

Fertilizer Subsidy Policy in Indonesia: Impacts and Future Perspectives

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Introduction

Fertilizer has a significant role in increasing agricultural production, productivity, farmers' income, and its contributions to national food security. Therefore, the government is involved in managing the procurement and distribution of fertilizers to the farmers. To encourage farmers to apply adequate amount of fertilizer, the government has provided subsidies as one of the main policy instruments. The implementation of fertilizer subsidy is motivated by the fact that most Indonesian farmers are smallholders with limited capital. In such a condition, fertilizer subsidy is one of the important public policy instruments for improving farmers' production capacity.

The fertilizer subsidy policy has been applied comprehensively starting from the planning stage, setting the highest retail price (*HET*), the amount of subsidy, and distribution system from the factory to the farmers (targeted group). However, the policy has not been able to ensure the adequate availability of fertilizer at the farm level. It is reported that farmers who manage less than 0.5 hectares of land received only 40% of total subsidies and most farmers (90%) buy subsidized fertilizers at prices higher than the highest retail prices. The focus of this brief is to review the framework and implementation of fertilizer subsidy, its impacts and future perspectives.

The framework of fertilizer subsidy

a. Mechanism of the subsidy

The implementation of fertilizer subsidy is based on Regulation of the Minister of Agriculture (*Permentan*) and Regulation of the Minister of Trade (*Permendag*), which are issued annually. *The Permentan* regulates the allocation and the Highest Retail Price (*HET*) of subsidized fertilizers for the agricultural sector, while *the Permendag* regulates the procurement and distribution of subsidized fertilizers.

The subsidized fertilizers consist of Urea (nitrogen), ZA (nitrogen), SP-36 (phosphate), NPK (compound fertilizer) and organic fertilizers. The proposal of fertilizer needs by farmers uses *RDKK* (Definitive Plan of Group Needs) format proposed by the farmers' group. The farmers, as a member of the farmers' group, propose fertilizer need based on his/her land size. The proposal from farmers' group level is then compiled into proposal for the districts, provinces, and finally, at the national level. Total demand for fertilizer from the farm level is used as a reference for the Ministry of Agriculture to propose the needed fertilizers to the fertilizer companies and the amount of the subsidy budget to the Ministry of Finance.

b. Distribution of subsidized fertilizer

Fertilizer belongs to the groups of commodities which are subject to government's control. Therefore, the distribution system is arranged to prevent leakage of fertilizers from one market to another (Fig. 1). Line-I is a fertilizer warehouse located in the territory of their respective factories or producers in the territory of the port of destination for imported fertilizers. Meanwhile, Lini-II is a warehouse located in the provincial capital and Fertilizer Packing Unit (UPP) or outside the port area. Line-III is a warehouse located in the territory of a district. Lini-IV is the location of a warehouse or retail kiosks on district and / or village designated or established by the distributor.

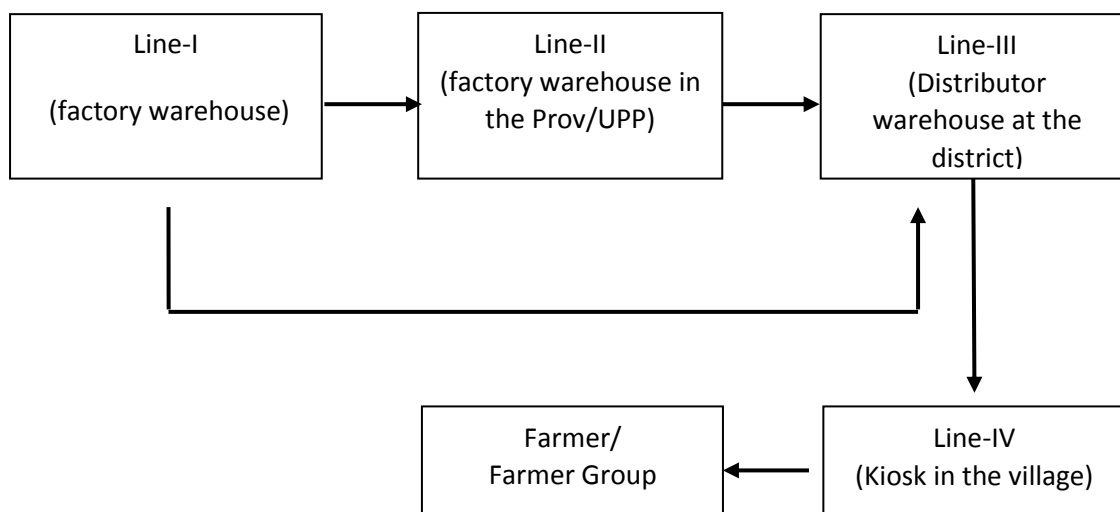


Fig. 1. Subsidized fertilizer distribution channels

In the district, if the location of distributor warehouse (line-III) near a factory warehouse (line-I), then the Line-III distributor can redeem fertilizers directly at the Line-I warehouse. Meanwhile, the Line-II warehouse in the province/UPP (Fertilizer Packing Unit) provides the only fertilizers for Line-III dealers in their area. Similarly, the Line-III dealers only provide fertilizer to Line IV retailer (Kiosks) in its territory. Furthermore, Line-IV only provide fertilizers to farmers/farmer groups in their area.

With *RDKK*, the subsidized fertilizer distribution system is closed at the end of the distribution channels (kiosks). It means that the sale of subsidized fertilizers by Kiosk limited only to farmers under its responsibilities in accordance to *RDKK*. Similarly, farmers can only buy subsidized fertilizers at the specified kiosks. Payments systems from kiosks to distributors and from distributors to factories are made in cash.

c. Fertilizer prices

Fertilizer prices paid by farmers are considered the Highest Retail Price (*HET*), namely the price of fertilizer sales in cash as stated at the Minister of Agriculture Decree which covers Urea, SP-36, ZA, NPK and organic fertilizers. In 2014, the proposal of fertilizer use is estimated around 9.55 million mt, which consist of 4.10 millions mt of Urea, 850 thousand mt of SP-36, 1.05 mt of ZA, 2.55 millions mt of NPK, and 1.00 million mt of organic fertilizer. The reference retail prices of those fertilizers are: US\$ 0.15/kg for

Urea, US\$ 0.17/kg for SP-36, US\$ 0.12/kg for ZA, US\$ 0.19/kg for NPK, and US\$ 0.04/kg for organic fertilizer. With these prices, the subsidy is around 50-75% of the market price of fertilizers (Table 1). Total budget for fertilizer subsidy in 2014 is around US\$ 1.51 billion. According to OECD (2012), expenditure on fertilizer subsidy is accounted for about 37% of total budgetary support to agriculture in 2006-2010.

d. Supervision of subsidized fertilizers

Surveillance has been conducted in an integrative manner involving the farmers/farmer groups, government and other stakeholders. Supervision of subsidized fertilizers carried out by the Supervisory Team (TP2B) and Supervisory Commission (KP3). The TP2B is located at the central government, whose members are appointed by the Minister of Agriculture. Meanwhile, the KP3 is formed by the Governor for the provincial level and by the Regent/Mayor for the district level.

Table 1. Comparison of market and subsidized prices of fertilizer, 2014

Fertilizer	Market price (US\$/kg)*	Subsidized price (US\$/kg)	Percentage of subsidy
Urea	0.30	0.15	50
SP-36	0.45	0.17	62
ZA	0.26	0.12	54
NPK	0.48	0.19	60
Organic	0.16	0.04	75

*Refer to audited ex-factory price

e. The effectiveness and impact of fertilizer subsidy to production, value-added and household income

Fertilizer subsidies have positive impacts to the use of Urea fertilizer in rice farming. Furthermore, the use of Urea fertilizer had positive effects on rice productivity. The World Bank study (2009) showed that the increased use of Urea by 1% increases the productivity of paddy from 0.31 to 0.49% in Java and 0.15% in the Off- Java. Meanwhile, the results of the study conducted by IPB (2010) reported that the fertilizer subsidy in 2008 could increase the value-added at the national level of about US\$ 0.43 billion. The value-added increase is still smaller than the subsidy cost of about US\$ 1.27 billion. The World Bank (2009) also reported that the increase in the value of rice production in 2008 was only US\$ 0.69 billion, or lower than the value of fertilizer subsidy of about US\$ 1.27 billion. This means that the fertilizer subsidy policy is economically not efficient.

The World Bank study (2009) also revealed that based on rice farming data in 2007, large farmers received more benefits of fertilizer subsidies compared to small farmers. Large farmers (40%) obtained 60% of the total fertilizer subsidy. IPB (2010) also showed that the fertilizer subsidy policy in 2008 provided larger impact to middle-upper income groups by about US\$ 18.71 million, while the low income group received only US\$ 14.03 million.

If the fertilizer subsidy is targeted to small farmers only (60% of total), then there is a budget savings amounting to US\$ 0.75 billion or 59.2% of the total subsidy. (World Bank, 2009). The funds may be reallocated to finance more productive investments such as the rehabilitation of agricultural infrastructure as well as research and development (R&D).

Some studies also show that the subsidy has encouraged some farmers to apply excessive amount of fertilizers which harm soil quality and the environment.

f. Future perspectives

Taking into consideration the effectiveness of fertilizer subsidy and the corresponding impacts, it is necessary to think of alternative agricultural support policy. In the short run, the subsidy may be targeted only to smallholders, mostly those with experience working with capital constraint. As mentioned earlier, by targeting the subsidy only to smallholders, the government may save the subsidy budget by as much as 59%. With regard to the instrument, experiences in some other countries show that distributing subsidized fertilizers to the farmers is done using a voucher. The farmer can only use the voucher to buy fertilizers. Before this policy is widely implemented, it is necessary to test the method in a pilot site.

In the long run, the subsidy should be phased out and the budget should be reallocate to general services expenditures which do not distort market signals. This policy is consistent with broader policy which have phased out the subsidy on fuel energy. General services expenditures to which the subsidy budget is reallocated include agricultural infrastructures, reserach and development, soil conservation, market promotion, standard and certification. According to OECD (2012), general services expenditures in Indonesian agriculture was accounted only around 15% to total support to agriculture in 2006-2010. As a first step, it is proposed that the fertilizer prices are increased to around 35-100% as shown in Table 2. To narrow the gap between market and current price, the increase of ZA and organic fertilizer prices is much higher than other types of fertilizers. With the proposed new prices, the subsidy rates will be reduced to 19% for ZA and 50% for NPK and organic fertilizers.

Table 2. Proposed increase of fertilizer prices, 2014

Fertilizer	Market price (US\$/kg)*	Current price (US\$/kg)	Proposed new price (US\$/kg)	Percentage increase	Percentage of subsidy
Urea	0.30	0.15	0.22	47	27
SP-36	0.45	0.17	0.23	35	49
ZA	0.26	0.12	0.21	75	19
NPK	0.48	0.19	0.24	26	50
Organic	0.16	0.04	0.08	100	50

*Refer to audited ex-factory price

Conclusion

Fertilizer subsidy is not effective in achieving its objective to accelerate food production. The cost of the subsidy is much higher than the value-added created in the rice sector. From income distribution point of view, farmers with larger farm sizes have enjoyed the benefit much higher than smallholder farmers. Future direction of the subsidy is as follows: (1) in the short run the subsidy should be limited to smallholder farmers only, who experience working capital constraint; (2) in the longrun the subsidy should be phased out in line with the general policy to reduce subsidy on fossil fuel energy. Budget saving from the subsidy may be reallocated to more productive investments such as agricultural infrastructures, research and development, natural resource conservation, standard and certification, and market promotion.

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