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Rice Seed Production and Use in Bangladesh and India *Need for Bilateral Cooperation*

Dr. Mahfuz Kabir*, Suresh P Singh** and Ashfaq R Khan***

Rice seed production, marketing, distribution situation in Bangladesh and India is not considered to be efficient. This has led to low availability and accessibility of modern varieties (MV) rice seeds, resulting in low yields and low production. In such a situation, farmers in Bangladesh and India rely more on their own resources (farmers' saved seed) and also informal flow of seeds between the two countries. Given the situation, the paper explores why trade in MV rice seed does not exist despite some compelling factors. The paper suggests that to improve the situation, rice research institutions in the two countries should collaborate in development of MV rice seeds and its use. Further, governments in both the countries should encourage active participation of private sector in seed development.

Background

Quality of rice seed is one of the most important determinants of yield. This in turn, directly impacts production and food security of a community, country and region. There are evidences to suggest that use of modern variety (MV) of rice seed can raise the produce by 15 percent to 20 percent.

In South Asia, more particularly Bangladesh and India, given the status of rice as a staple food, food insecurity and ensuing impact of climate change on agriculture, it is of critical importance that rice seed industry is adequately nurtured and made more resourceful. It is believed, as indicated by several initiatives by international research and development organisations, including International Rice Research Institute¹, that cooperation and collaboration on seeds between Bangladesh and India could help both the countries to improve their food situation. It can be achieved by widening of the scope of seed system in both the countries. It is expected that it will significantly

benefit various stakeholders, particularly farmers from both countries.

The existing situation in Bangladesh and India with regard to production, marketing, distribution and its use is not considered to be efficient. This is reinforced by low availability and accessibility of MV rice seeds and low seed replacement rate (SRR) resulting in low crop yield and low production. In such a situation, farmers in Bangladesh and India rely more upon their own resources (farmers' saved seed) and also informal flow of seeds between the two countries. Not ironically, it is noted that farmers in both the countries, especially in border areas, often consider seeds from other sides more useful compared to seeds available locally.

Two glaring examples of such a perception are:

- BR11 developed by the Bangladesh Rice Research Institute (BRRI) in Bangladesh finds extensive application in South Dinajpur district of West Bengal in India; and

* Senior Research Fellow, BIIS, Dhaka

** Policy Analyst, CUTS International, Jaipur, India

*** Research Associate, Unnayan Shamannay, Dhaka

- *Swarna* variety of India is used by the farmers in many parts of Bangladesh, especially Chapai Nawabganj and Dinajpur districts.

One can identify several factors for such a scenario, can be summed up in existing systems of production, marketing, distribution and its use in the two countries. These could be grouped into two broad categories: availability (which is influenced by production, marketing and distribution systems) and accessibility (primarily influenced by purchasing capacity of farmers, their level of awareness, and convenience factors such as, time and distance required to be spent on accessing seeds).

In order to improve food scenario, both Bangladesh and India need to work in these areas to make the system more effective and suitable for greater acceptability of MV seeds by farmers.

The Project

Considering the existing systems of rice seed production, marketing, distribution and its use in Bangladesh and India and the possible eventualities with regard to food security, CUTS International, a leading think tank in South Asia, has initiated a project titled ‘Addressing Barriers to Rice Seeds Trade between India and Bangladesh’ with the support of Bill and Melinda Gates Foundation. The project is being implemented in Bangladesh in partnership with Unnayan Shamannyay and four eastern states of India, namely Bihar, Jharkhand, Odisha and West Bengal. The project will be implemented over a period of 21 month (January 2013 to September 2014).

The goal of the project is to ‘develop an enabling environment to promote seeds trade and knowledge-sharing on High Yielding Varieties (HYV) rice between India and Bangladesh’. There are three major objectives of the project:

- Comprehend factors driving demand and flow (production, marketing and use) of HYV rice seeds in selected Eastern Indian States and Bangladesh to identify varieties with bilateral trade potential
- Understand the systemic enabling factors and challenges (institutions, laws, policies, regulations and practices) to bilateral knowledge-sharing and trade of seeds

between India and Bangladesh, particularly on HYV rice seeds and

- Influence changes to policies and practices to facilitate formalisation and expansion of bilateral trade and knowledge-sharing on HYV rice seeds varieties between Bangladesh and India.

It is expected that effective implementation of the project will lead to the following outcomes:

- Consensus among major stakeholder groups on demand scenarios and bilateral trade potential between Bangladesh and India for HYV varieties of rice seeds
- Buy-in from a set of policy champions from among key stakeholder groups to promote bilateral trade in HYV varieties of rice seeds
- Initiation of dialogues on mutual recognition of certification methods and standards of HYV rice seeds and
- Creation of an enabling condition for private sector participation in bilateral HYV rice seeds trade.

Progress of the Project

Over the last nine months, significant progress has been made with regard to implementation of activities, under the project. The project team, comprising of CUTS International and four state partners in India and Unnayan Sammanyay in Bangladesh, has successfully organised several farmers’ focused group discussions and has interactions with a large number of stakeholders. These include government officials, research organisations, seed associations, retailers, wholesalers, importers and exporters and also media personnel directly or indirectly engaged in rice seed flow in both Bangladesh and India.

Implementation of project activities over the last nine months has led to several useful findings that could help improving the seed system in both the countries.

Outcome of Links with Bangladesh Stakeholders

The research team (Unnayan Sammanyay) in Bangladesh has till now organised three farmers’ FGDs and interacted with several other stakeholders, including government officials,

retailers, importers, exporters and media personnel directly or indirectly associated with rice seed chain. The team has come out with some interesting inferences, briefly presented below.

Demand Side

- Farmers prefer not to buy seed from any source and use their own preserved seed. Buying seeds from external sources poses uncertainty regarding availability and price. Farmers argued that it is preferable to use own preserve seed albeit lower yield than facing uncertainty.
- Currently, hybrid seeds are imported but not the HYV seeds. However, hybrid seeds are showing a declining trend.
- Discussion with farmers revealed that farmers are eager to buy quality input and to adapt modern production techniques.

Supply Side

- Discussion with the seed dealers revealed that 7 to 8 years back farmers used their preserved seeds only. After long advocacy, farmers are now gradually buying seeds from the dealers, but still in very low quantity.
- Seed dealers are found to be selling unpackaged seeds collected from farmers and *Jaypurhaat* because of high demand. There is scope for selling certified Indian popular varieties on account of high demand.

Trend in Use of Seeds and Informal Trade

- Informal trade is not occurring regularly. Based on relationship, some farmers received seeds of Indian varieties through their relatives or other farmers living on other side of border. These seeds were further replicated by farmers of Bangladesh. Rice seeds of Indian variety are produced locally. Same applies to seed flow from Bangladesh to India.
- It is observed that at Chapai Nawabganj in *Aman* season, out of 48,000 hectare land, *Swarna* was cultivated in 33,000 hectare land. Farmers meet most of their seed demand from their preserved seed. Bangladesh Agriculture Development Corporation (BADC) sells seed at 10 kg

package while the private companies sell seed at 1, 5 and 10 kg packages. It costs Tk.36 per kg from BADC and around Tk.200 per kg from private companies.

- Field visit in Dinajpur revealed the fact that in *Aman* season, 53 percent is *Swarna* among the cultivated varieties. At Hakimpur Upazila of Dinajpur, total area under rice production is 7,196 hectare in *Boro* season. Of this area 5,646 hectare is under HYV of three Indian and four Bangladeshi varieties. 1,550 hectare is under hybrid, which was previously much greater. BRRI-28, BRRI-29, Miniket and BR-49 constitute 17, 23, 14 and 12 percent, respectively of total land under rice cultivation.
- In Hakimpur Upzila of Dinajpur, nine Indian varieties are farmed about 5,390 hectare out of 8,170 hectare in *Aman* season. *Guti Swarna*, *Mamun*, *BRRIDhan-34*, *Swarna-5* and *Ranjit* contributed 20, 17, 16, 15 and 5 percent of total *Aman* production, respectively.
- Farmers noted that the harvests of Indian varieties are decreasing as certified seeds are not available and quality of farmers preserved seed deteriorate after 4 to 5 seasons.
- On the issue of informal flow of rice seeds from across the border, it was noted that this is because of existing regulatory framework in India and Bangladesh. Farmers through their network show interest in a particular variety from other side of the border. In the absence of institutional framework for supply of that seed and easy availability or widespread informal flow, farmers opt for this channel.
- Generation related information of the seed is not available in case of farmers preserved seeds. This is particularly true for informally traded Indian varieties. Usage of certified seeds can significantly increase production of rice.

Policy Related Matters

- It is also noted that India places regulations and policies that regulate rice seed import for which it is neither possible nor efficient for a small, medium or large farmer to complete the processes required for importing seed legally.

- Discussions with seed traders revealed that trading barriers are more rigid and greater in number from Indian side. Bangladesh imports an array of products from India through formal and informal process while there are minimal trade barriers from Bangladesh's side. But in case of India, facilitating trade requires much longer time and many forms of documents and authorisation and certification from a number of bodies due to the federal government system.

Interactions with Stakeholders in India

As in the case of Bangladesh, the research team in India organised several farmers' Focus Group Discussions (FGDs) and interacted with other stakeholders, including government officials, retailers, importers, exporters and media personnel directly or indirectly associated with rice seed chain.

Overall, interactions with stakeholders, especially in West Bengal, suggest that there is informal rice seeds trade taking place at the border points between India and Bangladesh. The main points of such trade are centres of Jibannagar, Darshana and Pragpur in Chuadanga, Benapole in Jessore, Kushtia, Khulna, Godagiri in Rajshahi, Dinajpur, Burimari border of Lalmonirhat, Sonamasjid of Chapai Nawabganj, and also some other points. It was revealed that the traders in a group of 3 to 10 people on an average participate in such trade. Evidences also suggest that the items generally traded by these illicit networks ranging from rice seeds to rice and pulses. Major observations from the interactions with stakeholders are presented below.

Demand Side

- Many farmers have bad experience of *Swarna* variety of rice seeds, many have experienced low yield from *Swarna*.
- Many of the farmers pointed out that no receipt on purchase of seeds is given by the sellers, and farmers are often misguided. Sometimes even bad quality seeds are sold at the rate of Rs 45 per kg. This results in low germination. In addition, most of the farmers are unaware of seed purification procedures.
- Farmers usually use a mixture of own/exchanged seeds and purchased HYV

seeds. Greater emphasis is placed on certified seeds, then on own and exchanged seeds.

- Many farmers claimed that presently farms are not producing adequate and good quality seeds, seeds are often in short supply. In addition, many times seeds are not available at the right time.
- Many farmers opined that there is a significant gap between the knowledge required and knowledge available to farmers about cultivation of rice – what variety to use on what type of soil, how to purify seeds, etc. Farmers suggested that the government should take immediate steps in bridging the gap.

Trends in Seed Usage and Informal Trade

- Informal rice seed flow across states and from Bangladesh is observed. Two of the rice seeds varieties from Bangladesh, *viz. BangaBandhu* (BR-11), and *Hira* (a hybrid variety) are popular in West Bengal.
- A wholesaler in South Dinajpur claimed that about 20 percent of HYV rice seeds sold by them are BR-11, a variety informally bought into India from Bangladesh. BR-12 is found to be popular in Bihar.
- Some of the farmers claimed that HYV rice seeds are often smuggled from Bangladesh to India. Some of the Bangladesh varieties have been brought into India by people who migrated to India from Bangladesh.

Policy Matters

- Three out of the four selected states (Bihar, Jharkhand and West Bengal) are seed deficit. They receive HYV rice seeds from Hyderabad, and Orissa. Traders revealed that they receive seeds directly from distributors in Andhra Pradesh and Orissa.

Informal Rice Seed Flow between Bangladesh and India

As indicated above, a significant quantity of MV rice seeds flows informally from Bangladesh to India and vice versa. The scenario of informal

Table 1: Formal/informal flow of HYV rice seeds between states/countries					
State/Country	Bangladesh	Bihar	Jharkhand	Odisha	West Bengal
Bangladesh	✓	✓	×	×	✓
Bihar	✓	✓	✓	×	×
Jharkhand	×	×	✓	×	×
Odisha	✓	✓	✓	✓	✓
West Bengal	✓	✓	×	×	✓
Other states (Andhra Pradesh)	×	×	✓	×	✓

Source: Farmers' Focused Group Discussions conducted in four states in India and in Bangladesh (19-28 August, 2013)

flow of rice seeds does not change even within Indian states. Rice seed varieties from Odisha is informally brought and used in some of the areas in Jharkhand. A matrix reflecting formal/informal flow of rice seeds is presented below.

Way Forward

Several critical issues emerge from the field findings for both Bangladesh and India that include inadequate availability and accessibility, low quality, low level of farmers' awareness with regard to use of MV rice seeds, informal trade and most importantly lack of adequate infrastructure. The problem is further aggravated by lack of collaboration and cooperation between Bangladesh and India. Having a similar agro-climatic conditions and food habits, technical knowledge and infrastructure available in the two countries can be mutually used for improving food security scenario.

For greater collaboration and cooperation in MV rice seed, the following measures should be adopted by the government of Bangladesh and India:

- Given the sensitivity of MV rice seeds, there should be attempts in both countries to gather, estimate informal flow of rice seeds to understand demand for Bangladeshi/Indian varieties in each other.
- Seed policies of Bangladesh and India do not put any restrictions on import/export of MV rice seeds. It needs to be explored why trade in MV rice seed does not exist despite seeds of other crops are being traded.
- There is need for rice research institutions in the two countries to cooperate and collaborate in development of MV rice seeds and its use.
- Considering that demand for MV rice seed being more than supply in both the countries/ governments should encourage and facilitate active participation of private sector in seed development. Considering the low level of awareness regarding MV rice seeds, both the governments should also launched a campaign to encourage greater acceptability of MV rice seeds.

Endnote

1. IRRI: <http://irri-news.blogspot.in/2013/03/bangladesh-workshop-seeks-to-enhance.html>

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