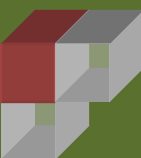


*May 2017*  
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# **Fertilizer Industry of Bangladesh**



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# Fertilizer Industry of Bangladesh

Subrata Howlader<sup>1</sup>

## A. Industry Classification

International Standard Industrial Classification	Code
<ul style="list-style-type: none"> <li>Manufacture of basic chemicals, fertilizers and nitrogen compounds, plastics and synthetic rubber in primary forms</li> </ul>	201
<ul style="list-style-type: none"> <li>Manufacture of fertilizers and nitrogen compounds</li> </ul>	2012

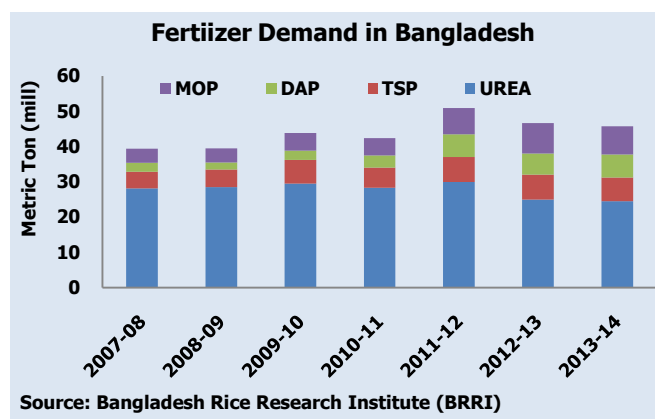
## B. Industry Report

### Introduction

Agriculture is one of the largest producing sectors of Bangladesh as it comprises about 16 percent of the country's Gross Domestic Products (GDP) and employing approximately 47 percent of the total labor force (Lab Bangladesh, 2016). To increase food production and food sufficiency, Bangladesh requires sustainable growth in agricultural sector. Fertilizer is considered to be one of the main inputs for increasing crop yields.

Fertilizer is a chemical or natural substance added to soil or land to enhance its fruitfulness and it provides feed or supply nutrients to plants. Fertilizer comes in liquid and dry forms, with fast and slow rate of release, inorganic and organic forms, and so on. Organic fertilizer is fully natural and contains things such as compost, plant or animal waste or powdered minerals, manure and so on. The main benefit of applying compost as a fertilizer is that it does not burn plants or poison pets. On the other hand, inorganic or chemical fertilizers are initially originated from chemical compounds, either mineral or synthetic. They usually come as a powder, pellets, and granules or in a liquid form. The majority inorganic, concentrated fertilizer is rated based on the percentage of nitrogen, phosphorous and potassium. Other inorganic fertilizer comprises calcium, sulfur, iron, zinc and magnesium. Inorganic fertilizers are normally lighter & easier to transport than their organic counterpart.

The annual consumption of fertilizer in Bangladesh is always higher, where the major portion of the demand is fulfilled by imports. Although, there have always been concerns about the quality of these imported fertilizers. In Bangladesh, balanced fertilization is necessary for sustainable higher yields. Imbalanced application of chemical fertilizers is one of the key obstacles to the sustainable development of agriculture production, farm



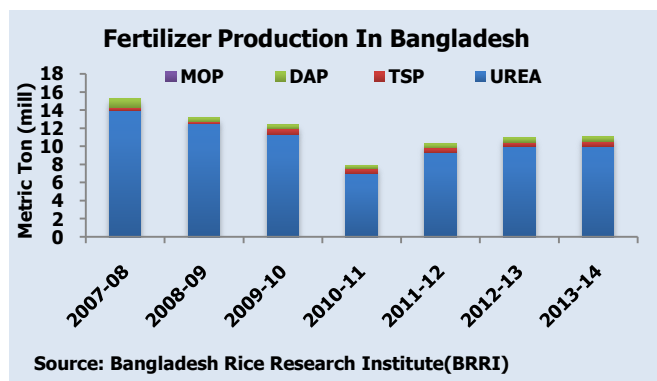
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efficiency and use of land. So, the government is taking an initiative to create awareness amongst the rural communities.

### Fertilizer Demand, Production, and Storage Capacity in Bangladesh

According to the Ministry of Agriculture, Bangladesh has a yearly demand of approximately 5 million tons of fertilizer, where 2.7 million tons are urea and the rest are non-urea fertilizers. In FY16 the demand of urea fertilizer was 2.8 million tons while Bangladesh had produced 0.213 million tons. The demand was 2.7 million tons in FY15 while domestic production was 0.878 million tons (Dhaka Tribune, 2016).

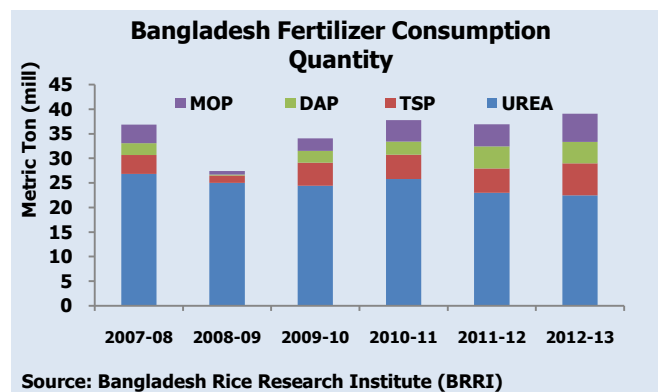
Bangladesh Chemical Industries Corporation (BCIC) operates six urea fertilizers, one ammonium sulfate, and two DAP (Diammonium Phosphate) plants. Karnaphuli Fertilizer Company Limited (KAFCO), a joint-venture between the government of Bangladesh and foreign companies, produces urea fertilizer and extra ammonia product for export. The total installed capacity of seven plants is 2.8957 million tons of urea and 1.8867 million tons of ammonia per year. The yearly capacity of ammonium sulfate plant is 0.01 million tons (Quader, 2009). From the last two decades, fertilizer production in Bangladesh has been rapidly shrinking due to the poor maintenance, exodus of experienced people, lack of human planning and above all aging of plants and obsolete technology (The Daily Star, 2015).



Due to the capacity limitation of existing warehouse, every year around 0.25 million tons urea fertilizer is left in the open air, causing huge loss to the state coffer because of wastage and quality deterioration of a large amount of urea fertilizer. To minimize this wastage and maintain the quality of the vital agro-input the government of Bangladesh is going to set up 13 buffer warehouse for fertilizer across the country (The Daily Sun, 2017).

### Fertilizer Consumption in Bangladesh

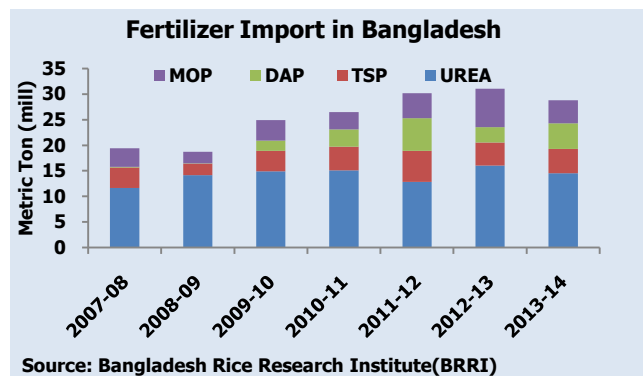
Bangladesh's yearly consumption of fertilizers is extremely large by volume. In Bangladesh, chemical fertilizers had been used sharply after 1975. Since then, increasing trends of fertilizers were being observed (Basak, Titumir, & Alam, 2015). With the present demand for crops, the use of fertilizer has increased to yield more crops.



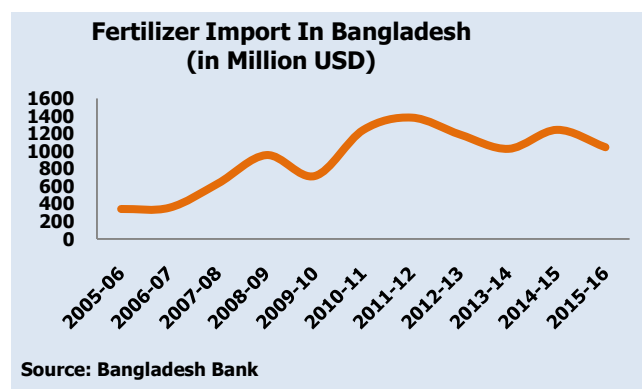
In 2015-2016, the actual fertilizer consumption in Bangladesh was 2.64 million tons. Bangladesh Fertilizer consumption was 208.7 kilograms per hectare of arable land in 2013. Use of fertilizer increased every year but in decreasing rate where the change in consumption of fertilizer was 27.40 percent in 2011, 2.77 percent in 2012 and -25.16 percent in 2013. The change was higher only in 2011(27.40 percent) from 2010 (12.77 percent).

### Fertilizer Import in Bangladesh

In Bangladesh, most of the demand for fertilizers is fulfilled by imports. Recently Bangladesh Chemical Industries Corporation (BCIC) has signed an agreement with Saudi Arabia Basic Industries Corporation (SABIC) to buy 0.5 million metric tons of urea fertilizer in 2017 (The Financial Express, 2017). Jordan Phosphate Mines Company (JPMC) also signed a Memorandum of Understanding (MOU) with the Government of Bangladesh to supply 150 metric tons of Rock Phosphate and 120 metric tons Phosphoric Acid valued \$280 million over a period of 3 years. This will also open the door for concessions to supply DAP fertilizer to Bangladeshi market (The Financial Express, 2017). To meet the demand of the potash fertilizer, the government will import 0.06 million tons of Muriate of Potash (MOP) from Canada and Russia at Tk.1080 million in FY17. The Russian authorities will supply 0.03 million tons of MOP for Tk.545.9 million under a G-2-G deal signed between Russia and Bangladesh Agriculture Development Corporation (BADC). The cost to import MOP from Canada will be Tk.546 million (Dhaka Tribune, 2016). The Cabinet Economic Affairs Committee also cleared the import of a total of 0.325 million tons of urea from Qatar in the current fiscal year, 2016-17 (The Daily Sun, 2016).



According to the Ministry of Industries, 68 percent of the fertilizer had been imported in FY15 where the import of urea fertilizer reached a record high of 1.8 million tons on the back of local production debacle. Bangladesh Chemical Industries Corporation (BCIC) and Bangladesh Agricultural Development Corporation (BADC) jointly imported this fertilizer (Dhaka Tribune, 2016).



### Challenges and Prospect of Fertilizer Uses in Bangladesh

The balanced application of fertilizers is crucial for agricultural production and providing adequate food to meet up their demand. Imbalanced application of chemical fertilizer is a

barrier to the production system, which is more complicated and more expensive. Besides, the demand for fertilizers would become significant in near future. Therefore, it is essential to boost the production of all types of fertilizers both chemical and organic in domestic level. Soil fertility is declining at an alarming rate in Bangladesh and as well as in the entire world. Standard soil should have at least 3.5 percent organic matters but this is between 1-1.7 percent (4.14 mh) in most areas of Bangladesh and in some areas (1.09 mc) less than 1 percent. Hence 5.23 mc of the total land area has a minor level of organic matters than the minimum requirement (Miah, 2015). On the other hand, the use of chemical fertilizers is mounting dangerously; in comparison to 1960, it's seven times more than 2006. In 1961, the Nitrogen used was 8.6 kg per hectare, but in 2006, it increased to 62.5 kg per hectare (The Monthly Krishi Barta, 2011). Organic Fertilizer can decrease the usage of pesticides up to 80 percent and by doing this the total subsidy from fertilizer section can be saved easily (Basak, Titumir, & Alam, 2015).

### **Prospect of Promoting Organic Fertilizer in Bangladesh**

In the urban areas of Bangladesh, roughly 16,380 tons waste is generated per day (Miah, 2015). If it is possible to recycle some of this as an element of organic fertilizer production, this may decrease the cost of raw materials and also recover some demand of fertilizer. On the other hand, it will reduce the saddle of improper waste dumping.

According to organic fertilizer entrepreneurs, vegetable growers are main customers of organic fertilizer users. From 1994 to 2013, per head vegetable consumption has been increased from 42 grams to 70 grams. Some upper-income groups, both in rural and urban areas, are showing interest in organic foods. Bangladeshi vegetable growers can export their crops and fine rice if they can produce organic vegetables which will result in higher demand for organic fertilizers. Sufficient knowledge, strategies, and incentives for promotion are necessary for production, market creation and use of organic fertilizers in Bangladesh (Miah, 2015).

The Bangladesh Organic Products Manufacturers Association (BOPMA) is convincing and instructing the farmers to prepare compost fertilizer at their home yard by using their own cow-dung, kitchen wastage, food wastage, vegetable wastage and so on. The Farmers can fulfill the demands of fertilizer through their own composting plants. The BOPMA is also planting *Jatropha*<sup>2</sup> on the unplanted, loamy, ruthless, infertile lands and throughout the country to produce balanced fertilizer. They planted *jatropha* in 0.2 million hectares of unplanted lands to produce approximately 1.4 million metric tons of organic fertilizer from *Jatropha* seeds (The Bangladesh Organic Products Manufacturers Association, 2017).

### **Challenges of Promoting Organic Fertilizer in Bangladesh**

A study performed by the Food and Agriculture Program of Practical Action Bangladesh in 2014 about 'Organic fertilizer promotion in Bangladesh' results a lack of understanding of the requirements of soil and soil fertility testing (Miah, 2015).

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<sup>2</sup> *Jatropha* is a plant native to Central America that was taken to India 400 years ago by Portuguese sailors to be planted there as "living fences." *Jatropha* seed cake makes an excellent organic fertilizer with high nitrogen content similar to, or better than, chicken manure.

Most of the organic fertilizer contains indeterminable nitrogen and work as a slow-release fertilizer. By its character, organic fertilizers raise physical and chemical properties of soils, diminishing threats of over-fertilization. Organic fertilizer works sluggishly on soil and its productive efficiency is lesser than the chemical fertilizer, which is expensive. The production costs of organic fertilizer are higher. In Bangladesh, very few companies produce organic fertilizer and some of its quality is not up to the mark. The government gives a higher subsidy for the chemical fertilizer that creates more vested attention so that gap exists concerning the political economy of fertilizer policy and promotion.

In Bangladesh, less than four to five percent of the whole supplies of organic waste are utilized, at the same time many more millions of tons of processed organic fertilizer likely lay unattended (Dhaka Tribune, 2015). Supply chain limitations have been a key obstacle to set up organic fertilizer producing organizations. Many companies have interest, but supervision of the whole waste collection process is exhausting, requiring dedicated human resource support. The entrepreneurs could enthusiastically engage in this business if they get proper investment support with reduced interest rates. This will generate further interest in the labor supply industry, which continues to grow as a result of the population rise.

### **Conclusion and Recommendation**

Cropping intensity in our country is very higher and therefore the soil fertility is reducing day by day. Fertilizers play an essential role in increasing crop yields, although, fertilizer marketing and distribution system are weakly organized. The crisis is more emphasized due to the time impressibility of fertilizer application.

Balanced fertilization is the key to successful crop production and safeguarding of soil health. The government of Bangladesh has to take some civic awareness, promotions, and advocacy to persuade farmers for using balanced fertilizer dose and organic matter. Above all, public awareness of the impact of imbalanced fertilization and emphasized using of organic fertilizers on agricultural production deserves precedence reflection. Establishing organic Fertilizer factory at every Upazila level can meet up the total demands of fertilizer throughout the country.

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Emerging Credit Rating Limited (hereinafter referred to as ECRL) began its journey in the year 2009 with the motive to deliver credible superior & quality credit rating opinion in various industry segments around Bangladesh. ECRL obtained credit rating license from Bangladesh Securities and Exchange Commission (BSEC) in June 2010 as per Credit Rating Companies Rules 1996 and also received Bangladesh Bank Recognition as an External Credit Assessment Institutions (ECAI) in October 2010.

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