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The Accuracy of Subsidised Fertiliser Distribution Based on the 6t Principle Among Paddy Field Farmers (A Case Study of Harau District, Lima Puluh Kota Regency, West Sumatra)

Nila Sari[1*], Andrik Marta[1], Syinthia Ona Gusrike Afner[2]

[1] Agribusiness Study Program, Department of Agriculture Business, Politeknik Pertanian Negeri Payakumbuh, Lima Puluh Kota, Indonesia
[2] Plantation Management Study Program, Department of Agriculture Business, Politeknik Pertanian Negeri Payakumbuh, Lima Puluh Kota, Indonesia

*Corresponding author: nilapolitani@gmail.com

Abstract

This study analyzes the accuracy of the distribution of subsidized fertilizers based on the 6 Right principle (6T), namely the right type, the right quantity, the right price, the right time, the right place, and the right target group. The study was conducted in 2025 using a survey. The research location was deliberately chosen because it is one of the areas with high use of subsidized fertilizers. The respondents were 65 farmers who received subsidized fertilizers. The research data consisted of primary data obtained through interviews using a structured questionnaire and secondary data from the agricultural service, farmers' organizations, official sales outlets, and relevant literature. The data analysis was performed descriptively and quantitatively. The results of the study demonstrate that the distribution mechanism of subsidized fertilizers in the Harau district has been implemented through the phases of RDKK preparation, verification of farmer data, distribution by official distributors, and distribution via official sales outlets. In general, the implementation of the Six Rights Principle is proceeding quite well, particularly regarding the right type and the right place. However, various obstacles remain, such as delays in the distribution of fertilizer, limited allocation relative to farmers' needs, and inconsistencies in data regarding grant recipients.

Keywords: Accuracy of distribution, fertilizer distribution, subsidized fertilizers, 6T principle.

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INTRODUCTION

Subsidised fertiliser is one of the government's strategic policy instruments for supporting increased productivity in the agricultural sector, particularly for smallholder farmers. This policy aims to maintain the affordability of fertiliser and ensure its availability at the farm level in order to support national food security. However, in practice, the distribution of subsidised fertiliser often faces various problems such as shortages, uneven distribution, and a mismatch between needs and actual implementation on the ground. This situation indicates that the effectiveness of the subsidised fertiliser policy is largely determined by the accuracy of the distribution process. The use of fertiliser, which is directed towards the application of balanced and organic fertilisers in accordance with recommendations, needs to be supported by access to fertiliser at affordable prices (Kementerian Pertanian, 2020).

In practice, the distribution of subsidised fertiliser in Indonesia adheres to the 'six rights' (6T) principle: right type, right quantity, right price, right time, right place, and right quality. This principle serves as the primary indicator for assessing the accuracy of fertiliser distribution to beneficiary farmers. However, various studies indicate that the achievement of these indicators has not yet been fully optimised. For example, research findings in several regions indicate that the accuracy of quantity, price, and timing of distribution remain major issues within the subsidised fertiliser distribution system. A review by Rachman (2012) notes that the subsidised fertiliser distribution model for the 2008/2009 period was better than that of previous distribution years, but still had several shortcomings that needed to be addressed. These shortcomings include: 1) land ownership data in the RDKK documents for fertiliser applications must be objective and reliable, whereby the compilation of the RDKK must be supported by comprehensive and robust land ownership data, with the assistance of local Extension Officers (PPL); 2) the accuracy of the type, quantity, location and timing of subsidised fertiliser distribution must be guaranteed, and 3) there must be stricter supervision of fertiliser distribution.

Although the 6T concept has served as a guideline for the distribution of subsidised fertiliser, various studies indicate that the degree of accuracy in its implementation still varies across different regions. Issues such as inaccurate farmer data, weak distribution oversight, and limited logistics infrastructure are factors contributing to inaccuracies in distribution. Furthermore, the existence of malpractice at the distributor and retailer levels has exacerbated the distribution of subsidised fertiliser, meaning that the policy objectives have not yet been fully achieved. Problems in the distribution of subsidised fertiliser are not only related to technical aspects, but also concern weak supervision, inter-agency coordination, and transparency within the distribution chain. Several studies reveal that

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distribution irregularities, limited farmer data, and the length of the distribution chain continue to cause misallocation. Furthermore, managerial and regulatory aspects are also deemed not to be functioning optimally, necessitating improvements in the management and oversight systems for the distribution of subsidised fertiliser.

According to Suryana et al (2016), four alternative methods for channelling the fertiliser subsidy budget directly to farmers have been identified, either as input price subsidies or output price incentives. These four alternatives require a necessary condition, namely the availability of accurate data at the farmer level for several key variables that must be updated annually. Meanwhile, the number of farming households and agricultural plots is very large, and rapid changes at the farmer/farming enterprise level frequently occur.

Furthermore, the latest policies regarding the procurement and distribution of subsidised fertiliser also emphasise the importance of stricter oversight to ensure that the fertiliser is actually received by eligible farmers. This indicates that the issue of the accuracy of fertiliser distribution remains a key concern in national agricultural policy. Consequently, a study on the accuracy of subsidised fertiliser distribution is crucial for identifying various obstacles encountered in the field whilst formulating strategies for policy improvement.

Based on the above, research into the accuracy of subsidised fertiliser distribution is relevant, particularly in evaluating the extent to which the implementation of the 6T principles has been achieved. The results of this study are expected to provide scientific contributions and policy recommendations aimed at enhancing the effectiveness of subsidised fertiliser distribution and supporting sustainable agricultural development.

METHOD

The research was conducted in 2025 in Harau Sub-district, Lima Puluh Kota Regency. The research method employed was a survey; the research location was selected using purposive method (Sugiyono, 2018; Mukhlis et al., 2019; Mukhlis et al., 2024; Asgaf et al., 2025), deliberately chosen because in an area with a high rate of subsidised fertiliser use.

The research respondents consisted of farmers receiving subsidised fertiliser who were registered in the Definitive Group Needs Plan (RDKK). Sampling was carried out using simple random sampling (Sugiyono, 2022), 65 farmers receiving subsidised fertiliser who were members of farmers' groups.

The data used in this study included primary and secondary data (Sugiyono, 2018; Mukhlis et al., 2022; Mukhlis et al., 2023). Primary data were obtained through face-to-face interviews using a structured questionnaire, whilst secondary data were obtained from the agricultural office, farmers' groups, official retail outlets, and relevant literature. The

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research variables covered the accuracy of subsidised fertiliser distribution based on the six principles of accuracy: correct type, correct quantity, correct price, correct timing, correct location, and correct target. Data analysis was conducted using a mixed-methods approach, namely qualitative and quantitative descriptive analysis.

RESULTS

Description of the Distribution of Subsidised Fertiliser in Harau Sub-district

Harau Sub-district is one of the agricultural centres in Lima Puluh Kota Regency, West Sumatra Province, which has great potential in the food crop sector, particularly paddy rice and horticulture. To support agricultural productivity, the government provides a subsidised fertiliser programme to help farmers obtain fertiliser at more affordable prices. The distribution of subsidised fertiliser in Harau Sub-district is carried out through a mechanism regulated by the government, involving various parties such as the agricultural office, agricultural extension officers, farmers' groups, distributors, and authorised retail outlets. Communication between farmers and the department should be well-established; however, as the department is represented by field extension officers, there are barriers to understanding in the application of information, as many farmers are still unfamiliar with the process (Risnanda et al., 2024).

The mechanism for distributing subsidised fertiliser begins with the recording of fertiliser requirements by farmers who are members of farmers' groups. This data is compiled into a Definitive Group Needs Plan (RDKK) and entered via the Agricultural Extension Management Information System (Simluhtan) application. After verification by agricultural extension officers and the relevant department, the fertiliser allocation is distributed to distributors and forwarded to official retail outlets according to the distribution area. Agricultural extension officers act as facilitators, communicators and motivators in the successful preparation of the RDKK (Sari & Marta, 2025). In Harau Sub-district, the distribution of subsidised fertiliser generally includes Urea, NPK Phonska and organic fertilisers. Farmers eligible to receive subsidised fertiliser must meet certain requirements, including being members of an active farmers' group, owning a maximum land area as stipulated by the government, and being registered in the e-RDKK system. Fertiliser is collected using a farmer's card or official identification in accordance with applicable regulations.

In practice, the distribution of subsidised fertiliser in Harau Sub-district still faces several challenges, such as delays in distribution and limited fertiliser allocations compared to farmers' needs. Therefore, supervision by the local government, the Fertiliser and

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Pesticide Supervisory Commission (KP3), agricultural extension officers, and the community is crucial to ensure that subsidised fertiliser is delivered to the right recipients, in the right quantities, at the right time, of the right type, of the right quality, and at the right price. According to Nuryanti et al (2023), it is known that the indicators of 'right place', 'right type' and 'right quality' are already functioning very effectively, whilst the indicators of 'right time' and 'right quantity' are functioning effectively. Only the 'right price' indicator is not effective.

Given that the fertiliser subsidy scheme is not yet fully considered a success, the government must refine the distribution mechanism for subsidised fertiliser to make it more effective; this improvement relates primarily to the 'right price' aspect, where the price of subsidised fertiliser must be controlled even more strictly. According to Latif et al (2022), it is known that farmers experiencing low productivity still perceive the role of agricultural extension officers in running their farming businesses. This indicates that the intensity of extension services influences the farmers' productivity itself. The flowchart for the distribution of subsidised fertiliser is as follows. The management of subsidised fertiliser in Indonesia is beginning to improve with the introduction of the E-RDKK system; however, the compilation of E-RDKK data, fertiliser distribution, and the supervision of subsidised fertiliser need to be enhanced to align with the 6T principles (Jamil, 2022). Based on Kementerian Pertanian (2020) regarding technical guidelines for the implementation of the distribution and provision of subsidised fertiliser.

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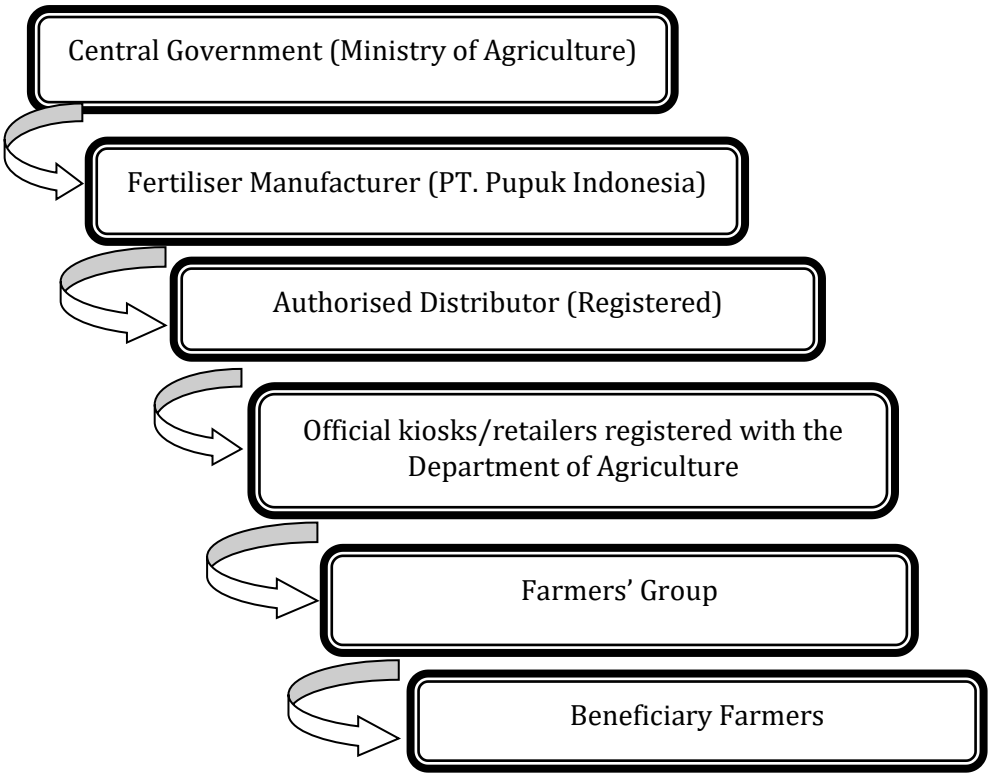


Figure 1. Distribution Flowchart for Subsidised Fertiliser in Harau Sub-district
Source: Processed data, 2026

The Application of the 6T Principles (right type, right quantity, right price, right time, right place and right target) in the Distribution of Subsidised Fertiliser

The distribution of subsidised fertiliser is one of the government's key instruments in supporting agricultural sector productivity and maintaining national food security. The success of the subsidised fertiliser programme is largely determined by the accuracy of distribution in accordance with the 6T principles, namely right type, right quantity, right price, right time, right place, and right target. These principles serve as the primary indicators for assessing the effectiveness of subsidised fertiliser distribution at the farmer level. Firstly, the government has undertaken national efforts to establish legal certainty regarding the risks associated with the procurement and supply of subsidised fertiliser for the agricultural sector, ensuring the availability of subsidised fertiliser stocks for the agricultural sector nationwide in accordance with the allocations stipulated by government regulations. Secondly, the fertiliser distribution system must be able to guarantee the availability of fertiliser at the farmer level through the application of the seven rights (type, quantity, location, quality, timing, target, and prices affordable to farmers) to prevent

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disruption to food security enhancement programmes at central and regional levels, and coordinated and comprehensive monitoring and supervision by relevant agencies is required for the provision and distribution of subsidised fertiliser to farmers (Herlambang et al., 2023). The application of the 6T principles in Harau Sub-district is summarised in Table 1.

Table 1. Indicators of the Implementation of the 6T Principles for Subsidised Fertiliser in Harau District, Lima Puluh Kota Regency

No	Indicator	Operational Definition	Category	
			TT (%)	T (%)
1	Right Type	The suitability of the type of fertiliser received by farmers in relation to crop requirements and government recommendations	5 (7,6)	60 (92,4)
2	Right Quantity	The suitability of the quantity of fertiliser received in relation to land requirements and RDKK allocations	15 (23)	50 (77)
3	Right Price	The alignment of the price paid by farmers for fertiliser with the government's Maximum Retail Price (MRP)	20 (30,76)	45 (69,24)
4	Right Time	The timeliness of fertiliser distribution in line with the planting season and farmers' needs	25 (38,46)	40 (61,54)
5	Right Place	The ease with which farmers can access fertiliser at official outlets or distribution points	0 (0)	65 (100)
6	Right Target	Subsidised fertiliser is received by farmers who are genuinely entitled to it according to RDKK data	0 (0)	65 (100)

Source: Processed data, 2026
Note: TT: Incorrect
T: Correct

Correct Type

The correctness of the fertiliser type relates to the suitability of the fertiliser received by farmers to the needs of the crops and government recommendations. Selecting the correct type of fertiliser is crucial because each crop has different nutrient requirements. If

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the type of fertiliser received does not match the needs of the land and crops, agricultural productivity may decline. Table 1 shows that 60 respondents stated it was appropriate (T), whilst 5 respondents stated it was inappropriate (TT). These results indicate that the majority of farmers have received the type of fertiliser that is appropriate for the needs of the crop and government recommendations. The type of subsidised fertiliser received by farmers corresponds to the fertiliser provided by the government. The appropriateness of the fertiliser type is crucial in supporting crop growth and increasing agricultural production. In line with the research Maman et al (2021), it is known that the application of subsidised fertiliser influences the productivity of irrigated rice; however, based on partial tests, it is found that the productivity of irrigated rice is only influenced by the application of subsidised Urea and NPK fertilisers. Table 1 indicates that some respondents still reported inaccuracies, suggesting that some farmers received fertiliser types that were not fully suited to their land's needs, thereby preventing optimal fertilisation effectiveness.

Observations revealed that discrepancies in fertiliser types still occur due to stock shortages at official outlets and weak distribution coordination. This situation leads farmers to use alternative fertilisers that may not necessarily meet the plants' needs. According to Kementerian Pertanian (2020), the distribution of subsidised fertiliser must be based on farmers' needs as outlined in the RDKK to ensure more effective and efficient fertiliser use. In line with research Halomoan et al (2024), it was shown that the distribution of subsidised fertiliser based on the correct type within the Patamuan farmers' group was categorised as inappropriate, as only two types of subsidised fertiliser were distributed by retail outlets to farmers, whereas according to the 2021 technical guidelines, there are seven types of fertiliser distributed by the government to farmers.

Correct Quantity

Correct quantity refers to the alignment between the amount of fertiliser received by farmers and the land's requirements as set out in the Definitive Group Requirements Plan (RDKK). The availability of sufficient quantities of fertiliser is crucial to the success of farming operations. A shortage of fertiliser can hinder crop growth, whilst excessive use of fertiliser can degrade soil quality and increase production costs. Regarding the 'correct quantity' indicator, 50 respondents stated it was correct and 15 respondents stated it was incorrect. This indicates that the majority of farmers have received fertiliser in accordance with land requirements and the allocation in the Definitive Group Needs Plan (RDKK). However, there are still farmers who feel that the amount of fertiliser received is insufficient for their farming needs.

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The results of this study are consistent with research Nuryanti et al (2023), which states that the appropriate amount of fertiliser can influence crop yields, which must be maintained at a constant level with the correct amount of fertiliser; as soil and plants are affected by either a shortage or excess of fertiliser, precise application is therefore required. A common problem is the limited quota of subsidised fertiliser compared to farmers' actual needs. This results in some farmers not receiving fertiliser commensurate with their land requirements. Research by Sari & Nugroho (2022) indicates that the limited allocation of subsidised fertiliser is a key factor in farmers' low satisfaction with the fertiliser distribution system in major agricultural centres.

Accurate Pricing

The accuracy of pricing is measured based on the alignment of the fertiliser prices paid by farmers with the Maximum Retail Price (MRP) set by the government. The setting of the MRP aims to ensure fertiliser remains affordable for farmers and to prevent price manipulation at the distributor and retail levels. Table 1 shows that 45 respondents stated the prices were accurate, whilst 20 respondents selected the 'inaccurate' category. These results indicate that the prices of subsidised fertiliser paid by farmers are in line with the Maximum Retail Price (MRP) set by the government. This situation reflects that supervision of the distribution and sale of subsidised fertiliser at authorised retail outlets is functioning effectively, meaning no price deviations have been found in the field. Interviews with one subsidised fertiliser retail outlet revealed that in some areas, fertiliser prices still exceed the MRP due to additional distribution costs and limited supervision.

Research Kumalasari et al (2023) indicates that if prices do not align with the government's set maximum retail price, the distribution of subsidised fertiliser has an effectiveness rate of 5% (ineffective). This situation can be detrimental to farmers as it increases agricultural production costs. According to Minister of Agriculture Regulation No. 10 of 2022 on Procedures for Determining the Allocation and Maximum Retail Price of Subsidised Fertiliser, authorised outlets are obliged to sell fertiliser in accordance with the MRP set by the government.

Accurate Time

The timeliness of fertiliser distribution has a significant impact on the success of the growing season. Fertiliser must be available when farmers need it, particularly during the early stages of crop growth. Delays in distribution can lead to a decline in productivity due to disruptions in the fertilisation process. The on-time indicator shows that 25 respondents

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stated it was on time, whilst 40 respondents stated it was not on time. This indicates that the distribution of subsidised fertiliser is generally available but is not yet aligned with the growing season and farmers' needs.

In line with Savitri et al (2024), it is stated that the timing of fertiliser distribution has not been optimised. This is because the arrival of subsidised fertiliser at retail outlets and the time when it can be collected by farmers' groups varies from month to month—sometimes at the beginning of the month, sometimes at the end—with no fixed schedule for when farmers can collect the fertiliser. Consequently, some farmers still experience delays in obtaining fertiliser. Delays in fertiliser distribution can impact crop cultivation processes, as fertilisation not carried out on time can reduce agricultural productivity. Factors influencing distribution delays include transport issues, limited warehouse stock, and suboptimal administrative distribution processes. Research by Maman et al (2021) indicates that the timeliness of fertiliser distribution has a significant relationship with the productivity of rice farming operations.

Proximity

Proximity relates to the ease with which farmers can access fertiliser through official outlets or designated distribution points. Distribution at convenient locations makes it easier for farmers to obtain fertiliser at a lower transport cost. All 65 respondents indicated that the distribution points were conveniently located. These results indicate that farmers do not face difficulties in obtaining subsidised fertiliser because it is available at official outlets or easily accessible distribution points. Research Wijayanti et al (2024) indicates that the most suitable location for farmers to purchase subsidised fertiliser is at Level IV outlets. Level IV refers to registered official outlets or retailers. The appropriateness of distribution points is a key factor in ensuring farmers' smooth access to subsidised fertiliser.

In line with the study Sumbarwati (2016), it is known that the key factors in the success of subsidised fertiliser distribution include the commitment of official distributors to carry out distribution, the availability of subsidised fertiliser at official distributors, the continuity of subsidised fertiliser supply at the farmer level, the ability of implementing officials to communicate all rules and guidelines, the presence of farmers' groups in adopting new innovations, the institutional performance of subsidised fertiliser distributors, and the management capabilities of subsidised fertiliser distributors. Therefore, the government needs to strengthen the distribution network to reach rural areas so that subsidised fertiliser can be accessed by all farmers.

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Targeting Accuracy

Targeting accuracy indicates that subsidised fertiliser is received by farmers who are genuinely entitled to it, in accordance with RDKK data. Targeting accuracy is a crucial aspect because subsidised fertiliser is a form of government assistance aimed at improving the welfare of smallholder farmers. Table 1 on the target accuracy indicator shows that all respondents also agreed, with a total of 65 respondents. This indicates that subsidised fertiliser has been received by farmers who are genuinely entitled to it according to RDKK data. Target accuracy reflects that the data collection and verification system for subsidised fertiliser recipients has functioned effectively, enabling the distribution of fertiliser to be carried out more fairly and effectively.

According to Soares (2013), it is known that the RDKK compiled by farmers' groups is a key component in the subsidised fertiliser distribution system; therefore, more intensive guidance and support are required for farmers' groups to ensure that the mechanism for planning subsidised fertiliser requirements reaches an ideal state. In practice, issues such as discrepancies in recipient data, farmers not yet registered in the RDKK, and indications of misuse in the distribution process are still encountered. Consequently, the regular updating of farmer data and the digitisation of the distribution system are crucial steps towards improving the accuracy of subsidised fertiliser distribution.

CONCLUSION

Overall, the application of the '6 Rights' principle in the distribution of subsidised fertiliser is crucial to the effectiveness of the fertiliser subsidy programme. The higher the level of distribution accuracy, the greater the potential for increased agricultural productivity and farmers' welfare. Conversely, if any one of these indicators is not met, the objectives of the fertiliser subsidy programme cannot be fully achieved. Regarding the distribution of subsidised fertiliser in Harau Sub-district, Lima Puluh Kota Regency, it can be concluded that, in general, the distribution of subsidised fertiliser has proceeded fairly well. This is evident from the fact that the majority of indicators fall within the 'accurate' category, particularly the indicators for accurate pricing, accurate location, and accurate targeting, which all respondents stated were accurate. This situation indicates that the price of subsidised fertiliser has been in line with the Maximum Retail Price (MRP), that the distribution of fertiliser is easily accessible to farmers through official outlets, and that the fertiliser has been received by eligible farmers in accordance with RDKK data.

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