the program's intended goal of reducing leakage and misuse in subsidy distribution.

The program, however, has notable potential. Younger, digitally literate farmers in Galung Village view the Farmer Card as an opportunity to modernize agriculture, improve transparency, and reduce intermediary exploitation. Unfortunately, the absence of targeted digital training programs limits the role these individuals could play as local technology ambassadors. Empowering younger farmers through structured involvement could accelerate adoption among older generations, leveraging peer learning rather than relying solely on external trainers. This approach could also foster a more self-sustaining model of digital agricultural transformation in rural communities.

From a policy perspective, the Farmer Card aligns well with Indonesia's broader goals of agricultural digitalization and subsidy efficiency. However, the Galung Village case demonstrates that uniform national policies require flexibility to accommodate local realities. Infrastructure readiness, digital skill levels, and administrative capacity vary widely between regions, meaning that rigid implementation timelines may produce uneven outcomes. Allowing locally adapted mechanisms—such as alternative backup distribution channels during system downtime could protect farmers from production risks without undermining the program's integrity.

The lack of a rapid, farmer-accessible complaint mechanism also hampers the system's responsiveness. Farmers experiencing card or transaction issues often have no clear pathway to immediate resolution, causing them to miss critical fertilizer application windows. Integrating banking systems more seamlessly with the Farmer Card platform could speed up activation and transaction processes, while a centralized, real-time helpdesk service could ensure problems are addressed before they affect production cycles. Such measures would not only improve functionality but also rebuild farmer confidence in the system's reliability.

Overall, the Galung Village experience highlights that technical fixes alone will not guarantee success in agricultural digitalization. Building farmer trust, ensuring data accuracy,

strengthening institutional coordination, and providing consistent, localized training are equally critical. The Farmer Card has the potential to transform subsidy distribution into a more accountable, efficient, and equitable process. However, without addressing the identified structural, technological, and social barriers, the program risks becoming an added bureaucratic burden rather than a genuine agricultural advancement.

CONCLUSION

The implementation of the Farmer Card program in Galung Village reflects both the promise and pitfalls of agricultural digitalization. While the system offers a transparent, data-driven approach to subsidy distribution, its effectiveness is hampered by data inaccuracies, infrastructure limitations, weak institutional coordination, and low farmer digital literacy. Overcoming these barriers will require a multi-stakeholder strategy that combines technical improvements with participatory, context-sensitive approaches. Only through sustained collaboration and localized adaptation can the Farmer Card achieve its intended role as a catalyst for more efficient and equitable agricultural subsidy management.

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