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Local Level Governance in Input Delivery: A Case of Urea Fertilizer Marketing for Boro Paddy Cultivation in Bangladesh[1]

Kamrul Ahsan[2]

Abstract

Bangladesh had food deficit of about 3 million metric tons per annum in early 70's for a population of about 75 million. The country achieved self sufficiency in food grain production for a population of 160 million in 2014 having the limitation of losing agriculture land out of cultivation of about 0.92 percent per annum for other use. This huge achievement in food grain production particularly paddy production is mainly blessed with improved production system where irrigation, fertilizers and quality seeds played the key role. Over fifty percent of the total food grain of the country produces in boro season (November- May). The country needs about 4 million metric tons of chemical fertilizers like Urea, TSP, MP etc. in year of which urea alone claims about 3 million metric tons. This urea partly produces in the country by using costly natural gas and partly imports from other countries. The marketing channel of fertilizer from industry or buffer stock up to the end users (farmers) is a major issue considered for optimum paddy production. The present study addresses governance issues in urea fertilizer distribution for boro cultivation.

The study was conducted in four out of the six major ecological zones of the country. Data were collected through interviews, focus group discussions and consultations of different secondary materials. It reveals from the study that demands for urea fertilizer from union and upazila level to the district level has been inflated in many cases. The number of dealers varied from upazila to upazila and the consequent allocation of fertilizers among the dealers also varied widely from upazila to upazila and also from union to union. The profit was significantly different for the dealers of different upazilas although the security money of each dealer was similar (Th. 2 lakh). Among the recommendations – creation of an environment of involving stakeholders in the need assessment of fertilizer at the union level;

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[2] Dr. Kamrul Ahsan is Director (Training), BARD, Comilla, Bangladesh and can be reached with E-mail: kamrul_61@yahoo.com

need assessment for urea through plot to plot assessment at the field level; and dealers should be made accountable to a closer authority particularly UP and UZP should be ensured were important.

Keywords: Food Security, Boro Paddy, Local Level Governance, Urea Fertilizer, Fertilizer Dealer etc.

Introduction

Agriculture production system in Bangladesh ensures food security and reduces magnitude of poverty. The country has been experiencing on an average of losing 0.92 percent of cultivable land every year for non-agricultural uses during the last two decades. The major challenges for achieving food security concerns are increased production through intensified rice production and proper preparedness against natural disasters like flood, cyclone and drought during rice production season.

The coverage of irrigation areas of the country increased from 4.832 million hectares (MHs) in 2003-04 to 5.954 MHs in 2008-09. The remarkable increase of irrigated area for rice cultivation over the years reveals the government's commitment to increase rice production. According to Bangladesh Bureau of Statistics (BBS), the food grain production of the country increased from 27.68 million metric tons (MMTs) in in 2003-04 to 36.94 MMTs in 2009-10. The irrigated rice 'Boro' alone claims over 50 percent (18.72 MMTs) of the total grain production of the country in 2009-10 (GoB, 2010). Increase in coverage of irrigated areas and irrigation efficiency are considered as the main factors on achieving increased rice production.

The government introduced the use of chemical fertilizers in the country with the introduction of HYV seeds in 1960s. In the initial years, the use of fertilizer was less than 50,000 tons per year that gradually increased with the popularity of improved agricultural technology. Meanwhile the demand has crossed 2.7 MTs.

The availability of fertilizers within upazilas or even districts varies. The amount of fertilizers that a dealer gets to withdraw and sell mainly depends on the cultivated area, cropping pattern, fertilizer requirement according to soil type and even on supply of fertilizers on the basis of availability. So, 'commissions' or profits among the dealers vary from one area to another. In that case, apprehension arises whether the expected return of the dealers at the union level interfere in ensuring prescribed price to the farmers or not. In addition, proper selection of dealers and even locations of their godowns or sales centers of fertilizers in their respective unions or villages concerns the distribution system of fertilizer.

Research Objectives

Keeping in mind the above discussion the present study addressed governance issues in urea fertilizer distribution for boro cultivation. The specific objectives of the study were to:

a. assess gaps or short comings in different tires or chains of urea fertilizer distribution during boro cultivation;
b. find out the causes of gaps and short comings of urea fertilizer management if any in boro season; and
c. make recommendations on the basis of study findings.

Research Scope

The study was conducted in four of the six major ecological zones of the country. These ecological zones are Haor, Borind, flood affected, and flood free zones. Coastal and hilly zones were excluded from the study for their' lesser involvement in boro cultivation. The following variables were included in the study.

a. Fertilizer Distribution: Analyze the chain of fertilizer distribution in boro production (from store/godown to the farmers' fields) with special emphasis on:
   a.1 People's participation (directly or through their representatives) during assessing demand and responsiveness of the authority during making available of urea in areas of production (planning);
   a.2 assess the accountability and transparency in the performance of fertilizer distribution administration at different tiers i.e. from district to upazila, from upazila to fertilizer dealers at union level and from fertilizers dealers to farmers (implementation); and
   a.3 analyze the existing service and monitoring system of fertilizer distribution in terms of equity, inclusiveness, effectiveness, efficiency and enforcement at district, upazila and union level;
b. any other related issues that comes up during study.

Research Methods

a. Fifty upazilas from the four major ecological zones i.e., haor, flood affected, flood free and barind areas were considered primarily for selecting five upazilas for the study. Average use of urea fertilizer per unit of area for the years of 2007-08, 2008-09 and 2009-10 was considered to select upazilas for the study. The average urea use in boro per unit of area for consecutive three years under the study was found lowest in Derai among all seven upaziles of Sunamganj District as per data collected from BCIC. The Upazila was selected for the study on the basis of low urea utilization per unit of area from amongst the other upazilas of the district. Similarly Upazila like Neyamatpur was selected where the use of urea fertilizer was higher among other Upazilas of the district.

b. Data Collection: Data were collected both from primary and secondary sources. The primary source of data included (a) interviewing respondents with checklists which included:

   a.1) Deputy Director (DD), DAE and concerned officials of DAE; a.2) Elected representatives like Upazila Chairman, Upazila Vice Chairmen, Union Parishad Chairmen and Members who had been consulted for having their experience & opinion on fertilizer marketing issues; a.3) Upazila officials like Upazila Nirbahi Officers (UNOs) and Upazila Agriculture Extension Officers (UAEOs) were consulted for having detailed idea about urea marketing of their respective upazilas; a.4) BCIC Fertilizer Dealers & sub dealers were also consulted on sample basis in each of the five Upazilas under the study. Visits were also made to dealers and sub dealer's godowns and shops for getting practical idea of selling process of urea fertilizer. a.5) Randomly selected boro farmers of the study area were also interviewed with specific objectives for the study.

b. Data relating to fertilizers use in production of boro, cropping intensity etc. both in the selected upazilas and respective districts were also consulted.

c. Focused Group Discussions (FGDs) were carried out at district and upazila level. Secondary data were collected from various published materials. Information relating to fertilizers marketing was collected from BCIC.

Limitations of the Study

Data collected from the district and upazila level and data collected from BCIC for boro production could not be computed and compared for not having disaggregated data as per requirement of study. For example, data collected from BCIC was on the monthly basis of urea marketing where boro and other crop are the consumers of urea at the same time. But data collected from the upazila and district was only for boro production. So, marketing of urea for solely boro production could not be cross checked with the amount at source and field level.

The data of urea used per unit area of boro production suffered from the limitation of assessment of infiltration of or drainage to nearby upazilas or elsewhere during peak season. During the discussion, the issue came up for several times informally, but could not be quantified and merged with the available data at the upazila level.

The quantity of cultivable land of the upazila differs with the total area at a range of 10 to 35 percent in four out of five upazilas under the study. The

quantity of cultivable land could not be cross checked from any other source during the study.

The major limitations of the study were the time and resource constraints. The study areas were scattered throughout Bangladesh making field visit very costly and time consuming. The need for subsequent visits for verifying the collected data remained unmet. Moreover, the researchers had to perform the study alongside their own official responsibilities which also limited the opportunities of collecting disaggregated data through frequent visits.

Results and Discussions

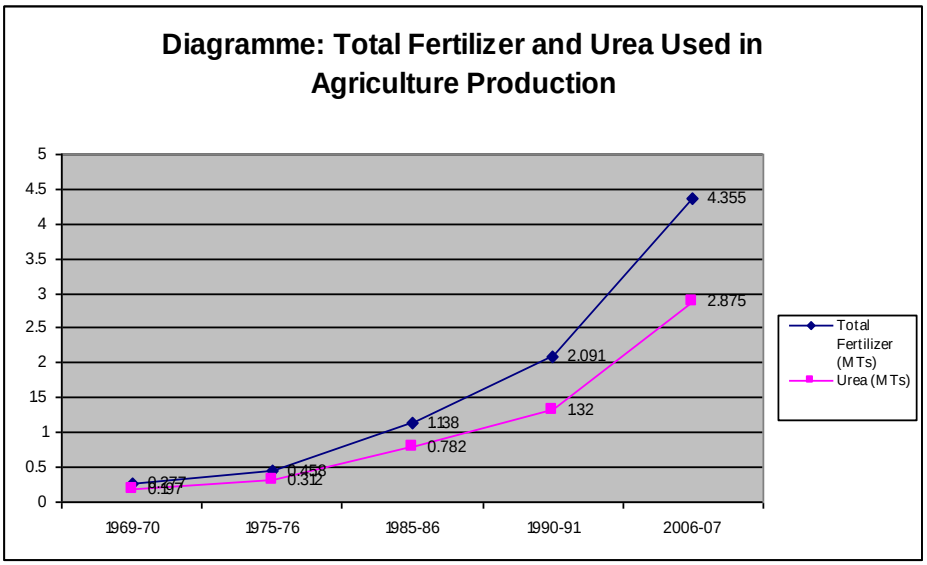
Trend of Boro Production and Irrigated Areas in Bangladesh

Increased Use of Fertilizer: 1969-2007

Fertilizer supply in Bangladesh comes from two sources. First one is domestic production, it produces Urea, Diamonium Phosphate (DAP), Single Super Phosphate (SSP) and Triple Super Phosphate (TSP) and Gypsum. The domestic production cannot meet the requirement of the country. The second source is import; it imports urea, DAP, SSP, TSP, Muriate of Potash (MoP) and NPKS.

The government has set a target of 19 MMTs of Boro production from less than 4.8 MHa of land by 2009-2010. To achieve the targeted production of Boro in the year, timely supply of fertilizer has been considered as one of the major factors of the whole production chain. The major fertilizers such as Urea, TSP, MoP, Gypsum and Zinc were provided to the tune of 1.383, 0.565, 0.694, 0.041 and 0.306 MMTs respectively (Basak, n d).

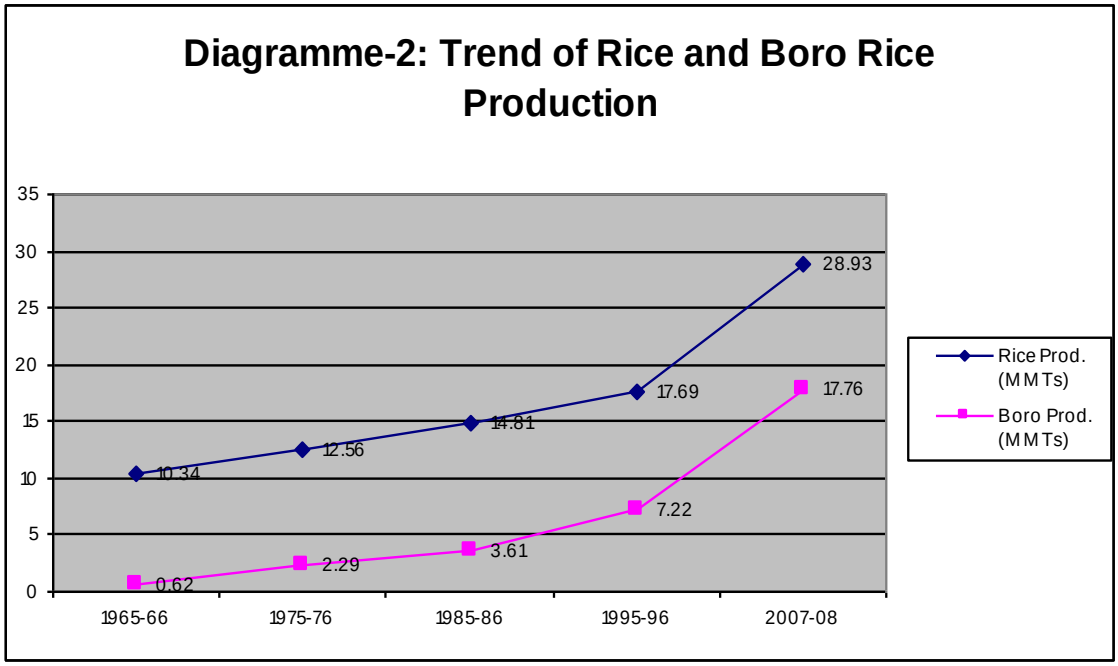
The diagram below shows that fertilizer utilization from 1969-70 to 2006-07 has increased many folds. Utilization of Urea increased from 0.196 MMTs in 1969-70 to 2.88 MMTs in 2006-07.



Source: BBS, 1978, 1996 and 2011

Rice Production: 1965 – 2008

Total rice production increased from 10.34 MMTs in 1965-66 to 32.26 MMTs in 2009-10 (BES, 2011). In the past amon was the largest crop sharer in terms of volume of rice production which was crossed by boro in 2000. The total quantity of amon produced in 1995-96 was 8.79 MMTs whereas the production of boro in the same year was 7.22 MMTs. In 2005-06, amon and boro production was 10.81 and 14.97 MMTs respectively. The potentiality of irrigated rice in terms of higher profit, higher yield and comparatively lower risk from natural disaster; and policy supports made this crop the most prospective one for achieving food self-sufficiency.



Source: BBS, 1978, 1996 and 2011

Utilization of Urea in Boro Production in Selected Upazilas

Acreage of Boro and Use of Urea: The acreage of boro in selected five upazilas under the study varied widely. It reveals from the data (table-2) that a fluctuating trend of boro coverage was observed in the sleeted upazilas. In Derai, Madargonj and Sreepur the trends of coverage of boro were found gradually increasing from 2007-08 to 2009-10. The incremental value from one year to other was nominal in case of Derai and Sreepur in this regard but comparatively higher in Madargonj during the last three years. In Bhangura, the boro coverage continued a slightly declining trend over the last three years. In Neyamatpur, the boro acreage increased in 2008-09 compared to 2007-08 but declined in 2009-10 compared to 2008-09.

It is to be noted that all the areas of boro cultivation mentioned above were not under cultivation of HYV only, but coverage of hybrids and local varieties were also included here. However, HYV dominated to a large extent in all the cases.

Table-1: Acreage of Boro and Use of Urea: 2007-2010

Name of Upazila	2007-08			2008-09			2009-10		
	Cov. of Boro (ha)	Amount of Uread Use (MT)	Av. Use (MT/ha)	Cov. of Boro (ha)	Amount of Urea Used (MT)	Av. Use (MT/ha)	Cov. of Boro (ha)	Amount of Urea Used (MT)	Av. Use (MT/ha)
Derai	26,280	2,610	0.10	26,720	2,900	0.10	27,410	3,758	0.12
Bhangura	8,500	2,203	0.259	8,045	1936	0.241	7,470	1936	0.259
Madargonj	NA	NA	NA	15,140	4060	0.268	17,500	4740	0.271
Sreepur	3,500	803	0.229	3570	798	0.224	3,600	790	0.220
Neyamatpur	15,700	3,500	0.223	16,200	3,600	0.222	15,770	3,550	0.225

Source: DAE, 2008, 2009 and 2010

Recommended Dose and Actual Use of Urea

The recommended dose of urea for boro cultivation was computed with the dose prescribed by Bangladesh Agricultural Research Council (BARC).

The Recommended doses of urea for HYV Boro cultivation in five upazilas under the study were taken from the Fertilizer Recommendation Guide of BARC. The average actual use of urea for HYV Boro for the year 2007-08, 2008-09 and 2009-10 in five upazilas were calculated and computed with the recommended doses of urea for the same. It was evident from the table-2 that only in Derai upzila, the farmers used less amount of urea compared to recommended dose.

Table-2 : Recommended Doses and Actual Uses of Urea in HYV Boro Production

Name of Upazila	Ago ecological Zone	Recommended Doses (kg/ha)	Average Use of Urea (kg/ha)*
Derai	AEZ 20 AEZ 21 AEZ 22	228	106
Bhanpura	AEZ 7	217	253
Madargonj	AEZ 8 AEZ 9	260	270
Sreepur	AEZ 11 AEZ 12	208	224
Neyamatpur	AEZ 5 AEZ 6	174	223

* Average use of urea in Boro production for the years of 2007-2008, 2008-2009 and 2009-2010

Dealer and Allocation of Urea

The number of dealers varied from 9 (in Sreepur) to 21 (in Madargonj) among the five upazilas under study. The allocation of fertilizers per dealer also varied widely among the upazilas for the five months (November-March). The lowest average allocation of urea (168 MTs) got by a dealer in Derai and the highest in Neyamatpur (394 MTs) in 2007-08. In 2008-09, the

gap increased between lowest (169 MTs) and the highest (430 MTs) of average urea allocation. In 2009-10, the gap decreased to some extent as average allocation of urea per dealer increased to 192 MTs in Derai whereas the highest allocation of 430 MTs in Neyamatpur remained the same.

Table –3: Allocation of Urea and Number of Dealer

Name of Upazila	No. of Dealers	2007-08		2008-09		2009-10	
		Allocation of Urea for the year (MT)*	Allocation of urea in 5 Months per dealer (MTs/D)	Allocation of Urea for the year (MT)*	Allocation of urea in 5 Months per dealer (MTs/D)	Allocation of Urea for the year (MT)*	Allocation of urea in 5 Months per dealer (MTs/D)
Derai	12	2,015	168	2,025	169	2,300	192
Bhangura	10	3,450	345	2,850	285	2,150	215
Madargonj	21	4,788	228	4,817	229	5,625	268
Sreepur	09	3,130	389	3,130	348	2,660	296
Neyamatpur	11	4,331	394	4,730	430	4,730	430

* Data available from BCIC and counting the amount of Urea for all crops from November to March

Source: The table above reveals that allocation of urea per dealer varied substantially.

The issues have several significances. Some of them are important for dealers and some are important for farmers. Firstly, all dealers have deposited Tk. 2.0 lacs as security money to BCIC. Now they have an expectation of equitable business opportunities. When the business opportunities differ the dealers may try to maximize their profit through pursuing any means, whatsoever.

Secondly, the number of service receiving clients becomes too many or too less which create difficulties for the dealers. Many of their clients may remain unserved or under-served in case of too many members. On the other hand, if clients are too less, they may remain out of focus due to under-attention or serving them seems to be un-remunerative for a dealer.

Thirdly, farmers also cannot reach to the dealer when their member is too many. They can be denied from equal treatment.

Fourthly, apprehensions remain regarding underutilization of administrative and financial resources. In some instances, strains may be seen on these resources.

Fifthly, rationality in decision making is seemed to be ignored.

From the discussions above, it transpires that there are a number of areas where discrepancies remain, and they need attention for remedial measures. At present the system is working, but it is neither efficient nor effective. It also provides no scope for the farmers who are the real target of the system to engage themselves as an active stakeholder but a passive recipient.

Local Government and Governance in Rural Areas:

Local self-government is defined in the Encyclopedia of Sciences as "the government, which has a territorial non-sovereign community possessing the legal right and the necessary organization to regulate it own affairs (Siddiqui, 2008).

In Bangladesh two separate local governments are mandated to perform in the rural areas called Union Parishad (UP) and Upzila Parishad (UZP). The framework of these two local governments is structured through Acts of the Parliament. The representatives of these local government bodies are directly elected by the people of the area. Government provides manpower to both of these local government bodies to undertake development plans and implement the same for the welfare of people and locality. In performing their duties, both the institutions are supported by a number of standing committees constituted by them

The state is the largest provider of some basic services to its population relating to health, education communication and productive services for increased production. Rural population mainly in Bangladesh receives the services through the government departments as services providers. The service providers particularly from government sector use a variety of channels such as door-to-door delivery (advices on contraceptive use), delivery at the community level (advices on improved technology and input delivery in agriculture), service providing at village or union level (schools, health care centres), service providing at the upazila level (hospitals, colleges). But Governance in service delivery suffers from a number of setbacks and limitations like inadequate resources, deep seated organizational problems and procedural flaws (World Bank, 1996).

Need Assessment of Urea

The process of fertilizer marketing begins with the estimation of the requirements of fertilizers for different crops in a union. During discussion the DAE officials opined that the standard procedure for correct assessment would be to visit plot-to-plot and contact the farmers for data collection, verify the data with land records to ascertain if there were any information distortion, and work out the requirement with recommended doses of fertilizer for each crop. But they have experienced that due to interaction of several factors like price of different fertilizers, farmers' capacity to invest, lack of knowledge about recommended doses of fertilizers, biasness towards a particular fertilizer (urea) etc., the farmers generally do not follow the recommended dose. Therefore, based on their experiences, in a very simplistic way, SAAO at the union level estimates the requirement of fertilizers like urea, TSP, MoP, DAP, etc. on the basis of cultivated areas under different crops in the previous years.

The marketing of urea for boro production took place from early January to first week of April in different parts of the country. SAAOs keep an extra margin over the actual requirement at the union level or the offices at the upazila level or both do the same through consultations. Tendency of estimation of fertilizers, particularly urea, got inflated in one or more tiers. Under these circumstances, scope of participation, either direct or through representatives, in estimating the actual requirement of urea becomes too limited for all practical reasons.

Marketing of Fertilizers

Government channelizes fertilizers through BCIC appointed dealers. They are the members of the private business community. BCIC allots urea in their favour according to the monthly requirement of a particular upazila. As has been seen earlier, officials of DAE prepares the monthly requirement according to cropping plan, pattern, soil type and time. On the other hand, the purchase of fertilizer by the farmers is regulated by their own investment plan. The investment plan may, also be affected by among others, their apprehension of availability of fertilizer at the dealers end. The larger the investment capability of farmers, the greater their willingness is to buy the whole amount of his requirement once at a time. This type of one-time buy provides him a sense of safety, lowers his transportation cost and saves time from frequent visit to the dealers. It creates a genuine panic among the small farmers. So, creation of an environment of trust of supplying required fertilizers in the chain should be ensured.

Dealer's Shop at the Union Level

It has been observed that 'one dealer for one union' was not farmer friendly for several practical reasons. Generally, the dealers have established their shops or stores or both at their convenient places and those are the Upazila HQs or large business centres. It reduces their transport cost, but increases carrying costs of the farmers. It also takes a lot of time for the farmers to reach there too. However, the appointment of sub-dealers has lessened the magnitude of the problem. Even then, the farmers are obliged to visit the dealers for more than once to buy fertilizer, particularly the small farmers.

Buying of urea in the present system works as "farmers should come to sales centre to buy fertilizers and stand in cue". In a number of cases the dealers are reluctant to deal with the farmers sincerely and with helping attitude. Farmers opined that helping attitude of dealers and attachment of UP in the process might help in creating better environment at the village level and even can generate need based action during the time of fertilizer crisis, if any.

Profit Issues

The allotment of fertilizer to the dealer should be made on the basis of cultivable land of the respective union. Still then there seem problems. The variation of allocation of fertilizer among the dealers was common in the study upazilas. It varied from 192 MTs per dealer in Derai to 430 MTs per

dealer in Neyamatpur during the boro paddy cultivations in 2009-10. This variation has another implication from the point of view of dealers' own business. Lower allocation of urea to a dealer led him to earning less profit. As all the dealers deposited Tk. 2.0 lakh as security money to BCIC for getting the dealership, the variation of profit is real issue for them. Dealers particularly who got comparatively less quantity of fertilizer expressed their dissatisfaction for getting less profit compared to those who got more. They felt that there should be some policy measures relating to getting fertilizer with minimum variations so that their equal investment as security deposit may be rationalized.

Accountability of Dealers

It was observed that the dealers do not have any accountability to the UPs or UZPs or UF&SMC. They are accountable to BCIC for any violation of their assigned jobs (as mentioned in the policy). Neither UPs nor UZPs nor UF & SMCs nor even the DF&SMCs can take penal measures against any dealer for any misconduct on his part. If any problem arises due to dealer's fault, it takes a longer time to settle. This long process for taking any measures against a dealer creates frustration among the stakeholders at the upazila and/or union level and among the farmers. The farmers feel that they are at the mercy of the dealers.

BCIC allocates urea in two installments for a month. The dealers draw the allocated fertilizer at the end of each fortnight. This type of allocation does not match with the requirement of farmers, since they use urea at different growth stages of crops. In every case, the farmers have to wait 5 to 15 days for urea application to boro, which hampers production.

Incorporation of farmer's opinion, accountability of SAAO to local governments, making responsible and accountable the dealers to UZPs and district committees and preparation of area specific allotment plan of BCIC can help reduce hazards for farmers in timely procuring urea, utilizations thereof and boost production.

Coordination and Monitoring of Fertilizer Marketing

The elected members of UPs can build awareness of the farmers against hoarding of fertilizers. This will help in minimizing the artificial crisis in the peak demand period. The UP Chairmen sit with the UNOs at Upazila Parishad meetings once a month. Fertilizer marketing can be an important issue to be discussed in the meeting and fruitful decisions can be taken there. Involvement of elected representatives of UPs might be an opportunity in better monitoring of fertilizer marketing at the grass root level.

Business Deal of Urea

Dealer is a businessman and he has deposited an amount of Tk. 2 lakh for getting the dealership; in addition, fertilizer cost, rental cost of godown, transportation cost and labour cost etc., are the investments of a dealer in this business. The sum total of these investments is substantial for a dealer.

The demand of urea varied widely from upazila to upazila. The demand of urea as calculated for Derai was 2,300 MTs in 2009-10, whereas the demand of the same as calculated for Neyamatpur was 4,730 MTs for the same year. The number of dealers in Derai was 9 and in Neyamatpur was 11. The consequent allocation of fertilizers among the dealers also varied widely from upazila to upazila, and thereby from union to union. The profit was also significantly different for the dealers of different upazilas.

These limitations in the existing system can be well coordinated by the involvement of UPs and UZPs. UPs can play effective role in planning, implementing and monitoring of fertilizer marketing and coordinating among the dealers, farmers and local SAAO.

Conclusion and Recommendations

Conclusion

Urea fertilizer is considered as a determining input for growth in boro production. The utilization and thus requirement of urea for boro production is much higher than other fertilizers. This fertilizer is highly subsidized and its supply is mainly dependent on import from other countries. Government provides much effort for proper marketing of this input timely and adequately to the farmers following the guidelines of "The Comprehensive Policy on Dealer Appointment and Fertilizer Distributions 2009". Need assessment of fertilizers is done by the officials of DAE. Marketing is being done through dealers appointed by BCIC. The supervision and monitoring of area-specific marketing are undertaken by district and upazila administration, where officials of DAE play important roles.

The study examines the governance of urea fertilizer marketing starting from its need assessment to marketing in the field situation. It reveals from the study that demands for urea fertilizer from union and upazila level to the district level has been inflated in many cases. This type of inflated estimation provides a sense of security to the concerned officials at the field level in the way that in no cases they could be held responsible for any short supply. It was found that the monitoring documents like ID card of farmers, drawl and sales registers of dealer etc. were not meticulously maintained in most cases. It was known from the farmers and dealers that there was no scarcity of urea in the field and there was no need to use these documents. Both farmers and dealers opined that strict adherence to the procedures like documentation of purchasing fertilizers through farmers ID card may create panic about fertilizer scarcity in the area. This might lead urea market to become unstable. Participation of stakeholders in need assessment of fertilizers, involvement of local government bodies particularly UPs and UZPs in fertilizer governance, responsiveness of fertilizer providers, coordination among concerned departments or persons and monitoring of fertilizer marketing might provide a self driven marketing system of this

very important input of boro production which ultimately help to reduce the cost of production and ensure better governance. Governance issues require looking into the capacity building of the farmers through continuous training and dissemination of knowledge through DAE personnel. The DAE may also require building their capacity to carry out the function. In the existing technology efficient and effective input management can produce higher yield. Government may and should strive for innovative technologies in future. For the time being, improvement in local level governance for input marketing like urea government can increase productivity in boro, reduce cost of production, and ensure accountability of the marketing system through people's participation.

Recommendations

1. Create an environment of involving stakeholders in the need assessment of fertilizer at the union level. Local UP can play an important role through adopting initiatives and reviewing the need assessment of fertilizers with the participation of farmers, local cooperative leaders, elected representatives and other stakeholders. This can reduce the risk of excess assessment of urea fertilizer.
2. The need assessment for urea should be done at the field level. Plot to plot assessment, and preparation of a data base at the union level should be considered. The technical information that the data base may examine by experts. The process will take a longer time, and DAE may undertake a special program for the task. Whenever the data base is completed, necessary adjustment can be done every year very quickly. This will also accommodate the people's representations role and responsibilities in the assessment process.
3. Upazila Parishad as a local government institution should be entrusted with the responsibility of finalizing the demand of urea of the upazila. Upazila Parishad may discuss the issue at a special meeting that may also have representative from the upazila fertilizer dealers association of the concerned Upazila.
4. The present dealer appointment system (one dealer for one union) may be recruited to explore the possibilities to appoint dealer in accordance with the demand of urea in a particular upazila.
5. The dealers should be made accountable to a closer authority and hence there accountability may be ensured through the Upazila Parishad.
6. For efficient supervision and monitoring of the marketing channel, the Union Parishads may be considered as the most convenient institution for their proximity to the customers and responsiveness of their needs. The existing monitoring system through the administrative machinery may continue side-by-side for the time being, to make it more effective.

7. The government can provide policy administrative and technical support to the local government for their capacity building to undertake the responsibilities.
8. Under all circumstances, the need assessment for fertilizer in general and for urea in particular, will have to be done by the DAE officials. Therefore, their capacity building for performing the job is of crucial importance. Through regular training modern techniques and technologies, their capacity will be increased over the time.
9. To increase the capacity of the dealers as well as for their motivation, regular orientation and awareness building courses may be arranged either through the DAE or through the Upazila Parishads. Regular sensitization of the dealers may yield better services from them.
10. Farmers are the ultimate beneficiary or the worst victim of the fertilizer marketing. They are also the demand creator and the end user. Therefore, their knowledge, skill and attitude towards efficient and economic use of urea matter the most. They need regular training on urea as well as non-urea fertilizer application, their recommended doses, application procedure and training etc. that enhance their capacity to encourage and optimize rice production.
11. Side by side yearly planning, midterm need assessment practices may be undertaken for urea related issues
12. The issue of equal security deposit of the dealer may be reviewed and this can be refixed proportionately according to the urea requirement of a particular upazila, so that the cost of doing business is rationalized.

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