

Subsidies for Agricultural Inputs in Bangladesh: A Policy Analysis on Fertilizers Incentives

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Abstract: This study aims to make a policy analysis on the fertilizer subsidy in the Bangladesh agriculture. Five policy goals, such as ensuring equity through affordable price of fertilizer for the small-income farmers, ensuring food security for the citizens; maintaining growth in the agriculture sector, enhancing import substitute agriculture, and ensuring socio-political viability of state subsidy to fertilizer have been considered in this analysis. For policy analysis, the study depends on the readily available data in the official statistics and the previous studies on fertilizer subsidy. The study finds that the more progressive policy provides better social and economic leverage over the conservative policy of fertilizer subsidy in Bangladesh. The progressive policy could be challenged by the taxpayers and the business lobbies within the government. Hence, the status-quo could be a comfortable policy option for the fertilizer subsidy to agricultural sector in Bangladesh. Overall, it is the responsibility of the political leader to take into account the advantage and disadvantage of the policy alternatives as per score board of the present analysis, and the interest of the political party in power.

1. Background

Subsidy for agricultural inputs is an important issue of public policy analysis across countries. Most on the nations on earth do provide incentives to agriculture sector to maintain the viability of agricultural production as well as availability of agricultural goods in the market. Bangladesh is not an exception. The subsidy for agricultural inputs basically focuses on the incentives for seeds, irrigation and the fertilizer products, agricultural modernization in the agricultural sector in Bangladesh. The present study mainly describes the subsidies on fertilizes in Bangladesh agricultural sector.

Bangladesh has long history of the fertilizer subsidy. “The government started deregulating the fertiliser market and phasing out fertiliser subsidies since the late 1970s. By the late 1980s, the rate of subsidy was eliminated for urea that is mostly domestically produced, and was reduced to 30 and 27 per cent respectively for

phosphate and potash, which are mostly imported. The subsidy on imported fertilisers was eliminated from December 1992 with removal of ban on private sector import of fertilisers” (Bayes, 2020). Now, the private sector and the Bangladesh Agricultural Development Corporation (BADC) import the non-uria fertilizers. The Bangladesh Chemical Industries Corporation (BCIC) produce Uria as per requirement of the ministry of agriculture.

Bangladesh requires on an average “50 lakh tonnes of chemical fertilizer annually, and three-fourths of which is imported from countries such as Morocco, Tunisia, China, Saudi Arabia, Belarus, Russia, the UAE and Canada” (Parvez, 2020). The remaining fertilizers are produced by the BCIC. The government determines the price of the fertilizers at farmer’s level. Therefore, the government have to pay additional money through subsidy to bridge the gap between the import/transport cost of the business and sale price at street level. As the taxpayers have to pay for the fertilizer subsidies, it is important to make a critical policy analysis on the subsidies to fertilizers in Bangladesh agriculture. In this perspective, it is important to make a policy analysis with respect to policy goal analysis, impact category/ fairness to stakeholder analysis, status-quo analysis and finally the analysis of different policy alternatives following the rationalist policy analysis model with special reference to the subsidies on fertilizers produces in the Bangladesh agriculture. In this research report, the remaining sections include the objectives and methodology of the study, state of fertilizer subsidy in Bangladesh agriculture, policy goals and impact analysis, analysis of policy solutions, conclusion, and policy recommendations.

2. Objectives of the Study

The general objective of this study is to make a policy analysis with respect to the analysis of policy alternatives on fertilize subsidy in Bangladesh agriculture. The specific objectives of the study are as follows:

- (i) To make an analysis on the subsidy to fertilizers in order to ensure equity through affordable price of fertilizer for the small-income farmers;
- (ii) To make an analysis on the subsidy to fertilizers in order to ensure food security for the citizens of Bangladesh;
- (iii) To make an analysis on the subsidy to fertilizers in order to maintain the growth in agriculture sector;
- (iv) To make an analysis on the subsidy to fertilizers in order to enhance import substitute agriculture in Bangladesh; and
- (v) To make an analysis on the subsidy to fertilizers with respect to the socio-political viability of government subsidy to fertilizer in Bangladesh.

3. Study Method

The secondary sources of data will be used in line with study objectives. Secondary sources of data include were existing laws and rules, official documents, websites, research reports and articles and news published in different newspapers. For policy analysis, the study follows the rationalist policy analysis model as it is presented in this field (Venning and Weimer, 2004). The main analysis is divided in two section, policy problem analysis and policy solution analysis. The problem analysis section involves the policy goal analysis and the analysis of impact criteria related to the achievement of the policy goals. In the remaining section, we analyse the policy alternatives and shows the comparative advantages of different policy proposal. For measuring the observations and arguments in our analysis, we employ a simple 5-point ordinal scale with numeric value, such as very poor (1), poor (2), average (3), good (4), very good (5). After that, we calculate the value of each policy alternative with respect to the achievement of policy goals. After the calculation of values, we follow the score card of alternatives and understand the comparative position of alternatives that could help to take informed decision on the fertilizer subsidy policy.

4. State of Fertilizers Subsidies in Bangladesh Agriculture

It is already mentioned that Bangladesh needs 50 lakh tonnes of chemical fertilize in its agricultural sector. The demand, production, and import of Urea, TSP, DAP & MOP in 2018-2019 can be seen in Table-1. The table shows that, huge amount of fertilizer is imported from the outside of the country. Specially, the non-Uria fertilizers are imported by the private sector and the BADC.

Table-1: Demand, Production, Import of Urea, TSP, DAP & MOP in 2018-2019

Fertilizer	Year	Demand (Lac M. Ton)	Production (BCIC) (Lac M. Ton)	Import (Lac. M Ton)
Urea	2018-2019	25.50	10.00	15.50 (BADC, BCIC)
TSP	2018-2019	7.00	0.75	PS- 2.50 BADC- 3.75
DAP	2018-2019	9.00	1.00	PS-4.00 BADC-4.00
MOP	2018-2019	8.50	-	PS – 3.00 BADC- 5.50

Note: PS = Private sector; BCIC and BADC/ Government of Bangladesh.

SP= Triple Super Phosphate (TSP); DAP= Diammonium Phosphate; MOP= Muriate of Potash.

Source: Bangladesh Fertilizer Association, 2020.

It is reported that “it costs about Tk 15,000 crore each year to import such a large amount of fertiliser and the government bears a large part of this expense to supply the ingredient to farmers at fixed prices. Farmers purchase urea at Tk 16 per kilogram and MoP at Tk 15 per kilogram. Meanwhile, DAP and Triple Super Phosphate (TSP) can be bought at Tk 16 and Tk 22 respectively. If the import or production cost exceeds the fixed rates, the government pays the difference through the taxpayers' money” (Parvez, 2020). In this perspective, the subsidy to fertilizers need to analyse critically.

5. Fertilizer Subsidies: Analysis of Policy Goals and Impacts

The debate on the fertilizer subsidy to agricultural sector in Bangladesh necessarily focuses on a critical analysis of the policy goals. The policy goal analysis provides the appropriate basis for comparing between prevailing policy or even no policy and the potential alternative policies of a given policy problem. Our discussion on policy problems suggests some important policy goals on fertilizer subsidies in Bangladesh are given below:

5.1 Policy Goal-1: Ensuring equity through affordable price of fertilizer for the small and marginal farmers

In Bangladesh we have huge number of the small and marginal farmers. According to a survey, among the farmers 76.6% are small and marginal farmers (A.U. Ahmed et al. 2016)). They are most vulnerable farming community with regard to the production of crops in Bangladesh. This type of farmers utilizes up to 1.49 acres of land (Ahmed et al. 2016). They cultivate own land or other's land under various terms and conditions. Moreover, this types of farm holders have little access to the agricultural credit and agricultural extension services provided by the concerned state departments. For example, according to survey, small and marginal farmers have 7.1% access to firm credit, and they belong to 10% access to the official agricultural extension service (Ahmed, 2017). In this perspective, it is very difficult for the small and marginal farmers to afford all agricultural inputs including expensive chemical fertilizer. Therefore, one of the major goals of the policy on fertilizer subsidies is to ensure equity through affordable price of fertilizer for the small and marginal farmers in Bangladesh. It provides better access to agricultural inputs for them. The raining part of this discussion focuses on the impact category of this policy goal or the fairness to the stakeholders:

(i) Fairness to small and marginal farmers:

The objective of this policy goal is to ensure an equitable situation so that the small and marginal farmers could buy fertilized easily. The continuation of the prevailing policy (status quo) - subsidy to fertilizers- has average impact on this policy goal. We may consider the status-quo as “good” for the small and marginal farmers. However, if the fertilizer subsidy decreases, it will increase the cost of agricultural production, then the small and marginal farmers will be very unhappy. In that case we may consider lower subsidy to fertilizers as “very poor” for this policy goal. On the other hand, the increase of fertilizer subsidy could contribute the agricultural production lead by small and marginal farmers. Here, the increase of fertilizer subsidy may consider as “very good” to ensure equity for the small and medium farmers in Bangladesh.

(ii) Fairness to medium and large-scale farmers:

The impact of this policy goal on the medium and large-scale farmers is important. The subsidy to the fertilizers provides additional benefits to this section of farmers. They may consider the status-quo as “good” for their production. However, the decrease of the fertilizer subsidy has little impact on them and we may consider this decision as “average” fairness to them. On the other hand, if the government increase the subsidy to fertilizers, this section of farmers may appreciate the government decision and they will be very happy which may consider “very good” as per fairness to them is a concern.

(iii) Fairness to Bangladesh Fertiliser Association (BFA)

Bangladesh fertilizer association is an interest group of the fertilizer importers, traders and dealers in Bangladesh. They are important stakeholder within the network of fertilizers distribution in Bangladesh. Specially, every year they import bulk amount of non-Uriachemical fertilizers as there is increasing demand of the chemical fertilizer in the country. The continuous subsidy to fertilizers is important for the business of the members of BFA. In that case the status-quo may consider as good for them. However, if the government decrease the subsidy to fertilizers, the businessman may unhappy with the government decision and it may consider as “poor” as per fairness to them is a concern. On the other hand, the substantive increase of the government subsidy to fertilizers necessarily enhance the business prospects of the importers and traders. In this context, we may consider the increase of subsidies as “good” for the importers and traders.

(iv) Fairness to Bangladesh Agricultural Development Corporation (BADC)

The Bangladesh Agricultural Development Corporation (BADC) is a state owned public entity under Ministry of Agriculture (MoA) which is responsible for maintaining supply chain of the fertilisers in the country. BADC imports non-Urea fertilizer for the government distribution of chemical fertilizers. The Ministry of agriculture fixed the amount of non-Urea fertilizers to be imported by the BADC each year. The present situation of fertilizer subsidy is quite “good” for the BADC. However, the lower subsidy may disappoint the BADC and it is considered as “Poor” for them. On the other hand, the significant increase of the government subsidy on fertilizers may enhance the institutional variability for BADC. In that case, BADC may consider higher subsidy as “good”.

(v) Fairness to Bangladesh Chemical Industries Corporation (BCIC)

The Bangladesh Chemical Industries Corporation (BCIC) is a state owned public corporation under Ministry of Industries (MoI) which is responsible for maintaining supply chain of the fertilisers in the country. BADC imports Urea fertilizer for the government distribution of chemical fertilizers as a result of shortage of the production of Urea fertilizer in the factories owned by BCIC. The continuous subsidy to fertilizer in the country may consider as good for the BCIC. On the other head, the lower level of fertilizer subsidy may disappoint them like BADC which may consider as “Poor” for them. However, the significant improvement of the government subsidy to fertilizers may consider as “Good” for the BCIC as it has related to their institutional mandate.

(vi) Fairness to taxpayer citizens

The public money is basically taxpayer’s money. The subsidy to the agriculture, and to be specific the fertilizers subsidy come for the money of the taxpayers. Therefore, the fairness to them is an important aspect of the policy goal analysis. The taxpayers are not interested generally to provide subsidies in any policy issues, which is related to their tax burden. The existing subsidy to the fertilizer may consider as “avenger” for the taxpayers. On the other hand, the decrease of the amount of the subsidies to the fertilizers may consider as “very good” for the tax-provider citizens. However, if government decided to increase the amount of subsidy to the fertilizers, the taxpayers will be generally unhappy and it may consider as “very poor” for the taxpayers.

5.2 Ensuring food security for the citizens of Bangladesh

Food security for more than 16 million people is top priority of the government of Bangladesh. According to Food and Agricultural Organization (FAO), which is declared in world food summit, 1996, “food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life” (FAO, 2006). The country need to produce sufficient food grains to feed its huge population. Despite referred as an agricultural country Bangladesh has many challenges to ensure food security including “persistent poverty and undernourishment, persistent population pressure, low level of investment in agricultural research and development, and changing consumption trends inclined to non-cereal products without adequate technological preparation”(Nath, 2015). To meet the above challenges as well as to ensure the food security for the citizens of Bangladesh, we need to enhance the agriculture sector through fertilizer subsidises. Therefore, one need to take into account the food security argument as a goal of policy analysis on fertilizer subsidies in Bangladesh. This policy goals directly connected with the mass nutrition and good health, and indirectly connected with human productivity.

(i) *Mass nutrition and health*

The level of mass nutrition and health condition of the citizens depends of the available safe and nutritious food in a country. Any incentives to the agricultural inputs directly affect the agricultural production and mass nutrition and public health. If government continues the fertilizer subsidy to the agriculture sector in country, it may consider as “good” for the mass nutrition, health quality and food security. However, the lower amount of fertilizer subsidy may decrease the mass nutrition, health quality, and we may consider it as “poor” with respect to food security. On the other hand, the higher level of fertilizer subsidy may consider as “very good” for the higher food security as well as mass nutrition, and health quality of the people of Bangladesh.

(ii) *Human productivity*

The human productivity indirectly related to the food security and agricultural sector of a country. The subsidy or incentive to the agriculture directly connected with agricultural productivity, the quality of life of the citizens in country and the human productivity and efficiency. Hence, the continuous fertilizer subsidy or status-quo to the agriculture may consider as good for the human productivity in a country. On the

other hands, the minimizing fertilizer subsidy may consider as poor for the agricultural development and human productivity in a state. However, the notable increase of the fertilizer incentives may consider as “very good “ for the agricultural improvement, better health condition and human productivity level of country.

5.3 Maintaining continuous growth in the agriculture sector

The average growth of agricultural sector has recorded around 3.2 % during the past three decades (Imdad, 2021). The role of agriculture in the GDP of Bangladesh is notable. For example, the average contribution of agriculture to GDP growth during the last decades recorded from 17.5 percent in 2009 to 12.68 in 2019 (Imdad, 2021). The agriculture sector covers 50 percent of the employment of the population and 70 percent of the total people depend on the agriculture for their livelihood (Imdad, 2021). Poor people living in village areas are mostly depends on the agriculture for this income and employment in the Bangladesh.

However, the continuous and optimal growth of this sector depends on the availability of the agricultural inputs to the farmers. The access to agricultural imputes to the farmers again depends on enabling government policy support to these inputs, such as seeds, fertilizer, irrigations, pesticides etc. Therefore, the state subsidies like fertilizer may consider as very important public policy goal for ensuring the continues growth of agricultural sectors in Bangladesh.

According to World Bank report “agriculture plays a key role in Bangladesh’s economic growth. Extensive irrigation, high-yielding crop varieties, more efficient markets, and mechanization, enabled by policy reforms and investments in agriculture research, human capital, and roads have driven agriculture sector’s growth” (World Bank, 2000). Considering to the contribution of the agricultural to the national economy, we need to careful about the continuous growth. Therefore, the growth of agricultural sector and the fertilizer subsidy to the agriculture in Bangladesh are necessarily connected with the following three impact category or dimensions:

(i) Employment and income:

We have already discussed that the employment and income of the people of Bangladesh is connected with the agriculture. Hence, the existing fertilizer subsidy to the agriculture may consider as “average” for the employment and income of the citizens of Bangladesh. However, minimizing fertilizer subsidy may be considered as “poor” as it indirectly limits the income and employment opportunities. However, a significant increase of the fertilizer subsidy can consider as “good” for the overall income and employment in the agricultural sector in Bangladesh.

(ii) Productivity and contribution to GDP

The overall productivity of the agriculture is connected with the fertilizer subsidy provided by the government in Bangladesh. It also contributes to the GDP of the country. The present amount of fertilizer subsidy may consider as “average” for the productivity and contribution of agriculture to GDP. However, the lower amount of fertilizer subsidy may decrease the productivity as well as the contribution of agriculture to GDP, and we may consider it as “poor” for agricultural development. On the other hands, the higher level of fertilizer subsidy may consider as “good” for the higher productivity and higher contribution of agriculture to GDP in Bangladesh.

(iii) Effectiveness of agricultural extension services

Agricultural extension services are key to the overall agricultural development of nation. It refers to provide agricultural knowledge, skill and technology to the farmers and investors in the agricultural sector. It effectiveness depends on many factors including the government incentives to the agricultural inputs, such as fertilizer, seeds and water, pesticides, technical assistance etc. The prevailing fertilizer subsidy may consider as good for the efficiency and effectiveness of the agricultural development in a country. On the other hand, the lower subsidy could limit the activates of the agricultural extension services in the country and it may consider as average for the agricultural development. However, the significant fertiliser subsidy may consider as “very good” for the activities of the agricultural extension services in Bangladesh.

5.4 Enhance import substitute agriculture in Bangladesh

Bangladesh have to pay huge amount of money for the import of agricultural goods from the other countries including India, China, Thailand, Myanmar. Moreover, due to shortage of agricultural goods use to import of neighbouring countries have serious socio-economic implication for Bangladesh. For example, suspension of onion exports to Bangladesh by the Indian government has serious negative effect on the onion market in Bangladesh. The price of the onion increased dramatically due the shortage of Indian onion in Bangladesh market. It creates social, economic and political tension within the country. Bangladesh, therefore, need to offer subsidies to the farmers for the production of onion as policy response towered import substitute agriculture in the country. Therefore, in order to support the import substitutive agriculture in Bangladesh the subsidy to fertilizers may be considers an important policy goal. The analysis of this policy goals has following four impact categories/ fairness to stakeholders:

(i) Agricultural trade balance

Agricultural trade balance is very important for any country. As the agricultural trade balance is a concern, the status-quo or the existing subsidy to the fertilizers may consider as “average” for the agriculture of the country. On the other hand, the significant decrees of the subsidy may create agricultural trade imbalance as per the internal agricultural production is a concern. Here, the decrease of subsidy may consider as very “poor” for the import substitute agriculture and trade balance. Again, the significant increase of the subsidy may consider as “Good” for the agricultural trade balance.

(ii) Crop diversification

Corps diversifications are another important aspect of import substitute agriculture in Bangladesh. “Crop diversification is important for the utilization of limited land and water resources, and for the environment friendly sustainable agriculture” (Joshi et al, 2007; Kumari et al, 2010). Corps diversification may enhance the overall balance of the agricultural output in a country to meet the need of the people. The existing subsidy may consider as “average” for crop diversification and import substitute agriculture. However, the decrease of the subsidy to fertilizer may consider “very bad” for the crop diversification and import substitute agriculture. Again, the notable increase of the fertilizer subsidy may consider as “very good” for the crop diversification and import substitute agriculture in Bangladesh.

(iii) Fairness to Federation of Bangladesh Chamber of Commerce and Industries (FBCCI)

The trade entities under FBCCI involved with import of agricultural commodities may disappoint with the fertilizer subsidy that aims to enhance the import substitute agriculture in Bangladesh. In that case, the status-quo with regard to the subsidy to fertilizers may consider as “average” for their business prospects. The decrease of the subsidy may also consider as “good” for their business. On the other hands, the increase of the fertilizer subsidy to agriculture may disappoint them and it may consider as “very poor” for the importers and business associations in Bangladesh.

5.5 Socio- political viability of government subsidies to fertilizer

Another important policy goal is to ensure politically doable solution for the state subsidies to the fertilizer. There is a general observation in that the more radical change could arise protest from the politically opponents of the ruling government and other interest group of the society. On the other hand, the incremental policy change could make a balance between the prevailing situation and the desired policy

change (Weimer and Vining, 2011). In a growing industrialization process in Bangladesh, the more subsidies to the fertilizer may challenge by the business lobbies within the government.

We know that the subsidies come from the tax payer money. Hence, the utilization of tax payer money is always under the public scrutiny. Hence, the social and political viabilities of government subsidies need to take into account during the analysis of a fertilizer subsidies to agricultural sector in Bangladesh. However, the active member of the society, for example the members of the civil society organizations are always cautious about the pro-people or pro-poor public policies. The farmer's wings of the existing political parties in Bangladesh are very vocal for the interest of the small and medium farmers. Hence, any reform or major policy changes could protest by the social group and political parties.

In this perspective, as the social and political groups are kind to the agricultural subsidies, the prevailing subsidies may consider as good with repast to its likelihood of reform and adaptation. On the other hand, the decrease of fertilizer subsidies may consider as "average" to the implementation perspective. However, the notable increase of the amount of the fertilizer subsidies may consider as "very good" as per the adaptation of the policy reform is a concern in Bangladesh perspective.

6. Policy Solution: An Analysis of Alternatives

For policy solution, we could propose three alternatives: (i) status-quo that means Taka 10 to 20 subsidy/ KG of chemical fertilizer; (ii) policy alternative-1 that means Taka 5 to 15 subsidy/KG of chemical fertilizers, and (iii) policy alternative-2 (Taka 15 to 25 subsidy/ KG of chemical fertilizers as incremental option (Table-1). Now we may discuss the three alternatives and their comparative advantages and disadvantages.

6.1 Status-Quo: Taka 10 to 20 subsidy/ KG of chemical fertilizer

The status quo focuses on the constitution of the current decisions or rate of the fertilizer subsidy to the agriculture. In order to attain first policy goal- ensuring equity through affordable price of fertilizer for the small and marginal farmers- out of six impact categories/fairness to stakeholders, four are considered as good, another two are considered as average with the status quo. For the second policy goal- ensuring food security for the citizens of Bangladesh- out of two impact categories/fairness to stakeholders, all are considered as good with the status quo. For the third policy goal- maintaining continuous growth in the agriculture sector -

out of three impact categories/fairness to stakeholders, two are considered as average and the remaining one is categorized as good with the status quo. For the fourth policy goal- enhancing import substitute agriculture in Bangladesh- out of three impact categories/fairness to stakeholders, all are considered as average with the status quo. For the fifth policy goal- socio-political viability of government subsidies to fertilizer –which is considered as good with the status quo. Finally, if we look at the score card of the status- quo in Taable-1, we find that out of 75 the status quo scores 53 in number and 70.67 in percentage.

6.2 Policy Alternative-1: Taka 5 to 15 subsidy/KG of chemical fertilizers

The policy alternative -1 is a clearly conservative step as per rate of the fertilizer subsidy to the agriculture. In order to attain first policy goal- ensuring equity through affordable price of fertilizer for the small and marginal farmers- out of six impact categories/fairness to stakeholders, one is considered as very good, one is considered as average, three are considered as poor and one is argued as very poor with the policy alternative-1. For the second policy goal- ensuring food security for the citizens of Bangladesh- out of two impact categories/fairness to stakeholders, all are considered as poor with the policy alternative-1. For the third policy goal- maintaining continuous growth in the agriculture sector - out of three impact categories/fairness to stakeholders, two are considered as poor and the remaining one is categorized as average with the policy alternative-1. For the fourth policy goal- enhancing import substitute agriculture in Bangladesh- out of three impact categories/fairness to stakeholders, two are considered as very poor and one is argued as good with the policy alternative-1. For the fifth policy goal- socio-political viability of government subsidies to fertilizer–which is considered as average with the policy alternative-1. Finally, if we look at the score card of the policy alternative-1 in the Taable-1, we find that out of 75 the conservative decision scores 35 in number and 46.67 in percentage.

6.3 Policy Alternative-2: Taka 15 to 25 subsidy/KG of chemical fertilizers

The policy alternative -2 is a progressive step as per rate of the fertilizer subsidy to the agriculture. In order to attain first policy goal- ensuring equity through affordable price of fertilizer for the small and marginal farmers- out of six impact categories/fairness to stakeholders, two are considered as very good, another three are considered as good, and one is argued as very poor with the policy alternative-2. For the second policy goal- ensuring food security for the citizens of Bangladesh- out of two impact categories/fairness to stakeholders, all are considered as very good with the policy alternative-2. For the third policy goal- maintaining continuous

growth in the agriculture sector- out of three impact categories/fairness to stakeholders, two are considered as good and the remaining one is categorized as very good with the policy alternative-2. For the fourth policy goal- enhancing import substitute agriculture in Bangladesh- out of three impact categories/fairness to stakeholders, one is considered as good, one is considered as very good, one is argued with poor with the policy alternative-2. For the fifth policy goal- socio-political viability of government subsidies to fertilizer—which is considered as very good with the policy alternative-2. Finally, if we look at the score card of the policy alternative-2 in Table-1, we find that out of 75 it scores 60 in number and 80 in percentage.

Table-2: Summary of the fertilizer subsidy alternatives with respect to policy goals

Policy Goals	Impact Category/ Fairness to Stakeholders	Current Policy/ Status Quo (Taka 10 to 20 subsidy/ KG of chemical fertilizers)	Policy Alternative- 1 (Taka 5 to 15 subsidy/ KG of chemical fertilizers)	Policy Alternative- 2 (Taka 15 to 25 subsidy/ KG of chemical fertilizers)
Ensuring equity through affordable price of fertilizer for the small and marginal farmers	Fairness to small and marginal farmers	Good	Very Poor	Very good
	Fairness to medium and large-scale farmers	Good	Average	Very good
	Fairness to Bangladesh Fertilizer Association (BFA)	Average	Poor	Good
	Fairness to Bangladesh Agricultural Development Corporation (BADC)	Good	Poor	Good
	Fairness to Bangladesh Chemical Industries Corporation (BCIC)	Good	Poor	Good

	Fairness to taxpayers citizens	Average	Very Good	Very Poor
Ensuring food security for the citizens of Bangladesh	Mass nutrition and health	Good	Poor	Very Good
	Human productivity	Good	Poor	Very good
Maintaining continuous growth in the agriculture sector	Employment and income	Average	Poor	Good
	Productivity and contribution to GDP	Average	Poor	Good
	Effectiveness of agricultural extension services	Good	Average	Very good
Enhance import substitute agriculture in Bangladesh	Agricultural trade balance	Average	Very poor	Good
	Crop diversification	Average	Very poor	Very good
	Fairness to Federation of Bangladesh Chamber of Commerce and Industries (FBCCI)	Average	Good	Poor
Socio-political viability of government subsidies to fertilizer	Prospects of successful reform and adaptation	Good	Average	Very good
Score Card [Out of 75 (100)]		53 (70.67%)	35 (46.67%)	60 (80%)

Note: Ordinal Scale/ Numerical Value: Very Poor (1); Poor (2); Average (3); Good (4); Very good (5).

Source: Compiled by Author, June 2021.

1. Conclusion and Recommendations

Subsidy to fertilizer as agricultural impute incentives is a global issue. All the developed and devolving counties provide incentives or subsidies to the agricultural sector. The present dusty deals with the policy analysis on the frailer subsidies in Bangladesh agricultural sector. The specific objectives of the study are to analyze

fertilizer subsidy with respect to ensure equity through affordable price of fertilizer for the small-income farmers; to ensure food security for the citizens of Bangladesh; to maintain the growth in agriculture sector; to enhance import substitute agriculture in Bangladesh and the level of socio-political viability of government incentive to fertilizer.

The study uses the secondary sources of data, such as office statistics and previous research findings in line with its objectives. It follows rationalist policy analysis model. For measuring the observations and arguments in our analysis, we employ a simple 5-point ordinal scale with numeric value, such as very poor (1), poor (2), average (3), good (4), very good (5). After that, we calculate the value of each policy alternative with respect to the achievement of policy goals. After the calculation of values, we see the score card to understand the comparative position of the policy alternatives that could help to design informed policy for the fertilizer subsidy.

In our analysis, the “status-quo” which provides Taka 10 to 20 subsidy for 1kg of chemical fertilizer score 53 out of highest score 75. In comparison with status-quo, the generality conservative policy leveled as “policy alternative-1” which offers Taka 5 to 15subsidy for 1kg of chemical fertilizer score 35 out of highest score 75. However, the more progressive policy leveled as “policy alternative-2” which offers taka 15 to 25 for 1kg of chemical fertilizer score 60 of highest score of 75. Therefore, the more progressive policy provides better social and economic leverage over the conservative policy for realizer subsidy in Bangladesh. The progressive policy could be challenged by the taxpayers and business lobbies within government. Hence, the status quo could be a reliable policy option for the fertilizer subsidy to agricultural sector in Bangladesh. Finally, it is the major responsibility of the political leader and his or her cabinet to take the advantage and disadvantage of the policy alternatives as per the score board of the present analysis and the general interest of the poetical party in power.

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