

## Analysis of Farmers' Satisfaction Toward Subsidized Fertilizer Products

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### ABSTRACT

This study explores farmers' satisfaction with subsidized and non-subsidized fertilizer products from PT Pupuk Kalimantan Timur in East Kalimantan using a phenomenological qualitative approach. Data were collected through in-depth interviews with rice, palm oil, and fruit farmers to capture their lived experiences and perceptions of fertilizer quality, accessibility, pricing, and distribution policies. The findings show that farmers generally perceive no fundamental difference in the intrinsic quality of subsidized and non-subsidized fertilizers; however, satisfaction is strongly shaped by information clarity, consistency of field results, and the match between fertilizer characteristics and crop needs. Farmers report persistent problems related to uneven distribution, limited access to subsidized products, and the circulation of counterfeit or substandard fertilizers, all of which undermine trust in the distribution system. The study also highlights the potential of digital tools such as the RDKK application, although limited digital literacy constrains their effectiveness. Overall, the research provides a deeper understanding of farmers' experiences and offers practical recommendations for improving communication, product support, and distribution governance in order to enhance farmer satisfaction and loyalty.

## **INTRODUCTION**

Customer satisfaction plays a crucial role in marketing strategy, particularly in highly competitive industries such as the fertilizer sector. Customer satisfaction not only influences consumer loyalty and retention but also contributes significantly to shaping the product's image and reputation in the market. According to Kotler and Keller (2016), 5% increase in customer retention can lead to a profit growth of between 25% and 95%. This finding underscores that understanding and fulfilling customer needs and expectations are key to maintaining a company's competitive advantage.

In the context of the national fertilizer industry, the Indonesian fertilizer market is characterized by dynamic developments and intense competition among producers seeking to meet the demands of the agricultural sector. PT Pupuk Kaltim, as one of the largest fertilizer producers in Indonesia, plays a significant role in supporting the national fertilizer supply. Based on data from the Indonesian Fertilizer Producers Association (APPI), PT Pupuk Kaltim held approximately 20% of the domestic urea fertilizer market share in 2023. In addition to focusing on production and distribution, the company continuously strives to innovate its products to enhance agricultural efficiency and productivity at the national level.

Understanding farmers' experiences and levels of satisfaction—as the primary users of fertilizer products is an essential factor in ensuring business sustainability and guiding product development. Previous studies by Susanto (2020) indicated that farmer satisfaction is influenced by several factors, including product quality, price, availability, and after-sales service. Similarly, Diyahya et al. (2016) emphasized that the level of farmer satisfaction is positively correlated with agricultural productivity; farmers who are satisfied with fertilizer effectiveness tend to achieve more stable and higher yields. Thus, farmer satisfaction not only reflects product acceptance but also serves as a key indicator directly affecting the efficiency and sustainability of agricultural systems.

Nevertheless, field observations reveal that several issues persist among farmers using PT Pupuk Kaltim's fertilizers. Preliminary interviews with palm oil farmers who use these products uncovered several concerns, particularly regarding non-subsidized fertilizers. Farmers reported that non-subsidized fertilizers tend to promote rapid branch growth, which negatively impacts fruit stability. In contrast, subsidized fertilizers are perceived to better support fruit continuity and quality, albeit with slower overall plant growth. Furthermore, the limited distribution of subsidized fertilizers poses a major challenge for farmers seeking to maintain the productivity of their plantations. This situation highlights a gap between farmers' expectations and product performance, indicating the need for greater corporate attention and response.

However, previous studies on farmer satisfaction rely heavily on quantitative survey approaches and focus on measurable factors such as price, product availability, and service quality. These studies provide important empirical insights but do not explain how farmers interpret and experience fertilizer use in their daily agricultural practices. Only a few studies employ a phenomenological perspective, and none specifically explore farmers' lived

experiences with subsidized and non-subsidized fertilizers from a single producer such as PT Pupuk Kaltim. This reveals a clear theoretical and methodological research gap: the phenomenological dimension of fertilizer satisfaction has not been adequately examined in the existing literature. However, previous studies on farmer satisfaction rely heavily on quantitative survey approaches and focus on measurable factors such as price, product availability, and service quality. These studies provide important empirical insights but do not explain how farmers interpret and experience fertilizer use in their daily agricultural practices. Only a few studies employ a phenomenological perspective, and none specifically explore farmers' lived experiences with subsidized and non-subsidized fertilizers from a single producer such as PT Pupuk Kaltim. This reveals a clear theoretical and methodological research gap: the phenomenological dimension of fertilizer satisfaction has not been adequately examined in the existing literature.

Companies such as PT Pupuk Kaltim need to gain a comprehensive understanding of farmers' experiences and perceptions of their products. Through a qualitative approach, research can explore farmers' views and experiences in depth to identify the underlying factors driving satisfaction or dissatisfaction. Such an approach enables researchers to obtain more contextual and nuanced insights (Zhou et al., 2022; Neubauer et al., 2019), particularly regarding product quality, effectiveness, ease of use, and the technical support provided by the company. The findings can serve as a critical basis for improving product quality, expanding distribution access, and enhancing support services for farmers.

Building upon this background, the present study aims to explore in depth farmers' experiences in using PT Pupuk Kaltim's fertilizer products. It seeks to understand the challenges faced by farmers, examine their perceptions of product quality and effectiveness, and identify factors contributing to dissatisfaction during use. Additionally, the study aims to investigate how farmers perceive PT Pupuk Kaltim's fertilizers compared to those of other producers, thereby providing a comprehensive understanding of brand perception and market positioning among users.

Overall, this research endeavors to provide a deeper understanding of the factors influencing farmers' satisfaction and dissatisfaction with PT Pupuk Kaltim's fertilizer products. The findings are expected to offer practical contributions to the company in formulating strategies to improve product and service quality, strengthen relationships with farmers as the main consumers, and support the enhancement of productivity and sustainability in Indonesia's agricultural sector.

## **THEORETICAL REVIEW**

### ***Customer Satisfaction***

Customer satisfaction is a post-purchase evaluation in which customers compare their expectations of a product or service with the actual performance they experience. According to Kotler and Keller (2016), customer satisfaction refers to the feeling of pleasure or disappointment resulting from comparing a

product's perceived performance (or outcome) with expectations. Satisfaction occurs when the product's performance meets or exceeds expectations, while dissatisfaction arises when performance falls short of expectations. Furthermore, customer satisfaction is a multidimensional concept encompassing various aspects of the customer's experience with a product or service. Oliver (1997) explains that customer satisfaction can be viewed as a process through which customers undergo several stages of evaluation, ranging from need recognition and information search to purchase and post-purchase usage. At each stage, customers develop expectations that influence their eventual satisfaction levels. Therefore, it is crucial for companies to understand customer expectations and strive to fulfill them through product quality, excellent service, and positive interactions.

### *Product Quality*

Product quality is one of the fundamental elements determining customer satisfaction. In the context of PT Pupuk Kaltim's fertilizer products, quality encompasses several key aspects such as effectiveness, reliability, and impact on agricultural outcomes. The effectiveness of Pupuk Kaltim's fertilizer can be assessed by its ability to enhance plant growth and yield. Farmers expect fertilizers to supply optimal nutrients to crops, thereby increasing productivity. A study by Bosona and Gebresenbet (2013) found that high fertilizer quality is positively correlated with improved agricultural yields, which in turn enhances farmer satisfaction. Reliability is another critical dimension in assessing product quality, referring to consistency in performance, compositional stability, and safety of use. For farmers, reliability means that each fertilizer application consistently produces predictable results. When farmers use reliable fertilizers, they can plan agricultural activities more effectively, ensure optimal crop growth, and maintain plantation productivity. Conversely, if fertilizers fail to perform reliably, agricultural cycles may be disrupted, leading to reduced yields. For instance, non-subsidized fertilizers that stimulate rapid palm frond growth but negatively affect fruit stability reflect inconsistent performance that harms farmers' outcomes. Liu and Kao (2022) demonstrated that product reliability is one of the main factors influencing customer satisfaction in the agricultural sector. When fertilizers display significant variability in performance, they can cause dissatisfaction and erode farmers' trust. Trust is a key element in the relationship between fertilizer producers and farmers; once lost, farmers may switch to alternative products perceived as more dependable. Therefore, PT Pupuk Kaltim must address farmers' complaints seriously by ensuring that its products meet high reliability standards. This includes conducting regular quality testing, maintaining formula consistency, and providing transparent information to farmers. By doing so, PT Pupuk Kaltim can enhance customer satisfaction while rebuilding farmers' trust and loyalty. The fertilizer's impact on agricultural productivity also serves as a major indicator of product quality. Effective fertilizers should improve soil quality, supply essential nutrients, and promote healthy plant growth. Recent research by Chandra et al. (2019) indicates that fertilizers with well-designed formulations can significantly enhance soil

fertility and crop yield. In the case of Pupuk Kaltim, it is essential that products are tailored to the specific crop requirements and soil conditions of Indonesia. Thus, improving product quality through precise formulation and continuous innovation can substantially increase overall farmer satisfaction.

### ***Agricultural Product Marketing***

An effective marketing strategy for fertilizer products requires a structured and comprehensive approach. Market segmentation is a critical first step in this strategy. It involves classifying consumers based on shared characteristics and needs. In the fertilizer industry, the market can be segmented into smallholder farmers, large-scale farmers, plantations, and horticultural producers. According to Yaseen et al. (2018), understanding the specific needs of each market segment allows companies to design products and services better suited to each group, thereby improving marketing success rates. Product positioning is the next essential stage. Once market segments are identified, companies must determine how they want their products to be perceived by consumers within those segments. Effective positioning requires a deep understanding of consumer perceptions and how fertilizer products can meet or exceed their expectations. Calabi-Floody et al. (2018) argue that strong positioning in the fertilizer industry often emphasizes product quality, effectiveness, and additional benefits such as environmental friendliness or yield enhancement. These messages must be communicated clearly across all marketing channels. Promotional strategies also play a crucial role in fertilizer marketing. Effective promotion should combine multiple tools, including advertising, direct sales, and digital marketing. Ali and Xia (2022) found that the use of digital technology – such as social media and e-commerce platforms – has become increasingly important for reaching technologically literate modern farmers. Additionally, field demonstrations and product trials can provide tangible proof of fertilizer effectiveness, increasing farmers' trust and purchase likelihood.

Building strong relationships with distributors and retailers is another key component of a successful marketing strategy. Efficient distribution ensures that products are available at the right place and time. Yaseen et al. (2018) highlight that partnerships with local distributors and retailers can help expand market reach and improve product accessibility. Distributors and retailers who maintain good relationships with farmers can act as strong advocates for the fertilizer brand, thereby supporting higher sales and customer loyalty.

### ***Product Innovation in the Fertilizer Industry***

Product innovation in the fertilizer industry is essential to meet the evolving needs and expectations of farmers. In modern agriculture, farmers seek not only higher yields but also environmentally friendly and sustainable products. Innovations in fertilizer formulation—such as the use of organic materials and controlled-release technologies have become central to minimizing environmental impacts while enhancing nutrient efficiency. Yao et al. (2021) found that controlled-release fertilizers can improve nutrient use efficiency by up

to 20% while reducing soil and water pollution. Beyond formulation, innovation in packaging and product presentation has also advanced significantly. Improved packaging can preserve product quality and enhance usability. For example, packaging with features such as zip locks or portable containers can help farmers store and apply fertilizers more efficiently. Vejan et al. (2021) reported that packaging innovation can reduce product loss during storage and transport by up to 15%, leading to greater end-user satisfaction. Digital technology likewise plays a pivotal role in fertilizer product innovation. Mobile applications and e-commerce platforms allow farmers to access product information, application guides, and user reviews with ease. Yan and Liu (2022) revealed that integrating digital technology into fertilizer marketing strategies improves information accessibility and farmer education, leading to more efficient and accurate fertilizer use. Digital platforms also enable fertilizer companies to collect valuable user data and feedback for future product development. Moreover, innovation in distribution and logistics is vital to ensuring that fertilizers reach farmers promptly and in good condition. Advanced supply chain technologies – such as real-time tracking and automated inventory management – help optimize distribution efficiency and reduce operational costs. Rabbani et al. (2022) found that the adoption of advanced logistics technologies can reduce delivery times by up to 25% and minimize product losses during transport. Thus, innovation extends beyond product formulation to encompass the entire supply chain, ultimately enhancing customer satisfaction and loyalty.

### *Empirical Studies and Previous Research*

Farmer satisfaction with fertilizer products is an important research topic given its significant role in improving agricultural productivity. A study by Gama et al. (2016) in West Java explored farmers' satisfaction with various fertilizer brands available in the local market. Through in-depth interviews, the study found that quality, price, and accessibility were the primary determinants of satisfaction. Farmers expressed a strong preference for fertilizers that were affordable and readily available, highlighting the importance of effective distribution and reasonable pricing to ensure satisfaction and loyalty. Research conducted by Sulasti et al. (2020) in Tabanan, Bali, offered additional insights into farmer satisfaction, focusing specifically on organic fertilizers. Using semi-structured interviews, the study found that farmers highly valued the environmental and soil health benefits of organic fertilizers but expressed concerns regarding cost and product availability. This suggests that while there is growing interest in environmentally friendly products, economic and logistical factors remain substantial barriers. Consequently, innovation in the production and distribution of organic fertilizers is necessary to enhance farmer adoption and satisfaction.

In China, Xin and Jiaying (2020) examined farmers' perceptions and satisfaction with chemical fertilizers. Using in-depth interviews, their findings revealed that while chemical fertilizers were effective in increasing yields, farmers were concerned about their long-term effects on soil health. This reflects

the dilemma farmers face between achieving short-term yield gains and maintaining long-term soil fertility. Innovative solutions that minimize the negative impacts of chemical fertilizers while maintaining their efficiency would therefore be highly valued by farmers. A study conducted by Tian et al. (2023) in Sichuan, China, explored farmers' responses to technologically advanced fertilizers, such as controlled-release fertilizers. Using interviews and focus group discussions, the research found that farmers were highly satisfied with the increased efficiency and reduced manual labor associated with these fertilizers, although the high initial cost remained a major concern. This indicates that adopting new agricultural technologies requires strategies that consider farmers' financial capacities as well as the provision of adequate training and support to maximize the benefits. Finally, Raut and Sitaula (2012) investigated farmer satisfaction with NPK fertilizers in the Mekong Delta, Vietnam. Through in-depth interviews, the study found that farmers appreciated the consistent results and improved crop quality provided by NPK fertilizers. However, they also expressed a desire for greater technical support from suppliers. This finding underscores the importance of after-sales service and technical assistance in ensuring product success and farmer satisfaction. Continuous training and education on proper fertilizer application can significantly enhance both yields and farmer satisfaction.

## **METHODOLOGY**

### ***Research Informants***

Selecting informants from different agricultural regions in East Kalimantan provides diverse and representative perspectives on the use of PT Pupuk Kaltim's fertilizer products within the local agricultural context. This ensures that the findings reflect a comprehensive understanding of the experiences and perceptions of various types of farmers in the region.

#### **1. Rice Farmers**

A rice farmer experienced in managing paddy fields in areas such as East Kutai or Kutai Kartanegara. This informant will provide insights into the use of PT Pupuk Kaltim fertilizers in rice cultivation in East Kalimantan, including both challenges and successes encountered.

#### **2. Oil Palm Farmers**

An oil palm farmer actively engaged in plantation activities in Kutai Kartanegara or East Kutai. This informant will share perspectives on the use of PT Pupuk Kaltim fertilizers in oil palm farming, as well as their impact on productivity and fruit quality.

#### **3. Fruit Growers**

A fruit farmer operating in areas such as Samarinda or Tenggarong. This informant will offer insights into the use of PT Pupuk Kaltim fertilizers in fruit cultivation, particularly regarding their effects on plant growth and fruit quality.

### ***Data Analysis***

Qualitative data analysis using a phenomenological approach involves several systematic and structured stages (Williams, 2021; Van Manen, 2023). The

first stage is data collection, where data obtained from in-depth interviews with farmers and production managers are recorded in full. The next step is data reduction, in which the data are organized into smaller, more manageable units to facilitate analysis. This process involves note-taking, transcription, and summarization of each interview. Subsequently, data coding and theme identification are conducted to extract key patterns and meanings from participants' narratives. Researchers identify recurring themes related to farmers' experiences, perceptions, and attitudes toward PT Pupuk Kaltim's fertilizers. The final step is data interpretation, in which the identified themes are synthesized to construct a comprehensive understanding of farmers' lived experiences, consistent with phenomenological principles.

### ***Validity and Reliability Triangulation***

Triangulation is a vital strategy in qualitative research to ensure data validity by employing multiple methods, sources, or researchers. By integrating various data sources, the researcher can examine and confirm findings more thoroughly. According to Patton (2023), triangulation allows researchers to "reduce bias, gain a deeper understanding of the phenomenon under study, and validate or explore contradictions within the data."

In this study, triangulation is achieved by comparing findings from interviews with farmers and production managers, and by integrating data from different sources such as company documents and field observations. This approach strengthens the credibility of the research findings by ensuring that interpretations are supported by multiple lines of evidence.

### ***Member Checking***

Member checking is a validation technique in which the researcher verifies research findings with participants who were previously interviewed. By involving participants in the process of verifying interpretations, the researcher ensures that the findings accurately reflect their experiences and perspectives. Tracy (2019) notes that member checking "allows participants to correct, add to, or clarify the researcher's interpretations." This process enhances the credibility and trustworthiness of the research findings and provides an opportunity to address any potential misinterpretations or inaccuracies. Through member checking, participants can validate whether the themes and conclusions drawn by the researcher align with their actual experiences, thereby reinforcing the study's validity and reliability.

### ***Audit Trail***

An audit trail is an essential step in ensuring data reliability. The researcher must record in detail every stage of the research process, including interview transcription, data analysis, and the development of findings. According to Maxwell (2022), maintaining a well-documented audit trail enables researchers to "control errors, address analytical challenges, and demonstrate interpretive rigor." By systematically documenting each step of the research

process, the researcher ensures consistency and accuracy in data management and analysis, thereby strengthening the credibility and transparency of the study.

## **RESULTS AND DISCUSSION**

### ***Research Findings***

The findings of this study were generated from in-depth interviews with farmers in East Kutai and with a fertilizer producer, providing insights into their experiences and perceptions of PT Pupuk Kaltim's fertilizer products. The following is a summary of interview results relevant to the study's research questions.

### ***Constraints Faced by Farmers: Difficulties Accessing Subsidized Fertilizer***

One of the main challenges farmers face in using PT Pupuk Kaltim's products is difficulty accessing subsidized fertilizer. In an interview with Abdul Wahid (AW), an oil palm farmer in East Kutai, he explained that although he has heard about subsidized fertilizer, information regarding its availability and how to obtain it is very limited. Excerpts from the interview with AW are as follows: "It's really hard now, Ma'am. There used to be subsidized fertilizer, but now it's scarce. For the past two years no one's been selling it. We also don't know whom to ask. So, like it or not, we're forced to buy regular fertilizer, which is expensive. It's very frustrating, but what can we do we still have to plant."

This reflects a significant communication problem between producers and farmers, which should be addressed through better extension services and information dissemination. AW also added that when he tried to find subsidized fertilizer at nearby kiosks, he often found that it was out of stock or unavailable. "I've gone to several village kiosks, but they said there's no subsidized fertilizer. They only sell non-subsidized fertilizer, which is much more expensive,"

This situation suggests that although the government has established policies to provide subsidized fertilizer, implementation in the field remains far from expectations. Limited supply and uneven distribution have made access difficult, forcing farmers to seek alternative products that are more expensive and often less effective. The problem is compounded by farmers' limited understanding of the procedures for obtaining subsidized fertilizer. Abdul acknowledged that he did not know where to register or how to obtain more information:

"I don't know if there's a special way to get this cheaper fertilizer. They say there's an app or a registration system, but we're not clear on what it looks like; many farmers here don't understand that kind of app, Ma'am. All the information we get is by word of mouth... so we can't really follow through," he said.

This indicates a lack of effective information channels; producers and the government must strengthen communication and outreach regarding the subsidy program. By providing clear, accessible information, farmers will better understand how to obtain subsidized fertilizer and its benefits. This is crucial to ensure optimal uptake and to improve agricultural productivity. AW also highlighted a stigma among farmers that subsidized fertilizer is of lower quality

than non-subsidized fertilizer. This perception makes many farmers hesitant to use subsidized products, even though they are more affordable and designed to support productivity. As AW explained:

“There’s indeed an issue going around that the quality is different between subsidized and non-subsidized fertilizer. Many of my friends prefer non-subsidized because they believe the results are better, even though it’s more expensive,” he said.

Such negative perceptions can hinder the use of subsidized fertilizer, even when it is intended as a more affordable solution. It is therefore crucial for PT Pupuk Kaltim to implement comprehensive educational programs on the benefits and effectiveness of subsidized fertilizer. With clear, convincing information, farmers may shift their views and feel more confident using subsidized products in their agricultural practices. More broadly, limited access to subsidized fertilizer affects not only individual farmers but overall agricultural productivity. AW emphasized that uncertainty in obtaining the right fertilizer can disrupt planting and harvesting plans:

“If farmers can’t get the fertilizer they need on time, it can affect the harvest. We actually worry, Ma’am... our crops won’t grow well because of the fertilizer delay,” he concluded.

Accordingly, the accessibility of subsidized fertilizer must be a serious concern for PT Pupuk Kaltim and other stakeholders. Ensuring easy access to needed inputs will help farmers improve productivity and welfare. Efforts to enhance distribution systems, strengthen communication, and provide appropriate education will help address these constraints and support the sustainability of the agricultural sector in the region.

### ***Quality Issues with Non-Subsidized Fertilizer***

The quality of non-subsidized fertilizer is among the chief concerns raised by farmers, especially in production systems highly influenced by weather conditions, such as during the dry season. In an interview with Fernandus Hipolius, an oil palm farmer in East Kutai Regency, he reported that non-subsidized fertilizers often failed to deliver expected results:

“I have tried various types of non-subsidized fertilizer, but the results are often disappointing, especially during the dry season. My oil palm trees do not grow as well as I expect,” Fernandus explained.

Low fertilizer quality can significantly affect plant health and productivity. Fertilizers that do not meet required nutrient standards can lead to suboptimal growth, leaving crops more vulnerable to pests and diseases. Consequently, yields from crops treated with low-quality fertilizer are often unsatisfactory, causing financial losses and threatening farm viability. Fernandus added that the non-subsidized fertilizers he used sometimes did not match the specific needs of oil palm:

“There are times when the fertilizer I bought actually makes my plants grow unevenly. Some fronds grow quickly, but the fruit is unstable. This is very damaging,” he said.

Such questionable quality not only disrupts crop growth but also threatens the continuity of farming enterprises built with considerable effort. Yield uncertainty leaves Fernandus and other farmers feeling trapped in a cycle of ongoing losses. He also noted that during the dry season, the need for high-quality fertilizer becomes even more urgent:

“Sometimes when it doesn’t rain for several weeks... in hot weather, oil palms need better nutrients to survive. But the non-subsidized fertilizers on the market often don’t meet the necessary standards,” he said.

This underscores farmers’ reliance on fertilizer quality to maintain plant health, especially under extreme weather conditions. In such circumstances, crops require optimal nutrition to survive and develop. The inability of non-subsidized fertilizers to supply sufficient nutrients can stunt growth, heighten disease susceptibility, and ultimately lead to significant yield declines—financially harming farmers and jeopardizing the sustainability of their operations.

### *Inefficient Distribution*

Inefficient fertilizer distribution is another major problem faced by farmers, often resulting in dissatisfaction and losses. In an interview with Paulus Johan (PJ), a horticultural farmer in Kutai Kartanegara, he stated that distribution issues frequently disrupt planting and harvesting schedules:

“I often receive fertilizer that does not match my order. For example, I order type A, but what arrives is type B. This is very detrimental and certainly disrupts our planting time, which affects operating costs,” PJ explained.

Inaccurate deliveries create confusion and deep frustration. Receiving products that do not match orders disrupts carefully planned agricultural schedules. Farmers lose time and resources and may be forced to seek alternatives that are not readily available. This frustration not only affects production outcomes but also undermines trust in existing distribution systems.

PJ added that he has at times received fertilizers that did not meet the promised specifications:

“There are times when the fertilizer I receive does not have the appropriate nutrient content. I have conducted analyses, and the results show it is ineffective for my crops,” he said.

This indicates that distribution problems extend beyond delivery errors to include products that fail to meet stated specifications. Dissatisfaction with received products can lead farmers to apply ineffective fertilizers, which adversely affects crop growth and reduces expected yields—potentially causing substantial financial losses and threatening farm sustainability. PJ further expressed concern about counterfeit fertilizers on the market:

“I once bought fertilizer from a retailer that turned out to be fake. My plants did not grow well, and after I looked into it, the fertilizer did not contain the required components,” he noted.

The presence of counterfeit products poses a serious challenge. Farmers must contend not only with inefficient distribution but also with poor-quality or fraudulent goods. This creates uncertainty and doubt about the effectiveness of

purchased fertilizers, complicating decision-making and discouraging investment in necessary inputs—ultimately reducing yields and causing significant financial harm. PJ also observed that distribution problems are often exacerbated by a lack of transparency in the supply chain:

“...and sometimes there’s another issue—though it’s rare... I don’t know the origin of the fertilizer I buy. At times, I feel trapped in an unclear system. If problems arise, it’s hard to identify who is responsible because the channels are somewhat uncertain,” he said.

A lack of clarity in the supply chain leaves farmers feeling powerless and out of control regarding product quality. This uncertainty raises serious concerns, as farmers cannot be sure the fertilizers they purchase will meet their crops’ needs. Producers and distributors should therefore enhance transparency in distribution processes. With accurate, clear information, farmers can make better decisions, improving trust and agricultural outcomes.

### *Non-Competitive Fertilizer Prices*

Non-competitive prices are another issue faced by farmers, even though the government has set a ceiling retail price (HET) for subsidized fertilizers. In an interview with Tukiran, a paddy rice farmer in North Penajam Paser, he explained that in practice, the price of subsidized fertilizer often approaches that of non-subsidized products:

“This is about the retail price, Ma’am... I often find that the price of subsidized fertilizer is almost the same as non-subsidized. This is very detrimental for us as farmers,” Tukiran noted.

Such price disparities impose a significant additional burden on farmers already striving to sustain their operations. When subsidized prices nearly match non-subsidized prices, farmers incur higher costs without receiving the intended benefit. This reduces profit margins and complicates financial planning, leaving many farmers caught in a cycle of losses that threatens long-term viability. Tukiran continued that the small price difference diminishes incentives to use subsidized fertilizers:

“This price comparison becomes an obstacle, Ma’am... If the prices are almost the same, why should I bother looking for subsidized fertilizer? I prefer to buy non-subsidized that I know has good quality,” he said.

This indicates that although subsidies are intended to support farmers, the reality often falls short of expectations. Dissatisfaction with the price and perceived quality of subsidized fertilizer can drive farmers to switch to non-subsidized products they consider superior. Reduced uptake of subsidized fertilizer may lessen the effectiveness of government programs and, ultimately, negatively impact overall agricultural productivity posing challenges to sector sustainability and farmer welfare. He also noted that price fluctuations frequently complicate financial planning:

“Farmers’ pockets are thin, Ma’am... We have to budget for fertilizer each planting season, but unstable prices make it difficult. Sometimes we must buy at prices higher than planned,” he explained.

Price uncertainty not only disrupts budgeting but can prompt rushed decisions about fertilizer choice. In volatile conditions, farmers may feel compelled to purchase quickly without thorough analysis of quality and crop suitability. Such hasty decisions can prove costly leading to ineffective fertilizer use, poorer yields, and harm to overall farm performance. Tukiran added that the situation is worsened by a lack of clear information on market prices: “That’s the problem prices. We don’t know... we don’t know exactly the prices the government sets. We just follow the retailer’s price, and it can vary a lot,” he said.

Uncertainty surrounding price and quality creates doubt and a sense of unfairness among farmers, hampering sound decision-making about fertilizer selection and, in turn, affecting outcomes. It is therefore essential for government and producers to provide transparent, accurate price information so farmers can plan and manage their operations more effectively. In this context, Tukiran hopes the government will evaluate subsidized fertilizer pricing policy: “It’s actually simple, Ma’am – we need prices that are truly affordable so we can compete and increase yields. If subsidized prices aren’t much different from non-subsidized, it’s hard for us,” he concluded.

A review and adjustment of subsidized fertilizer prices is thus crucial to support farmer welfare and agricultural sustainability in North Penajam Paser. Competitive, market-appropriate subsidized prices would incentivize farmers to use these products optimally, improving productivity and aiding financial planning. Appropriate price adjustments could also reduce dependence on non-subsidized fertilizers that may not always be of consistent quality. Fair, transparent pricing policies will contribute to improved yields, farmer welfare, and sustainable agriculture in the region, creating a healthier and more productive agricultural ecosystem.

### *Confirmation from the Producer*

In an interview with Apriade Saputra, Marketing Support – Distribution at PT Pupuk Kaltim (PKT), he provided detailed views on policies and challenges in distributing subsidized and non-subsidized fertilizers. Apriade explained that the quality of subsidized and non-subsidized products is not significantly different:

“The main differences lie in color and the types used to distinguish subsidized from non-subsidized products. We ensure that all our products meet the same quality standards,” he stated.

This suggests that farmers’ perceptions of quality warrant reassessment, as many factors beyond intrinsic quality affect fertilizer effectiveness. Inefficient distribution and farmers’ application practices also influence outcomes. If farmers do not receive fertilizer on time or do not apply it correctly, neither subsidized nor non-subsidized products will yield optimal results. A better understanding of these factors is therefore essential. Apriade also explained recent policies governing the use of subsidized fertilizer:

“At present, subsidized fertilizer is no longer permitted for oil palm. The policy is directed more toward paddy rice, horticulture, and other vegetables cultivated by small-scale farmers,” he noted.

This policy aims to ensure effective use of subsidies in support of more sustainable agriculture, particularly for food and horticultural crops. However, it poses challenges for oil palm farmers who feel excluded from access to subsidized inputs that could help increase productivity. This perceived inequity can create tension, as these farmers believe their needs are overlooked despite their contribution to an important agricultural sector. One reason Apriade cited for limited fertilizer supply in East Kalimantan is the region’s farmer composition:

“In East Kalimantan, the majority of farmers are oil palm growers, while horticulture and paddy farmers are far fewer. This leads to reduced allocations of subsidized fertilizer compared with regions like Java or Sumatra, where there are more diverse farmers and crops,” he explained.

Imbalances in farmer composition across regions create significant challenges for equitable distribution. In areas dominated by oil palm, subsidized allocations often do not meet the needs of the smaller number of horticulture and paddy farmers, causing dissatisfaction and constraining local agricultural potential. To achieve sustainability, allocations should be adjusted for greater balance across agricultural subsectors. Apriade also described the distribution cycle before fertilizers reach farmers:

“Fertilizer is produced at the plant, then stored in temporary warehouses before being distributed to regional sales distributors and finally to retail kiosks,” he said. Although structured, this process often faces timing and efficiency constraints: “We strive to expedite distribution, but there are often field obstacles that delay delivery,” he added.

Such conditions can lead to dissatisfaction among farmers who rely on timely inputs. When supply is insufficient or deliveries are late, farmers struggle to plan and manage their operations. Dissatisfaction not only affects yields but may also undermine farmers’ motivation to invest in improved practices. Another issue faced by producers is the misuse of subsidized fertilizer in the community. Apriade noted:

“A lot of subsidized fertilizer is not distributed correctly according to need. To address this, we use the RDKK application to minimize errors and misuse.” However, he also observed that many farmers are not yet able to use the application effectively: “Technological barriers are a challenge. Many farmers are unfamiliar with the app, which hampers fulfillment of subsidized fertilizer needs,” he explained.

Apriade further highlighted Minister of Agriculture Regulation No. 1 of 2024, which revised previous rules on the allocation procedures and maximum retail prices for subsidized fertilizer:

“One important point in this regulation is that subsidized fertilizer may no longer be provided to oil palm farmers. This is a step to ensure subsidies truly reach farmers in need, especially for food and horticultural crops,” he concluded.

Apriade's statements reflect the government's effort to direct fertilizer subsidies to those most in need, particularly in the food and horticulture sectors. While this aims to increase efficiency in subsidy use, it is also important to consider impacts on oil palm farmers who feel marginalized. Such policies should be balanced with solutions that support all farmer groups to avoid dissatisfaction and tension. Achieving balance in resource allocation is crucial for the overall sustainability of the agricultural sector.

## CONCLUSIONS AND RECOMMENDATIONS

This study explored farmers' experiences and perceptions of subsidized and non-subsidized fertilizers produced by PT Pupuk Kaltim in East Kalimantan using a phenomenological approach. The findings show that farmer satisfaction cannot be explained solely by the intrinsic quality of the fertilizer. Instead, satisfaction is constructed through a combination of information received, direct usage experience, and the perceived fit between fertilizer characteristics and specific crop needs. Misperceptions regarding the difference between subsidized and non-subsidized products, as well as inconsistent field results, indicate that communication and technical guidance from the producer remain insufficient.

At the same time, structural issues in the distribution system play a central role in shaping farmers' evaluations. Policies that prioritize subsidized fertilizers for paddy and horticultural farmers are designed to support food security, but they also create feelings of exclusion among oil-palm farmers who perceive themselves as less supported. Supply imbalances, delivery delays, and the circulation of counterfeit or substandard products further erode trust in fertilizer governance and increase uncertainty in farming decisions.

The study also reveals an ambivalent role of digitalization. Tools such as the RDKK application have the potential to improve targeting and transparency in fertilizer distribution, yet limited digital literacy and unequal access to information constrain their effectiveness. Without adequate training and support, digital systems risk reproducing existing disparities in access rather than resolving them.

Overall, the results highlight that farmer satisfaction with fertilizer products is shaped by the interaction of product quality, distribution policy, access to reliable information, and institutional trust. For PT Pupuk Kaltim and policy makers, strengthening communication with farmers, improving distribution governance, and investing in farmer education are crucial steps to enhance satisfaction, build long-term trust, and support a more resilient and sustainable agricultural system.

### *Recommendations*

To enhance the effectiveness of subsidized-fertilizer distribution policies and support farmer welfare, the following recommendations are proposed for key stakeholders, including farmers, PT PKT, and the government.

#### 1. Recommendations for Farmers

- a. Farmers are encouraged to actively participate in training programs organized by the government and producers. By strengthening knowledge of agronomic techniques and proper fertilizer use, farmers can maximize

- yields. Farmers should also form farmer groups to share information and experiences, thereby supporting one another in addressing field challenges.
- b. Farmers are advised to utilize technology, such as the RDKK application, to plan fertilizer requirements more accurately. By learning to use this tool, farmers can optimize the allocation of subsidized fertilizers, improving input efficiency and outcomes. Active participation in digital agricultural communities can also help farmers access up-to-date information.
2. Recommendations for PT PKT (Producer)
    - a. PT PKT should increase transparency in the distribution process by providing clear information on product availability and quality. This will help farmers make better decisions and strengthen trust in the products. The producer should also implement educational programs that explain effective fertilizer application to farmers.
    - b. The producer is encouraged to establish partnerships with research institutes and universities to develop more environmentally friendly fertilizer innovations. By investing in research and development, the producer can offer more sustainable products that not only increase agricultural yields but also maintain soil and environmental health.
  3. Recommendations for the Government
    - a. The government should formulate more inclusive policies for subsidized-fertilizer distribution by involving farmers in decision-making processes. Such policies will be better aligned with farmers' needs and may reduce dissatisfaction. The government should also improve distribution infrastructure to ensure better access for farmers across regions.
    - b. The government is further advised to conduct regular monitoring and evaluation of policies. By gathering feedback from farmers and analyzing policy impacts, necessary adjustments can be made to keep policies relevant and effective in supporting farmer welfare and sectoral sustainability.

## **FURTHER STUDY**

To deepen understanding of fertilizer distribution and its impact on farmer welfare, future studies should consider the following:

### **1. Mixed-Methods Approach**

Subsequent research should employ a mixed-methods design, integrating quantitative and qualitative data. Combining survey data and in-depth interviews will provide a more comprehensive understanding of farmers' perceptions of distribution policies and the factors influencing their decisions.

### **2. Comparative Case Studies Across Regions**

Future studies should conduct case studies in diverse regions with differing agricultural characteristics. Comparing experiences across locations will help identify context-specific challenges and opportunities and support more precise recommendations for effective distribution policies.

### **3. Long-Term Impact Analysis**

Future research should focus on the long-term effects of distribution policies on agricultural productivity and farmer welfare. Longitudinal designs will enable evaluation of how policy changes affect yields and farm income over time and provide insights for policy refinement.

#### 4. Adoption of Agricultural Technologies

Research should also explore the use of innovative agricultural technologies—such as drones or soil sensors—in fertilizer distribution. Understanding how these technologies can improve efficiency and effectiveness will yield relevant recommendations for advancing on-farm practices.

#### 5. Stakeholder Engagement

Future studies should involve a broad range of stakeholders—including government, producers, and non-governmental organizations—throughout the research process. Wider engagement will yield more comprehensive perspectives on challenges and solutions and foster better collaboration to support farmer welfare.

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