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Impact Of Fertilizer Subsidy Policy On Fertilizer Use In Sukorambi Sub-District, Jember

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Abstract: Fertilizer subsidy is one of the government's efforts so that farmers can access fertilizer needs for their farms at more affordable prices, so that it is expected to encourage increased agricultural production in order to achieve food security. Healthy rice crop is a process in rice cultivation that prioritizes the use of natural ingredients that are environmentally friendly in the sense that they remain effective but still maintain productivity, production and quality of agricultural products. This study aims to determine the comparison of whether the reduction of subsidized fertilizer policy will affect the use of fertilizers in Sukorambi Jember District. Sampling using quota sampling method as many as 40 samples, consisting of 20 farmer group members who apply healthy agriculture and 20 farmer group members who apply conventional agriculture. The results showed that the comparison of the use of organic fertilizer before and after the change in fertilizer subsidy policy increased. The use of urea and NPK fertilizers in healthy rice decreased, but the use of KCL and ZA fertilizers remained. While the use of urea, NPK, and KCL fertilizers on conventional rice increased, but the use of ZA fertilizer remained.

Keywords: fertilizer subsidy policy, healthy rice, impact of fertilizer subsidy

INTRODUCTION

Rice is the main food commodity of the Indonesian people, almost all people in this country consume rice every day. This causes the rice commodity to have a very strategic value, in addition to controlling the lives of many people, it can also be used as a parameter for the economic and social stability of the country. If there is a scarcity or unmet need for rice in the community, it will have an impact on inflation and social turmoil. (Rohman & Maharani, 2018).

The role of the community in maintaining the availability of rice is to continue to plant rice and increase production. Meanwhile, the role of the government is to maintain the availability of supporting materials for farmers to carry out rice production. One of the supporters that can increase production is fertilizer. Fertilizer is a chemical that has an important role in helping plant growth. However, the high price makes farmers slightly reduce the portion of fertilizer purchases which will interfere with plant growth. Various steps have been taken by the government in implementing food policies such as production input subsidies, price policies and revamping food institutions. One of the policies through production input subsidies is the fertilizer subsidy policy. (Katarina Hildegardi Estriana Nino et al., 2022)..

According to Syafa'at (2006) and Rachman (2017) fertilizer subsidies are one of the government's efforts so that farmers can access fertilizer needs for their farming businesses at more affordable prices, so that it is expected to encourage increased agricultural production in order to achieve food security.

In 2022 the government through the policy regulation of the Minister of Agriculture Regulation No. 10 of 2022 began to limit the provision of subsidized fertilizers, therefore the researchers wanted to analyze the impact of fertilizer subsidy policies on fertilizer use in Sukorambi Jember District. The goal is to determine the comparison of whether the reduction of subsidized fertilizer policy will affect the use of fertilizer in Sukorambi Jember District.

METHOD

The method used was quantitative descriptive method. The research location was Karangpring Village and Klungkung Village, Sukorambi Sub-district, Jember Regency. The number of samples in this study was determined by quota sampling, namely 4 farmer group members taken from each farmer group. There were 6 farmer groups in Karangpring Village and 4 groups in Klungkung Village. Each farmer group sampled 4 members with details of 2 healthy rice farmers and 2 conventional farmers, so the total number of samples was 40 people. The data analysis method to answer the research objectives uses descriptive analysis by finding the average value of use per hectare, so that it can be seen whether there is a difference between before the reduction of fertilizer subsidy policy and after the reduction of fertilizer subsidy policy.

RESULTS AND DISCUSSION

Comparison of organic fertilizer use before and after fertilizer subsidy policy changes in healthy rice farmers

Organic fertilizer is a type of fertilizer that comes from natural materials that contain organic matter, such as plant, animal, or other organic waste. Organic fertilizers help sustain soil resources, increase land productivity and minimize negative impacts on the environment. In addition, organic fertilizers also support healthy crop practices that reduce chemicals.

Healthy plants are a cultivation method adopted from one of the principles of Integrated Pest Management (IPM). Where the plant cultivation strategy integrates all environmentally friendly cultivation technologies so as to produce healthy plants (Ratna, 2019). The cultivation of healthy crops in Sukorambi District is rice. Healthy rice cultivation is a process in rice cultivation that prioritizes the use of natural ingredients that are environmentally friendly in the sense that they remain effective but still maintain productivity, production and quality of agricultural products. This healthy rice program has been carried out since 2021, which is assisted by PPL of the Food Crops, Horticulture and Plantation Office of Jember Regency.

Table 1. Average use of organic fertilizer before and after fertilizer subsidy policy changes

Fertilizer type	Before subsidized fertilizer reduction policy (kg/ha)	After subsidized fertilizer reduction policy (kg/ha)
Organic	2.000	3.000

Source: Primary Data Processed (2024)

In Table 1. Shows that there is a difference between the use of organic fertilizer before the subsidized fertilizer reduction policy and the use of organic fertilizer after the subsidized fertilizer policy. This is shown in total by 2,000Kg/ha and 3,000Kg/ha respectively. Data from soil research conducted by the Soil Research Center, Ministry of Agriculture (2019) shows that 66% of paddy field soils fall into the low carbon category with 4% organic C content. Meanwhile, to obtain optimal productivity, organic carbon requires around 2.5%. Other research results show that 79% of rice fields in Indonesia have very low organic matter. Therefore, it is necessary to restore soil conditions by adding a minimum of 2 tons of organic fertilizer per ha per season. In addition to increasing soil organic matter content, organic fertilizers are very beneficial for the growth and development of microbes and fauna in the soil.

Comparison of inorganic fertilizer use before and after fertilizer subsidy policy changes in healthy rice farmers and conventional farmers

The use of chemical fertilizers in healthy rice farming in Sukorambi Jember District includes Urea fertilizer, NPK, KCL, ZA. Urea fertilizer is a fertilizer with high levels of nitrogen element content (Erlanda, M.Si, and Dr. Ir Feira Budiarsyah Arief, 2021). Urea fertilizer functions as making plant leaves greener and fresher, can accelerate plant growth. NPK fertilizer is a compound fertilizer containing nutrients, nitrogen, phosphorus, and potassium in granular form (Kaya et al, 2020). The benefits of NPK fertilizer can help plant growth to develop optimally. The function of KCl fertilizer is to increase crop yields, strengthen plant stems, more resistant to disease attacks, increase resistance to damage. (Center for research and development of rice plants, 2018). ZA fertilizer is one type of inorganic herbicide that can kill weeds (nuisance plants). The benefits of ZA fertilizer can increase crop yields, grain quality, plant resistance to pests and diseases, drought, and improve soil structure. The following is the average use of inorganic fertilizer in healthy rice per MT per hectare

Table 2. Average inorganic fertilizer use in healthy rice per MT per hectare

Fertilizer type	Before subsidized fertilizer reduction policy (kg/ha)	After subsidized fertilizer reduction policy (kg/ha)
Urea	339,9	237,82
NPK	400	200
KCL	55,85	55,85
ZA	171,43	171,43

Source: Primary Data Processed (2024)

Based on Table 2, it is known that the average use of Urea fertilizer on healthy rice before the policy of subsidized fertilizer reduction amounted to 339.9/ha, but after the policy of subsidized fertilizer reduction, the use of urea fertilizer became 237.82/ha. Then the use of NPK fertilizer on healthy rice before the subsidized fertilizer reduction policy was 400/ha, but after the subsidized fertilizer reduction policy the use of NPK fertilizer became 200/ha. The use of KCL fertilizer on healthy rice before the subsidized fertilizer reduction policy was 55.85/ha, but after the subsidized fertilizer reduction policy the use of KCL fertilizer remained at 55.85/ha. Furthermore, the use of ZA fertilizer on healthy rice before the subsidized fertilizer reduction policy was 171.43/ha, but after the subsidized fertilizer reduction policy the use of ZA fertilizer also remained at 171.43/ha.

The use of inorganic fertilizers in healthy rice per MT per hectare that changed urea fertilizer and NPK fertilizer. KCL fertilizer and ZA fertilizer on the use of inorganic fertilizers on healthy rice per MT per hectare remains the same without change. Farmers have long realized the impact of the use of synthetic chemicals on agriculture. Now some of them have switched to organic-based farming systems. This organic-based farming system is believed not to reduce the ability and quality of products, but on the contrary, will increase the quality and quantity of production. According to several studies including by Tounkara et al. (2020); Fang et al. (2021) and Liu et al. (2022) the application of organic fertilizers can reduce the use of inorganic fertilizers.

Table 3. Average inorganic fertilizer use in conventional rice per MT per hectare hectare

Fertilizer type	Before subsidized fertilizer reduction policy (kg/ha)	After subsidized fertilizer reduction policy (kg/ha)
Urea	399,35	268,8
NPK	302,45	154,56
KCL	118,52	101,85
ZA	315,92	315,92

Source: Primary Data Processed (2024)

Based on table 3. It is known that the average use of Urea fertilizer in conventional rice before the policy of reducing subsidized fertilizer amounted to 399.35/ha, after the policy of reducing subsidized fertilizer, the portion of urea fertilizer was reduced by 268.8/ha. The use of NPK fertilizer in conventional rice before the subsidized fertilizer reduction policy amounted to 302.45/ha after the subsidized fertilizer reduction policy the use of NPK fertilizer amounted to 154.56/ha. The use of KCL fertilizer in conventional rice before the subsidized fertilizer reduction policy amounted to 118.52/ha, however, after the subsidized fertilizer reduction policy became 101.85/ha. Then the use of ZA fertilizer in conventional rice before the subsidized fertilizer reduction policy amounted to 315.92/ha after the subsidized fertilizer reduction policy the use of ZA fertilizer remained the same at 315.92/ha.

CONCLUSION

Based on the results of the research and discussion, it can be concluded that the comparison of the use of organic fertilizers before and after the change in fertilizer subsidy policy increased. The use of urea and NPK fertilizers on healthy rice decreased, but the use of KCL and ZA fertilizers remained. While the use of urea, NPK, and KCL fertilizers on conventional rice increased, but the use of ZA fertilizer remained.

REFERENCES

Fang, P., Abler, D., Lin, G., Sher, A., & Quan, Q. (2021). Substituting Organic Fertilizer for Chemical Fertilizer: Evidence from Apple Growers in China. Land, 10(8), 858

Kaya, Elizabeth, et al. "Effect of biofertilizers and NPK fertilizers to improve the growth of tomato (Solanum lycopersicum) plants grown in Fusarium oxysporum infected soil." *Agrologia* 9.2 (2020): 360216.

Katarina Hildegardi Estriana Nino, Yosefina Marice Fallo, Werenfridus Taena, & Boanerges Putra Sipayung. (2022). Preferences for the Use of Subsidized Fertilizers by Rice Paddy Farmers in Biboki Moenleu Subdistrict, North Central Timor District. *Proceedings of the National Seminar on Agricultural Vocational Development and Education*, *3*(1), 220-236. https://doi.org/10.47687/snppvp.v3i1.308

Liu, J., Shu, A., Song, W., Shi, W., Li, M., Zhang, W., Li, Z., Liu, G., Yuan, F., Zhang, S., Liu, Z., & Gao, Z. (2021). Long-term organic fertilizer substitution increases rice yield by improving soil properties and regulating soil bacteria. Geoderma, 404, 115287. https://doi.org/https://doi.org/10.1016/j.geoderma.2021.115287

Liu, Z., Wang, S., Xue, B., Li, R., Geng, Y., Yang, T., Li, Y., Dong, H., Luo, Z., Tao, W., Gu, J., & Wang, Y. (2021). Emergy-based indicators of the environmental impacts and driving forces of non-point source pollution from crop production in China. Ecological Indicators, 121, 107023.

https://doi.org/https://doi.org/10.1016/j.ecolind.2020.107023

Nuranggraeni, Meita, Oto Prasadi, and Nurlinda Ayu Triwuri. "UTILIZATION OF VARIOUS TYPES OF FERTILIZERS FOR RICE PLANTS ON FARMS IN CILACAP." *Proceedings of the National Seminar on Applied Innovative Research (SENTRINOV)*. Vol. 7. No. 1. 2021.

Ratna, M. P. (2019). Organic Farming Starts with the Soil: Healthy Plants Come from Healthy Soil. KKN Diponegoro University, 1-3.

Rohman, A., & Maharani, A. D. (2018). Projection of Rice Food Consumption Needs in the Special Region of Yogyakarta. *Caraka Tani: Journal of Sustainable Agriculture*, *32*(1), 29. https://doi.org/10.20961/carakatani.v32i1.12144

1. Tounkara, A., Clermont-Dauphin, C., Affholder, F., Ndiaye, S., Masse, D., & Cournac, L. (2020). Inorganic fertilizer use efficiency of millet crop increased by organic fertilizer application in rainfed agriculture on smallholdings in central Senegal. Agriculture, Ecosystems & Environment, 294, 106878. https://doi.org/https://doi.org/10.1016/j.agee.2020.106878.