

## ANALYSIS OF THE EFFECTIVENESS OF THE FERTILIZER SUBSIDY POLICY ON RICE FARMERS IN WAJO DISTRICT

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### ABSTRACT

The fertilizer subsidy policy is a government program with the aim of supporting the agricultural sector by providing input subsidies through setting the highest retail price (HET) for fertilizer subsidies. The purpose of this study is to analyze the effectiveness of the fertilizer subsidy policy on rice farmers in Wajo Regency using four indicators of the effectiveness based on the fertilizer subsidy policy indicators and criteria, namely the right price, the right place, the right time, and the right amount. This study uses a survey method with a qualitative and descriptive approach. In this study, the determination of the sample used the cluster sampling with the Two-Stage Cluster Sampling in which the sampling was carried out in two stages. The data analysis method used to describe the procedure for implementing the fertilizer subsidy policy is descriptive analysis, while the data analysis method used to analyze the effectiveness of the fertilizer subsidy policy is descriptive qualitative analysis. The results of this study are the level of effectiveness of the fertilizer subsidy policy based on four indicators of overall success with an average indicator of 46.46 percent; so that it can be categorized as not effective.

**Keywords:** *effectiveness, fertilizer subsidy policy*

### BACKGROUND

Indonesia is an agricultural country, which places agriculture as the main sector in the economy, so that there are various government policies to support the production of the agricultural sector. The agricultural sector should be prioritized because agriculture contributes to food security. The steps taken by the government in implementing food policy are production input subsidies, price policies, and reforming food institutions. One of the production input subsidy policies is the fertilizer subsidy policy (Kholis & Setiaji, 2020). Subsidies are a form of government assistance to reduce the burden on the community by paying part of the price that should be paid by the community or certain community groups to provide goods or services concerning the interests of many people's lives. One of the subsidies in the agricultural sector is the fertilizer subsidy. Subsidized fertilizer is an aid issued by the government to farmers in order to improve the quality and production of agricultural or plantation products in Indonesia (Rigi, Raessi, & Azhari, 2019).

According to Bappenas in Zulaiha, Nurmalina, Sanim (2018), the fertilizer subsidy policy was first set around the 1970s and has continued to be refined until the fertilizer subsidy is established with a closed distribution system until now. Fertilizer subsidies using a closed pattern began in 2009,

marked by the implementation of a definitive plan for group needs (RDKK), in which a definitive plan for group needs from each region was made in advance to make it easier to estimate the volume of fertilizer needs and the required costs. Efforts made by the government to increase the productivity and quality of food commodities are through the application of appropriate cultivation technology by using production facilities according to the recommended technology in each region throughout Indonesia. One of the means of production that has a very important role in increasing the productivity and quality of agricultural products is fertilizer. In this case, the subsidized fertilizer program refers to the effective use of fertilizers, namely balanced fertilization according to site-specific recommendations or technical standards for the use of recommended fertilizers, in balanced fertilization sufficient capital is needed but in general the ability of farmers' capital is very limited in financing farming needs (Hariningtyas, 2014).

Thus, the determining factor for the success of rice production which is the family's economic livelihood for farmers is the availability of subsidized fertilizers. The use of appropriate fertilizers can increase the productivity of agricultural commodities, one of which is rice productivity. With the convenience of rice farmers in getting fertilizer, it will certainly make farmers motivated to increase rice production by carrying out better planting and maintenance. Meanwhile, the absence of fertilizers in the market will make farmers suffer losses because the yields will not be maximized, even sometimes due to a lack of fertilizers, rice plants do not produce as expected by rice farmers. The implementation of the government's policy on fertilizer subsidies is still ongoing and is expected to have a major impact on farmers to help reduce farmers' fertilizer costs. In addition, the fertilizer subsidy is expected to have a positive effect on the agricultural sector in increasing productivity and production of agricultural commodities (Tanjung, 2018). The effectiveness of the fertilizer subsidy policy is measured based on six indicators, namely place, type, time, quantity, quality, and price so that farmers can use fertilizer according to their needs.

The effectiveness of fertilizer subsidies is very important to increase rice production. Effectiveness is generally used to measure the level of success in carrying out an activity or activities carried out (Mulyadiana, 2017). The fertilizer subsidy policy is also inseparable from problems such as unfair and untargeted distribution, market dualism, excessive use of fertilizers, subsidized costs that are greater than the benefits, lack of supervision and sanctions for price discrimination applied between the food and non-food crops sub-sectors. Food, opening up opportunities for the flow of fertilizers from the food crops sub-sector to the non-food sub-sector and a tendency to export. This situation can be seen from the scarcity of fertilizer from the food crop sector and the increase in fertilizer prices in the market. Therefore, it is necessary to have a successful fertilizer subsidy policy, the success of this policy is compatibility, if the method of implementing the policy is carried out systematically in the sense that it is in accordance with the fertilizer subsidy policy, on the other hand, if the service and public participation in this policy are static, it is necessary to improve better methods. Again or if necessary the policy is terminated. Effectiveness is generally used to measure the level of success in carrying out an activity or activities carried out. Thus, effectiveness is an approach used to see whether or not the specified goals or programs have been achieved. Therefore, based on the background, the purpose of this research is to analyze the effectiveness of the fertilizer subsidy policy on rice farmers in the Wajo Regency.

**RESEARCH METHODS**

Research on analysis of the Effectiveness of Fertilizer Subsidy Policy on Rice Farmers in Wajo Regency uses survey methods with qualitative and descriptive approaches. This method focuses on solving problems that exist in the present and actual. This research was conducted in Wajo Regency. The determination of the research area was carried out by purposive sampling, which was determined intentionally by considering the objectives of the study. Wajo Regency was chosen with the consideration that Wajo Regency is the area with the largest paddy field area and is also one of the centers of rice production in South Sulawesi Province. Wajo Regency have a total rice field area is 100,744 ha and 48,673 rice farmers (Table 1).

**Table 1.** Rice Field Area by District

District	Rice Field Area (ha)	Number of Farmers
1. Sabbangparu	5,738	2,869
<b>2. Tempe</b>	<b>911</b>	355
3. Pammana	6,229	3,114
4. Bola	12,128	6,064
5. Takkalalla	10,832	5,416
6. Sajoanging	8,435	4,217
7. Penrang	8,175	4,087
<b>8. Majauleng</b>	<b>13,249</b>	6,830
9. Tanasitolo	5,838	2,917
10. Belawa	8,538	2,469
11. Maniangpajo	5,874	2,937
12. Gilireng	3,629	1,814
13. Keera	5,850	2,925
14. Pitumpanua	5,318	2,659
<b>Wajo</b>	<b>100,744</b>	<b>48,673</b>

Source: BPS Wajo Regency

The large area of paddy fields indicates the use of fertilizers by farmers is also getting bigger in lowland rice farming. The types and sources of data used in this study are primary data and secondary data. Primary data is a data source that directly provides data to data collectors (Tangkumahat, Panelewen, & Mirah, 2017). The primary data sources in this study are data that taken from interviews with sample farmers, namely rice farmers receiving fertilizer subsidized by using a list of questions that have been prepared. While the data Secondary is research data obtained from a second source or sources secondary data from the data we need (Widayati & Putri, 2019). Secondary data that used in this study is complementary data including writings in the form of books, journals related to this research, BPS Wajo Regency and data other support from related institutions.

In this study, the determination of the sample uses the Cluster Sampling technique with the Two-Stage Cluster Sampling in which the sampling is carried out in two stages, namely the first stage, selecting several clusters in the population as a sample and the second stage selecting elements from each selected cluster. In the first stage, the population was selected based on the total area of rice fields in each sub-district. Two sub-districts were selected with the largest paddy field area and the smallest

paddy field area rice fields largest and smallest proportional random sampling. The number of samples taken is calculated using the slovin formula, as follows:

$$n = N/(1+Ne^2)$$

$$n = 7,185/1 + 785 (0.1)^2$$

$$n = 98.62 \text{ or rounded up to } 99$$

Information:

- N : Total Population
- n : Number of Samples
- e<sup>2</sup> : Error Tolerance (10%)

By the formula we got the total samples 99 farmers from two sub-districts (Table 2).

**Table 2.** Reseach Sample

No.	District	Population	Calculation	Samples
1.	Majauleng	6,830	(6,830/7,185) x 99	70
2.	Tempe	355	(355/7,185) x 99	29
<b>Total</b>		<b>7,185</b>		<b>99</b>

Source: Secondary Data Processed, 2021

According to Mania (2017), observation is a way or method of collecting data information or data carried out by observing and recording systematically to the phenomenon that is the target of observation. Collection techniques data is the steps taken to obtain data and information needed in research (Fransisca & Wijoyo, 2020). The data collection techniques used in this research are frank and covert observation. Frank observation is a technique in which the researcher reveals frankly to informants or the community or the public that the researcher is making observations so that the entire research process is known. Obscurant observations are made if there is data that is kept secret by the researcher in making observations so that the researcher is not forthright about the observations being made to maintain the confidentiality of the data.

In this case, the researcher is frank to the data source in the data collection, that the researcher is conduct research. But in certain situation researchers are also allowed not frankly or disguised in observation, this is to avoid if a data sought is confidential. Interview is a data collection technique that conducted through face-to- face and direct question and answer between data collectors and researchers to sources or data sources (Borman & Helmi, 2018). With interview, the researcher will know in- depth things about the participants in interpreting situations and phenomena that occur where this is not found in observations. The form of interview chosen is structured interview. That is, researchers already know with certainty the information to be obtained.

Therefore, in conducting interviews, researchers have collected instruments research in the form of written questions and answer choices. The tools used during the interview were voice recorders, cameras, and assistive devices other. Recording is a technique used to collect secondary data needed in research, namely by recording data that already exists in the agencies or institutions related to research. Researchers recorded data that obtained from BPS Wajo Regency and other supporting data from related agencies. Use the following table for the heading style and font.

This study uses a survey method with a qualitative and descriptive approach. The survey

method is dissecting and skinning as well as recognizing problems and getting justifications for current conditions and practices. Based on the research objective, namely to analyze the effectiveness of the fertilizer subsidy policy on rice farmers in Wajo Regency based on four main indicators, namely the right price, right place, right time, and right amount, Qualitative descriptive analysis was used (Table 3). The effectiveness of the fertilizer subsidy policy is calculated by the effectiveness formula in the table below based on four indicators, namely the right price, the right place, the right time, and the right amount (Table 4).

**Table 3.** Criteria for the Four Indicators

No.	Indicator	Criteria
1.	Right Price	1. Must match the highest retail price (HET) 2. Urea fertilizer cost Rp.1,800/kg, NPK for Rp. 500/kg
2.	Appropriate place	1. Farmers must be at the authorized retailer inside village 2. Authorized retailers are individuals, farmer groups and business entity, whether in the form of a legal entity or not a legal entity domiciled in the district and/or village appointed by the distributor with main activity is selling subsidized fertilizer in the area of direct responsibility.
3.	On Time	1. Always there every farmer needs it.
4.	Appropriate Amount	1. Must be in accordance with the government use of fertilizer by government 2. Must be in accordance with the proposed RDKK 3. Urea Fertilizer as much as 200 kg/ha, NPK 300 kg/ha.

Source: Ministry of Agriculture, 2017.

**Table 4.** Effectiveness Formula the Fertilizer Subsidy Policy

Right Price	Right Place
Percentage of price accuracy is calculated by formula: Price Accuracy = $\frac{nh}{N} \times 100\%$	Percentage of place accuracy is calculated with the formula: Place Accuracy = $\frac{nt}{N} \times 100\%$
Description: 1. nh : number of sample farmers who get fertilizer according to HET (person) 2. N : total number of sample farmers (person)	Description: 1. nt : number of sample farmers who buy fertilizer at authorized retailers within the village (person) 2. N : total number of sample (person)

Punctuality (Timing)	Accuracy Amount
Percentage on time is calculated with the formula: Price accuracy = $\frac{nw}{N} \times 100\%$	Percentage accuracy of the count is calculated with the formula: Price acciracy = $\frac{nj}{N} \times 100\%$
Description: 1. nw : number of sample farmers who believes that fertilizer is available when needed (person) 2. N : total number of sample (person)	Description: 1. nj : number of sample farmers who do fertilizing according to the recom-mended dose (person) 2. N : total number of sample farmers (person)

Source: Asriandi, 2016

Measurement of the price indikator is done by comparing the price determined by the government (HET) with the actual price obtained by farmers. To find out the difference in the average price of fertilizer at the farmer level with that recommended by the government, the formula (Marisa, 2011)

$$\Delta P = Pr - Pp$$

Information:

$\Delta P$  : Price difference (Rp)

Pr : Price received by reponden (Rp)

Pp : Highest Retail Price (HET) from the government (Rp)

After knowing the difference between the actual price and the HET. After that, a comparison is made between respondents who get the actual price equal to HET with respondents who get the actual price not the same as HET. The percentage of price accuracy is calculated by the formula as (Asriandi, 2016):

$$\text{Price accuracy} = \frac{nh}{N} \times 100\%$$

Information:

nh : Number of sample farmers who get fertilizer according to HET

N : Number of all respondents

Measurement of the exact number of indicators is carried out by how to compare the amount of recommended fertilizer use with that used by farmers. To find out the difference in the average amount of fertilizer used by farmers with that recommended by the government, the formula (Marisa, 2011):

$$\Delta Q = Qr - Qp$$

Information:

$\Delta Q$  : Difference in amount (kg/ha)

Qr : Amount of fertilizer used by farmers respondents (kg/ha)

Qp : Amount of fertilizer recommended by the government (kg/ha)

After obtaining the difference between the actual amount and the recommended amount. Next, a comparison is made between respondents whose fertilizer in accordance with the recommendation in the form of percent using the formula:

$$\text{Price accuracy} = \frac{nj}{N} \times 100\%$$

Information:

- nj : Number of respondents who use fertilizer according to the recommended dose (kg/ha)
- N : Total respondents

Measurement of indicators on the right place is based on the kiosk where the respondent buys fertilizer, namely at an official kiosk that is in accordance with the RDKK or not. Furthermore, a comparison is made between respondents who buy fertilizer at official kiosks in accordance with the RDKK or not in the form of percent with the following formula:

$$\text{Location Accuracy} = \frac{nt}{N} \times 100\%$$

Information:

- nt : Number of respondents buying fertilizer at official retailers according to RDKK
- N : Total number of respondents

The measurement of the indicator on time is measured based on the opinion of the respondent about whether or not fertilizer is available when it is needed by the respondent. Furthermore, a comparison is made between respondents who think that fertilizer is always available whenever needed with respondents who think that there is still a shortage of fertilizer in the form of percent using the following formula:

$$\text{On-Time} = \frac{nw}{N} \times 100\%$$

Information:

- nw : Number of respondents who think fertilizer is available when needed
- N : Total number respondents

When the effectiveness level of each indicator has been obtained, then the effectiveness level is classified according to the effectiveness value criteria classification. The criteria for the effectiveness of the fertilizer subsidy policy based on the four appropriate indicators are presented in Table 5.

**Tabel 5.** Effectiveness Criteria of Policy

Effectiveness Percentage Interval	Criteria
$K \leq 40\%$	Very in-effective
$40\% \leq k 60\%$	In-effective
$60\% \leq k 80\%$	Enough
$80\% \leq k 90\%$	Effective
$90\% \leq k 100\%$	Very effective

Source: Asriandi, 2016.

## RESULT AND DISCUSSION

Fertilizer is an important component in rice production. As explained in the previous chapter regarding the characteristics of respondent farmers, the second largest expenditure on production costs is fertilizer. So that the fiscal policy program is needed in order to fulfill the needs of farmers' fertilizers at cheap and easily available prices so as to improve the welfare of farmers. The fertilizer policy currently implemented by the government is the fertilizer subsidy policy. The fertilizer subsidy

policy currently applied is the Highest Retail Price (*Harga Eceran Tertinggi* - HET) received by farmers for each type of fertilizer.

The distribution of fertilizer subsidies that is currently being implemented by the government is an open system where farmers directly buy fertilizers from official retailers. Starting in 2018 farmers who will buy fertilizer must use a farmer card for each transaction, but this is still not optimal in its implementation so there are still many transactions that are carried out without using a farmer card. The use of the farmer card is actually intended so that subsidized fertilizer distributors are right on target because loyal fertilizer purchases at official retailers must use the farmer card, but in the reality the implementation of the use of farmer cards is still not running. Subsidized fertilizer supervision to determine the effectiveness of the subsidized fertilizer policy is through the four principles, namely the right price, the right amount, the right time, and the right place. The results of the research on the effectiveness of the fertilizer subsidy policy on rice farmers in Wajo Regency are explained as follows.

The first indicator used to determine the effectiveness of the fertilizer subsidy is the right price. The level of effectiveness of fertilizer subsidies based on the right price indicator is measured by comparing the price of fertilizer received by respondents with the price of fertilizer according to the Highest Retail Price. There are actually five types of fertilizers that receive fertilizer subsidies from the government, namely urea, NPK (PHONSKA), SP-36, ZA, and organic (PETROGANIK) fertilizers. However, from the results of the research respondents only use three types of fertilizers for their rice production process, the three types of subsidized fertilizers are fertilizers that are considered to be in accordance with the required soil nutrient needs. The subsidized fertilizers used are Urea, NPK, and SP-36 fertilizers. The results shown in Table 7.

From the research results, urea fertilizer has the HET set by the government, which is Rp. 1,800/kg. But in the reality the price of Urea fertilizer obtained by respondents is on average Rp. 2,400/kg, so there is a difference of Rp. 600/kg between the price obtained and the price that should be. In other words, respondents have purchased urea fertilizer at a price 33.33% above than the HET for each kilogram. For subsidized fertilizers of the NPK type, the highest retail price set by the government is Rp. 2,300/kg.

The average purchase price of respondents for subsidized NPK fertilizers is Rp. 2,600/kg, which means there is a difference of Rp. 300/kg. So, on average, respondents buy subsidized NPK fertilizer with a price difference of 13.04% more expensive than the HET for each kilogram. For the type of subsidized fertilizer SP-36, the HET is Rp. 2,000/kg. From the results of the study, the average respondent obtained the fertilizer at a price of Rp. 2,400/kg; so that there was a price difference of Rp. 400/kg from the actual price with the highest retail price. Based on these data, respondents buy subsidized Sp-36 fertilizer which is 20% more expensive than the HET per kilogram of Sp-36 subsidized fertilizer (Table 6).

**Table 6.** Average Price of Subsidized Fertilizer Used by Respondents

Description	Urea	NPK	Sp-36
Respondents Average Purchase Price	2,400	2,600	2,400
Highest Retail Price	1,800	2,300	2,000
Price Difference	600	300	400
Percentage of price difference	<b>33,33</b>	<b>13,04</b>	<b>20</b>



From the three data, it can be said that the three types of subsidized fertilizers have an average purchase price that is higher than the HET (Table 7).

**Table 7.** Percentage Level of Accuracy of Subsidized Fertilizer Prices

Type of Fertilizer	Compatibility with HET	Total	Percentage %
Urea	Exactly inaccurate	0	0.0
NPK	Exactly inaccurate	0	0.0
SP-36	Exactly inaccurate	0	0.00
<b>Total</b>	<b>Exactly inaccurate</b>	<b>0</b>	<b>0.00</b>

This is of course very detrimental to farmers because the acquisition of fertilizer is more expensive than the set price, considering that the fertilizer needs by the farmers themselves have a very important role and the need is quite large for each growing season, so that with the difference in the actual price of subsidized fertilizers obtained by farmers, of course, will have an impact on the swelling of farmers' production costs for fertilizers. So, this will certainly affect the level of effectiveness of the fertilizer subsidy policy.

The second indicator that determines the level of effectiveness of the fertilizer subsidy policy is the right place. The right place indicator that is mean is that farmers as recipients of fertilizer subsidies can get subsidized fertilizers at official retail kiosks that have been determined in the RDKK of each farmer group. Every authorized retailer should only serve purchases for farmers whose quota is only in accordance with the RDKK, so that the distribution of subsidized fertilizers can be in the right place.

The third indicator of the effectiveness of fertilizer subsidy policies is timeliness. Timely indicator is a condition of fertilizer physically available when needed by farmers. In other words, there is no shortage or delay in the distribution of subsidized fertilizers, so that the stock of fertilizer is always available and must be available at least one week before the planting season (Table 8).

**Table 8.** Percentage of Timeliness of fertilizer Subsidy Policy

Timeline Indicator Number	Number of Respondents	Percentage %
Fertilizer Always Available	99	100
Fertilizer None	0	0.00
<b>Total</b>	<b>99</b>	<b>100</b>

The fourth that determines the effectiveness of the fertilizer subsidy policy is the correct amount indicator. The exact amount is defined as a condition where the amount/dose of fertilizer needed by the farmer is met, which is indicated by the fulfillment of the recommended dose or the farmer's habitual dose. Provision of the right fertilizer will make the plant periodic optimally which can be seen from plant height, stem diameter, number of leaves, and number of stems. The recommendation for the use of subsidized fertilizers according to the concept of balanced fertilization using compound fertilizers is Urea 200 kg/ha and NPK (PHONSKA) 300 kg/ha. The result provided in Table 9.

**Table 9.** Percentage Correct Amount of The Fertilize Subsidy Policy

Accuracy Total	Number of Respondents	Percentage (%)
As recommended	17	17.17
Not match as recommended	82	82.83
1. Below	78	
2. Above recommended	4	
<b>Total</b>	<b>99</b>	<b>100</b>

Indicators used in this study will determine the effectiveness of fertilizer subsidies in the research area. The effectiveness of this policy is measured based on the percentage of each indicator. If the average percentage of all indicators is the same or more than 80%, then the fertilizer subsidy policy can be categorized as effective. If the level of effectiveness is below 80%, then the fertilizer subsidy policy cannot be categorized as effective. The results of the overall indicators of the effectiveness of the fertilizer subsidy policy will be shown in Table 10.

**Table 10.** Percentage Table Fertilizer Subsidy Policy in Wajo Regency

No.	Effectiveness Indicator	Accurate (%)	Inaccurate (%)
1.	Right Price	0.00	100
2.	Right Place	68.68	31.21
3.	Right Time	100	0.00
4.	Right Amount	17.17	82.83
	<b>Average</b>	<b>46.46</b>	<b>54</b>

Source: Research Data Processing Results

Based on the Table 10 it can be seen the overall results of the four indicators that determine the effectiveness of the fertilizer subsidy policy obtained from the 99 respondents who were the samples of this study. The average of the four indicators is 46.46% so that the level of effectiveness of the fertilizer subsidy policy on rice farmers in Wajo Regency based on the four indicators is categorized as ineffective. Therefore, it is necessary to improve both in terms of distribution, supervision, and other matters that support the realization of an effective fertilizer subsidy policy in Wajo Regency.

## CONCLUSION AND SUGGESTION

Based on the results of research on the effectiveness of the fertilizer subsidy policy on rice farmers in Wajo Regency based on four indicators of overall success, it can be categorized as ineffective. Of the four indicators, two indicators are categorized as effective, namely the right time indicator and the right place indicator, while the right price indicator and the right amount indicator for the fertilizer subsidy policy cannot yet be categorized as effective due to the problem of the gap in subsidized fertilizer prices to farmers. Line III (distributor) sells subsidized fertilizer above HET to Line IV (official retailers) because there are additional transportation and loading costs, causing retailers to also sell subsidized fertilizer to farmers above HET. And for the right indicator the number is categorized as not effective because the use of fertilizers by farmers is not in accordance with the recommendations that have been set.

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