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Optimizing Strategy of Subsidized Fertilizer Distribution to POKTAN (Farmer Groups)

Dianidza Arodha [1]

[1] Universitas Jember, Indonesia; arodhamine@gmail.com

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Abstract : This study examines the optimization of subsidized fertilizer distribution strategies aimed at improving accessibility, efficiency, and precision in reaching farmer groups. Subsidized fertilizer distribution plays a critical role in supporting agricultural productivity, yet inefficiencies often arise due to logistical challenges, inaccurate data management, and limited resources. Utilizing a case study approach, this research explores how a structured distribution strategy can address these issues by focusing on key areas: expanding distribution networks, implementing integrated digital data systems, enhancing logistics capacity, and aligning with government policies for subsidized programs. Data collection includes interviews with distribution managers, observational analysis of operational workflows, and document analysis of logistical records and digital tracking systems. Findings suggest that optimizing distribution requires a combination of increasing logistical resources, adopting digital tools, and fostering government collaboration to maintain affordability.

Keywords: *Subsidized fertilizer, distribution strategy, farmer groups, agricultural productivity, logistics optimization, digital data systems, government policy alignment, resource accessibility.*

Introduction

The agricultural sector plays a critical role in the economy by addressing several key aspects of national development. It not only ensures food security by providing essential foodstuffs for growing populations but also serves as a cornerstone for industries such as textiles, pharmaceuticals, and food processing, which rely on raw materials sourced from agriculture.

In addition to its industrial contribution, agriculture is vital in creating employment opportunities, particularly in rural areas, which are often more dependent on agriculture for livelihoods. This widespread employment helps reduce poverty and promotes a more balanced development between rural and urban areas, improving overall social welfare. The economic importance of agriculture is also reflected in its contribution to GDP, particularly in developing countries where agriculture is often the primary economic driver. By supporting foreign exchange earnings through the export of agricultural products, the sector plays a significant role in stabilizing and strengthening national economies.

According to data from the Central Statistics Agency (BPS) and the World Food and Agriculture Organization (FAO), agriculture remains a crucial pillar for both economic development and food security, particularly in countries that rely heavily on agriculture-based economies (FAO, 2020; BPS, 2021). This important role also provides a steady income for farmers. Crops like rice, vegetables, and fruits are not only essential for people's nutrition but also serve as the primary source of livelihood for millions of farmers in Indonesia. When crop yields are stable, it improves the well-being of farmers and helps lift many out of poverty, especially in rural areas. Sustainable farming practices are key to preserving the environment, ensuring better land management, and reducing negative impacts such as soil erosion and carbon emissions, all of which contribute to a healthier planet for future generations (Suryana, 2014; Nugroho, 2017).

Unfortunately, one of the most significant challenges farmers face today is the issue of fertilizers. In Indonesia, this problem manifests in several ways, including difficulties in

distribution, misuse of subsidies, price instability, poor product quality, and an overwhelming dependence on chemical fertilizers.

Inefficient distribution often leads to delays, especially in remote rural areas, where access to fertilizers becomes a bottleneck that directly impacts agricultural productivity. This situation leaves farmers struggling to maintain their crops on time, ultimately affecting their yields and income. Furthermore, the misuse of fertilizer subsidies means that the fertilizers don't always reach the farmers who need them most, causing widespread inequality in access to essential agricultural inputs.

Price instability is another burden for farmers, who find it increasingly difficult to predict their production costs. With fluctuating prices, it becomes a challenge to plan and budget effectively, creating uncertainty that affects their financial stability. On top of this, the presence of low-quality fertilizers, including fake products circulating in the market, further harms farmers by reducing the effectiveness of fertilizers, leading to poor crop yields and financial losses.

Moreover, the heavy reliance on chemical fertilizers is taking a toll on the environment. Over time, the continuous use of these fertilizers depletes the soil, reducing its fertility and negatively impacting its long-term health. Despite the known benefits of organic fertilizers, their use remains limited, as many farmers are either unaware of their advantages or find them difficult to access and afford.

To address these complex issues, we need more efficient distribution systems, stricter supervision to ensure subsidies reach the right people, and better education for farmers on sustainable farming practices. It's also essential to promote the use of organic fertilizers, which not only protect the soil but also contribute to healthier crops and a more sustainable farming future. By addressing these challenges head-on, we can support farmers, improve food security, and ensure a more sustainable agricultural landscape for future generations (Firmansyah, 2018; Santoso & Pratama, 2019; Wahyuni et al., 2021).

Many economic experts agree that scarcity is the fundamental issue humans face on Earth, and they often suggest that the solution lies in increasing both the quality and quantity

of production. The idea is that by producing more goods and services, a country can drive economic growth, which is thought to lead to greater prosperity for its people. However, this focus on boosting production can sometimes overshadow the critical need for fair distribution of the benefits of that production.

The common assumption is that the welfare of a country is primarily determined by the growth in the production of goods and services, as this increase is seen as directly related to meeting the society's needs. The more a country produces, the greater its capacity to satisfy the demands of its population. While this view has merit in terms of expanding economic output, it often neglects the equally important issue of how the results of this production are distributed among different groups within society.

If the fruits of increased production are not distributed equitably, the benefits may not reach those who need them the most, leading to greater inequality. Thus, while increasing production is an essential part of economic progress, it must go hand in hand with policies that ensure the fair distribution of wealth and resources, so that the entire society can share in the benefits of growth and improvement in living standards.

A lack of focus on wealth distribution can lead to the concentration of resources in the hands of a few, resulting in monopoly ownership. People with significant capital are able to accumulate more property and wealth, while those with less capital see little to no improvement in their financial situation. As a result, wealth disparity widens, with the rich becoming richer and the poor becoming poorer (Hamzani et al., 2020).

This growing social inequality can spark negative consequences, such as resentment, oppression, and even exploitation of the poor by the wealthy. The imbalance creates a fertile ground for social unrest, as envy towards the rich grows and tensions rise. This can lead to criminal activities such as theft, robbery, fraud, and kidnapping, as those who feel marginalized may resort to desperate measures to survive. Thus, merely increasing production to address economic challenges misses the point. The root of the problem does not lie in the scarcity of resources alone, which can be tackled by expanding production. The deeper issue lies in how the wealth and resources are distributed. Without addressing

inequality and ensuring fair access to the benefits of economic growth, merely producing more will not solve the broader economic problems (Mardani, 2017). To create a truly prosperous society, we must prioritize both production and equitable distribution, ensuring that the benefits of growth reach all levels of society.

Discussion

In 2022, the distribution of subsidized fertilizer in Indonesia reached about 7.4 million tons, or 95% of the planned allocation. This total included various types of fertilizer: 3.88 million tons of urea, 2.89 million tons of NPK, 163 thousand tons of SP-36, 220 thousand tons of ZA, and 233 thousand tons of organic fertilizer. PT Pupuk Indonesia (Persero) was responsible for managing the distribution, supported by 6,151 trucks and a network of around 28,000 fertilizer kiosks spread across the country to ensure availability.

However, despite the large scale of this distribution effort, only 7.7 million tons of fertilizer were allocated out of the proposed 25 million tons. This shortfall led to fertilizer shortages in several regions, creating challenges for farmers who rely on these subsidized fertilizers to maintain crop production. The shortage highlighted issues in meeting the growing demand for agricultural inputs and underscored the need for more efficient and equitable distribution systems.

In 2023, Indonesia successfully met its subsidized fertilizer distribution target, with PT Pupuk Indonesia overseeing optimal distribution efforts. A total of 9.5 million tons of subsidized fertilizer was allocated, aimed at ensuring farmers had access to the necessary inputs to support agricultural productivity. This distribution was managed through an extensive network, including over 1,000 official distributors and 28,000 complete fertilizer kiosks (KPL) spread across the country, ensuring that fertilizer reached even the most remote areas.

To enhance the effectiveness and accuracy of the distribution process, PT Pupuk Indonesia introduced the I-Pubers application. This digital platform allows for the electronic redemption of subsidized fertilizer, streamlining the process and integrating data between

distributors and kiosks. The use of this application has improved transparency, reduced the risk of errors, and helped ensure that the fertilizers are reaching the intended farmers in a timely and efficient manner.

In 2024, the Indonesian government has significantly increased the allocation of subsidized fertilizer to 9.55 million tons, more than double the previous year's allocation of 4.7 million tons, as part of its efforts to support the agricultural sector. This allocation includes 4.63 million tons of urea, 4.42 million tons of NPK (including Special Formula NPK), and 500 thousand tons of organic fertilizer.

The government has earmarked a budget of IDR 54 trillion for this subsidy, aiming to assist farmers who are members of farmer groups and are registered in the Electronic Group Needs Definitive Planning System (e-RDKK). The subsidized fertilizer is intended for farmers managing up to 2 hectares of land, with a focus on key subsectors such as food crops (e.g., rice and corn), horticulture (e.g., chilies and onions), and plantations (e.g., cocoa and coffee).

To ensure accessibility, the highest retail prices for the subsidized fertilizers are set at IDR 2,250 per kilogram for urea, IDR 2,300 per kilogram for NPK, and IDR 3,300 per kilogram for Special Formula NPK. Organic fertilizer is priced at IDR 800 per kilogram. These price controls are designed to ease the financial burden on farmers and ensure that they have access to the necessary resources to boost agricultural productivity and support food security in Indonesia.

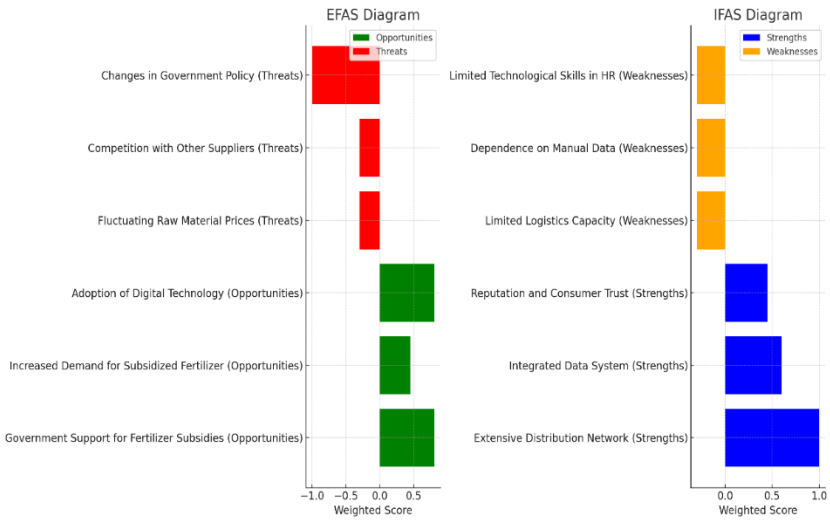

Figure 1. EFAS and IFAS Analysis of UD Sinar Baru

EFAS Diagram: This displays external factors, with Opportunities (green) showing positive weighted scores, such as "Government Support for Fertilizer Subsidies" and "Adoption of Digital Technology." Threats (red) have negative scores, including "Fluctuating Raw Material Prices" and "Changes in Government Policy." IFAS Diagram: This shows internal factors, with Strengths (blue) and positive scores like "Extensive Distribution Network" and "Reputation and Consumer Trust," while Weaknesses (orange) have negative scores, such as "Limited Logistics Capacity" and "Dependence on Manual Data."

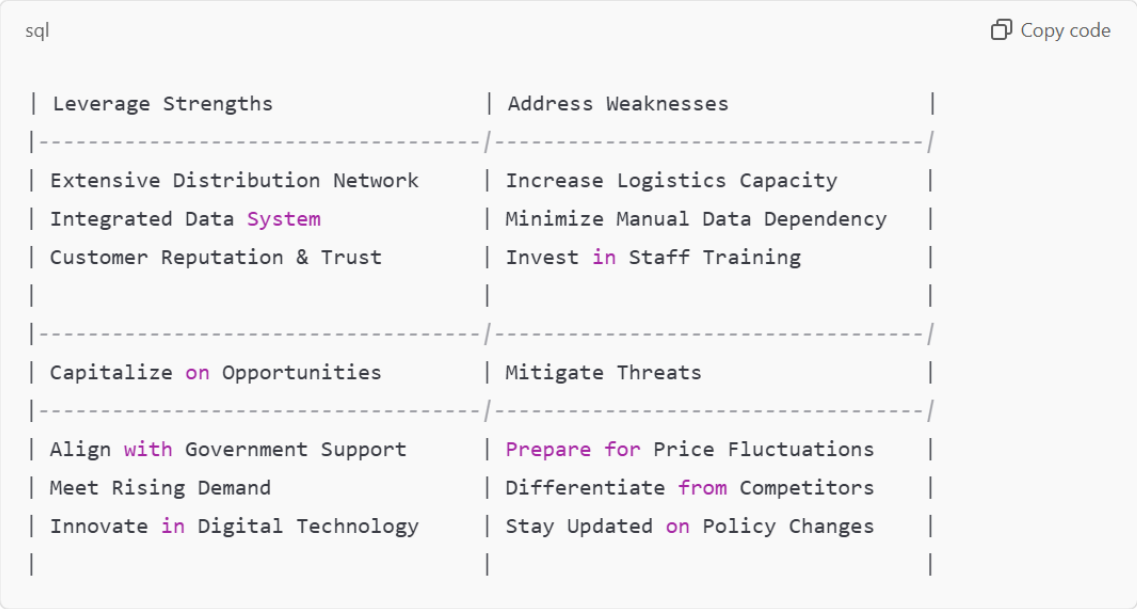

Figure 2. SWOT-Based Strategies for UD Sinar Baru

Based on the SWOT analysis for UD Sinar Baru, the strategy can be broken down into four main areas, focusing on leveraging strengths, addressing weaknesses, capitalizing on opportunities, and mitigating threats. Firstly, leveraging strengths means utilizing UD Sinar Baru's established distribution network, integrated data system, and trusted reputation to enhance service quality and operational efficiency. By expanding the reach of its distribution network, the company can provide better access to fertilizers in underserved areas. Strengthening the integrated data system will streamline operations, making distribution more accurate, while maintaining a strong reputation ensures customer loyalty and brand strength in the competitive market.

Next, addressing weaknesses focuses on improving areas that may hinder distribution or efficiency. This includes increasing logistics capacity, perhaps by adding more transport vehicles or storage facilities to support larger deliveries. Additionally, the company should aim to reduce dependence on manual data entry by adopting digital systems for greater accuracy and efficiency. Investing in technological training for staff is also essential, equipping them with the skills needed to manage digital tools, which will minimize errors and improve data handling.

Capitalizing on opportunities involves taking advantage of external factors that can enhance growth and efficiency. This includes aligning closely with government support programs, which provide subsidies and allow for affordable distribution to farmers. To meet the increasing demand for subsidized fertilizers, UD Sinar Baru should ensure adequate supply levels, positioning itself to capture a larger market share. Embracing digital technology like distribution applications can further improve efficiency and maintain competitiveness, enabling faster and more precise deliveries.

And then, mitigating threats addresses external risks. To handle fluctuating raw material prices, UD Sinar Baru can secure contracts with suppliers or maintain emergency funds to stabilize costs. Differentiating the business through unique value-added services, such as loyalty programs or specialized customer support, can strengthen customer retention despite competitors. Lastly, remaining agile and informed about government policy changes will help UD Sinar Baru adjust its practices swiftly, avoiding disruptions in its operations.

In distributing subsidized fertilizers, UD Sinar Baru's strategy aligns with theories of targeted subsidy distribution, focusing on ensuring efficiency, precision, and accessibility. Leveraging its extensive distribution network allows UD Sinar Baru to reach even remote areas, ensuring fertilizers are accessible to the farmers who need them most. An integrated data system enhances this by enabling precise tracking and allocation, minimizing misallocation through digital verification, and aligning with the principles of precision in subsidy allocation. Addressing internal weaknesses, such as limited logistics capacity and reliance on manual data entry, further supports efficient distribution. By expanding logistical resources and

adopting digital tools, UD Sinar Baru can improve the accuracy and reliability of delivery, critical for meeting the specific needs of each farmer.

Methods

The case study methodology for researching "Optimizing Strategy of Subsidized Fertilizer Distribution to POKTAN (Farmer Groups)" involves an in-depth approach, combining both qualitative and quantitative data collection to understand and improve the company's distribution practices. Data collection will include semi-structured interviews with distribution managers, warehouse staff, field agents, and farmers to capture insights on operational challenges and user satisfaction.

Observational methods will record real-time distribution workflows, logistics coordination, and inventory management, while document analysis of distribution schedules, inventory records, and digital tracking (e.g., e-RDKK, I-Pubers). Analyzing the data through thematic analysis for qualitative insights and descriptive statistics for quantitative measures will identify patterns in efficiency and areas needing improvement. Key performance indicators, such as delivery timeliness, allocation accuracy, and accessibility, will serve as benchmarks, and findings will be compared to industry standards. This lokus research at the Bondowoso City.

Conclusions

In conclusion, UD Sinar Baru's strategy for optimizing the distribution of subsidized fertilizers focuses on leveraging its strengths, addressing operational weaknesses, capitalizing on opportunities, and mitigating external threats to ensure effective service delivery to farmers. By utilizing its extensive distribution network and integrated data systems, UD Sinar Baru can efficiently reach targeted farming areas and improve the precision of fertilizer allocation. Addressing logistical limitations, such as expanding transportation capacity and reducing reliance on manual data, further supports timely and accurate delivery, while ongoing training equips staff to manage digital tools effectively.

Aligning with government subsidy programs helps maintain affordability, while adopting digital technology enhances operational efficiency and allows for real-time adjustments in response to demand. In preparing for threats like fluctuating material costs and regulatory changes, UD Sinar Baru remains adaptable and competitive. Altogether, these strategies enable the company to fulfill its role in the subsidized fertilizer market by providing accessible, timely, and dependable services to farmers, fostering customer loyalty and supporting sustainable agricultural productivity.

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