

# BRIEFING PAPER



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## Rice Seeds Availability in India and Bangladesh *Farmers' Perspective*

Suresh P Singh\*  
Nitesh Kumar\*\*

*Farmers are most important stakeholders in rice seeds supply chain. It is, therefore, of critical importance that their views and perspectives with regard to availability and accessibility is properly understood by other stakeholders, including government officials, seed producers and dealers. This Briefing Paper presents the perspective of farmers and their preferences in Bangladesh and India with regard to availability and accessibility of rice seeds.*

*The paper reveals that lack of availability of good quality rice seeds at the local level is inducing farmers to opt for seeds informally traded between Bangladesh and India. What is more, farmers in India find some of the Bangladeshi variety seeds more suitable and adaptable to local conditions. This also holds true for farmers in Bangladesh. It recommends measures to formalise rice seeds trade and knowledge sharing between two countries.*

***'I am selling Swarna variety for last 10 years, and I have never received any complaints relating to yield or seed quality. Farmers are highly satisfied with the yield and adaptability of Swarna in local conditions'.***

***A seed dealer in Benapole, Bangladesh***

### Introduction

Seed is one of the most important inputs for sustainable crop production. Quality of seeds is intrinsically linked to crop yield and production, implying better the quality of seeds, better the yield. This is true for all crops, including rice, and for all regions, including South Asia, particularly Bangladesh and India.

Both Bangladesh and India over the last two decades have realised significant improvement in availability and accessibility of quality rice seeds, particularly high yielding varieties (HYVs). This translated into increased rice production in the two countries. While rice production in Bangladesh increased from about 18 million tonnes in 1990-91 to nearly 35 million tonnes in 2011-12; production in India increased from 74 million tonnes in 1990-91 to 105 million tonnes from 2013-14.

The situation with regard to local production of rice seeds has also improved, though not at the required pace. Seed replacement rate (SRR) in both the countries (in the range of 40-50 per cent) continues to be low, and farmers' saved rice seeds remain a major source of availability. Besides, there are several issues and challenges faced by farmers in accessing good quality seeds.

This Briefing Paper seeks to present the perspectives of farmers with regard to availability and accessibility of rice seeds in the two countries. Its findings and recommendations are primarily drawn from the report 'Rice Seeds: A Study of Availability and Accessibility in Bangladesh and India'.<sup>1</sup> The Paper briefly outlines the methodology and perspective of farmers in four Indian states (Bihar, Jharkhand, Odisha and West Bengal) is presented. It presents perspectives of Bangladeshi farmers and delineates issues influencing informal trade in HYV rice seeds between India and Bangladesh and associated factors.

\* Policy Analyst, CUTS International (sps@cuts.org)

\*\* Research Assistant, CUTS International (nk@cuts.org)

### Box 1: Areas covered under the project

State/country	Areas selected
Bangladesh	Jessore, Dinajpur, Nawabganj
Bihar	Bhojpur, Kishanganj, Purnea
Jharkhand	Ranchi, Gumla, West Singhbhoom
Odisha	Bhadrak, Puri, Dhenkanal
West Bengal	Dakshin Dinajpur, Burdmaan, Cooch Behar

Source: *Rice Seeds: A Study of Availability and Accessibility in Bangladesh and India*

## Methodology

The Paper relies on the data and inputs from research teams' interactions with stakeholders under the project,<sup>2</sup> primarily farmers, seed producers and traders, research institutions, government officials, non-government and community-based organisations. While farmers' perception on availability and accessibility to HYV seed is secured through farmers focussed group discussions (FGDs), views of other stakeholders were gathered through direct interaction and interviews.

Altogether, 15 farmers' FGDs were organised (three in each select state in eastern India and three in Bangladesh). FGDs in West Bengal and Bangladesh were mainly confined to border areas, where there were indications of informal trade (see Box 1).

Besides, several interviews and interactions with other stakeholders were also organised. In addition, inputs were also gathered through several workshops and media interactions – at state and national levels – organised under the project.

## Farmers' Perspective on Rice Seeds' Availability

In India, rice seed varieties used by farmers vary from one state to another and even in the same state from one area to another. Findings and observations from the FGDs conducted with farmers in several places in the four states – Bihar, Jharkhand, Odisha and West Bengal – clearly demonstrate and reinforces this argument. The demand of rice seeds varieties used by farmers depends on the level of their income, irrigation facility and also the availability of varieties in local market. State-wise variations in demand for rice seeds is delineated below.

### **Bihar**

Bihar has a regime of subsidised seeds – the Government of Bihar provide subsidy on HYV rice seeds to farmers. This, however, has not translated into much gain for farmers. Farmers in Bihar use a mix up of HYV, hybrid and traditional varieties. A majority of them are using farmers' saved seeds, which include both improved and traditional varieties. On an average about one-third of farmers purchases HYVs of rice seeds every year. Interactions with farmers reveal that over the last few years, use of hybrid seeds has picked up. This is primarily because of higher expected yields.

Lack of awareness with regard to adaptability of improved variety of seeds is a common issue observed in all areas where FGDs were conducted. Farmers usually accept seeds as available in the market. Further, instances of adulteration of certified seed is also observed.

It is observed that Bihar is not self-sufficient in production of HYV seeds in line with changing demand. West Bengal and to some extent Maharashtra are major sources of seeds for the select districts (Katihar, Kishanganj and Purnea). Seeds are mainly brought through private seed companies and dealers. This is mainly because all three districts are adjacent markets and low price of seeds is brought from West Bengal. Flow and use of both notified and non-notified varieties are reported.

### **Jharkhand**

Demand and preference of variety seeds vary among farmers across the state. A distinct pattern is observed in *adiwasi* community in comparison to non-*adiwasi* communities. The level of awareness on suitable and adaptable HYV variety seeds in *Adiwasis* community is very low and farmers mostly use *desi* (traditional) varieties of rice seeds. Rice seed replacement rate is also very low in this community. This is despite the fact that farmers of this community purchase seeds of other crops from the market. This is in sharp contrast to some other areas (non-*adiwasis*), where awareness on variety rice seeds is quite impressive.

Distance and low purchasing power are other important factors that determine access to quality seeds. It is observed that the farmers at many locations need to travel a long distance (12km) for the purchase improved quality variety seeds. Farmers often exchange traditional varieties within the community.

Farmers in the state purchase HYV rice seeds from LAMPS (Large Area Multi-purpose Society) a semi government registered marketing agency. The existing system is found to be deficient in many respects. It was reported by farmers that when they purchase seeds, LAMPS do not provide them any receipt. This is a common practice being followed by all the four LAMPS in the covered block. In such cases, farmers find it difficult to lodge complaint when they find the quality of seeds not so good. Further, many times farmers fail to procure required variety and quantity of seeds as dealers do not inform them about arrival of seeds. In such a scenario, farmers are forced to use saved seeds or exchanged seeds.

Naveen, a subsidised variety in Odisha, is a major variety used by a large number of farmers in the state. This seed is informally brought into Jharkhand from Odisha and is black marketed. This arises because of restrictions on the state seed growers to procure Breeder/Foundation seed from outside the state.

### **Odisha**

Two major bottlenecks in seed production in the state arise from the fact that seed certification agencies are understaffed and have inadequate seed certification infrastructure. In many areas awareness about variety rice seeds is found to be quite low. This is especially true in coastal areas – small and marginal farmers, constituting about 82 per cent of all farmers, are not using modern varieties. Many small and marginal farmers have not replaced *Swarna* variety for about 15 years. Farmers' saved seeds appear to be the most important source of HYV rice seeds at 57 per cent; the government provides 31 per cent; 12 per cent comes from other sources.

In Odisha, rice seed farming is very common among the farming community. This is mainly because of high profitability associated with rice seed farming. It is indicated that farmers have adequate knowledge and have undergone training on rice seed farming. Some of the rice seeds growers indicate that they are engaged in rice seed farming for long period and some of them grow rice seed in both season, i.e. *Kharif* and *Rabi*. *Swarna* is one of the most important rice seeds varieties grown by the most of the seeds growers.

All the seed growers in the village are the registered seed growers with Odisha State Seeds Corporation (OSSC). After harvest the produce is taken to the processing unit of OSSC which is about 20 km from some villages. However, distance varies from village to village. Transport cost is borne by the farmers themselves. The initial payment for seed is made

within a month which is roughly 60 per cent of the total price of seeds procured by the OSSC. Rest is given within a period of 6-8 months. However, major problem with OSSC is ceiling for procuring rice seed which was roughly 60-70 per cent of the threshing floor certificate. This result in good quality rice seed, which should have been sold as seed, is consumed by the farmers or sold in the market as grain.

### **West Bengal**

In West Bengal, it is noted by farmers that some of the very important seeds have completely gone out of production and use. These include *Jaya*, *Vijaya* and *Ratna*. Current varieties of seeds available in the market do not give good yields. Farmers have bad experience of *Swarna* variety of rice seeds because many of low yields. This might be because of non-suitability of *Swarna* varieties to soil in West Bengal for particular types of land.

Farmers' buy *Swarna* at about Rs 40 per kg. Sometimes farmers purchase seeds at three time's higher price. 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.

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. Most of the farmers are unaware of seed purification procedures. Farmers are aware that HYV seeds can be used for three seasons.

Farmers distinctly identified the difference between tastes of rice from available HYV rice seed varieties and claimed that the taste of new varieties is not as good as the old ones. Many farmers opine 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 also suggested that the government should take immediate steps in bridging the gap.

Many farmers claimed that now 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 HYV rice seeds are being smuggled from Bangladesh to India. It was also claimed that some of the Bangladesh varieties have been brought into India by people who migrated to India from Bangladesh.

## Farmer's Perspective on Rice Seeds Availability in Bangladesh

Situation in Bangladesh is not much different. Production and marketing of high yielding varieties of rice seeds is mostly controlled by government agencies. Interactions with farmers revealed that many times farmers find it difficult to access desired variety at right time and affordable prices.

Farmers' saved and informal seeds (varieties and traditional) constitute and meet nearly 40 per cent of the total demand for rice seeds in the country. This source is the most important for farmers followed by notified variety seeds. Farmers usually prefer not to buy seed from any source and use own farm-kept seed. This is on the grounds that buying seed from external sources poses uncertainty regarding availability and price. Farmers argued that it is preferable to use own preserved seed, albeit lower yield, than facing uncertainty.

It seems, lack of trust in major local varieties is compelling farmers to opt for traditional and also

informally traded seeds. Adaptability of variety seeds of Indian origin is also an important influencer.

## Informal Trade between India and Bangladesh

When farmers find it difficult to access good quality rice seeds at the right time and affordable prices, they tend to explore other possibility. Inadequate rice seed production and inefficient marketing and distribution in Bangladesh and India are inducing farmers to use seeds brought in through informal routes. Evidences suggest that there is informal rice seeds trade occurring at the border points between India and Bangladesh. The main points of such trade are district centres of Jiban Nagar, Jessore district, Benapole, Kushtia, Pragpur, Khulna, Darshana, Rajshahi, Godagiri, Dinajpur, Lalmonirhat, Burimari, Nawabgunj, Sonamasji, and also some other points. Traders in a group of 3-10 informal on an average participate in such trade. Evidences also suggest that the items generally traded by these illicit networks range from rice seed to rice, pulses.<sup>3, 4</sup>

**Table 1: Rice Seeds Varieties Informally Accessed by Farmers in Bangladesh and India**

	Jessore	Dinajpur	Chapai Nawabganj
1. Informal rice seeds trade varieties	<i>Swarna (lalswarna, guti, Minikit (Zira Minikit)</i>	<i>Swarna, Swampa, Parija, Mamun</i>	<i>Swarna (Guti and Sada), Parija, Somsor</i>
2. Certified Seeds of Indian HYV	Certified seed of 30kg bag are available	Certified seeds are unavailable but farmers produce locally	Certified seeds aren't available but farmers produce locally
3. Germination problem of Indian HYV	Germination problems is not found	Germination problem for Indian HYV is lower than that of Local HYV	<i>Parija</i> variety has germination problem
4. Production per <i>bigha</i>	20/22 mounds	18/20 mounds	18/20 maunds
5. Informal Trade frequency	Frequent informal trade across borders	Occasionally trade between borders and farmers produce locally after taking from Indian neighbor	Informal trade is not regularly occurring
6. Trend of Hybrid rice production	Hybrid is exhibiting decreasing trend	Uses of hybrid seeds is falling	Uses of hybrid seeds is falling
7. Last five years production of Indian HYV	<i>Swarna, minikit</i>	<i>Swarna, Swampa</i>	<i>Swarna, Parija</i>
8. Functionality of quarantine office	Quarantine office is fully functional	Quarantine office is fully functional	Not Visited
9. Seeds generation	Farmers are concerned about the seeds generation	Farmers are not concerned about seeds generation	Generation related information of seed is not available in case of farmers preserved seed

Source: *Rice Seeds: A Study of Availability and Accessibility in Bangladesh and India*

Farmers on both sides of the border have developed a preference for HYV seed from across the border. Intrinsic adaptability of rice seed in local conditions seems to be the reason. Interactions with farmers and other stakeholders reveal that many varieties produced in India and Bangladesh, as indicated earlier, are popular in both the countries. Some of these include BR-11, BRR1 Dhan-28 and BRR1 Dhan-29 (Bangladeshi varieties in India); and *Swarna* (including *Guti* and *Sada*), *Parijat*, *Somsor*, *Swampa*, *Mamun* (Indian varieties in Bangladesh).

It seems stakeholders, including government officials, on both sides of the border are aware of this. Interactions also brought about and identified most informally traded rice seed varieties. A list of some specific varieties traded informally and adapted by farmers is presented in the table (Table 1).

The magnitude of the informal use of rice seed varieties can be understood from the fact that in Chapai Nawabganj district of Bangladesh out of 48,000 hectare land, *Swarna* is cultivated in 33,000 hectare land in Aman Season. Seeds are made available through both informal trade and exchange between farmers. Farmers meet most of their seed demand from their preserved seed. Miniket and *Swarna* seeds are coming informally in Bangladesh at Benapole area of Jessore district in 30 kg package. These are certified seeds from Indian authority, which is sold in the informal market at Tk. 60 per kg.

Indian varieties are dominant in the region. After getting expected amount of production, they preserve it for their next cultivation time. In the Jessore border area, it is found that foundation seeds and certified seeds bags of rice are smuggled from India and used for cultivation. Farmers informed the study team that

they little faith in the publicly supplied seeds as adulterations are common phenomena.

Similarly, many Bangladeshi varieties are quite popular, as indicated in Table 1. Interactions with seed dealers in West Dinajpur district of West Bengal revealed that about 20 per cent of the total seeds sold is Bangladesh variety (BR11). In one particular district of West Bengal, it is noted that a single producer produce about 250-300 metric tonnes BB11 (originally BR11) and supplies these to other eastern and north-eastern states. Such varieties are performing quite well in local conditions of eastern region of India.

## Conclusion and Policy Recommendation

Going by the developments and experiences of farmers both in India and Bangladesh it is clear that HYV rice seeds distribution and marketing in the two countries suffer from inadequacy in production and inefficient distribution. Farmers' experiences relating to availability and accessibility and also informal movement of HYV rice seeds reveals that seeds produced in India are adaptable in Bangladeshi conditions and vice versa. Thousands of farmers have benefitted from this. It is also evident that a major factor influencing informal trade between the two countries is lack of any official initiative.

Realising that improved rice seeds is a critical input for sustainable rice production, and thus food security, both countries need to improve and bring in greater efficiency in production and distribution of HYV rice seeds. Further, it also calls for initiatives towards formalisation of its trade. Formalisation of trade has the potential to help farmers increase their rice yield and production which lead to increased production of rice and reduction in food insecurity. This, however, calls for strong political commitment.

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## Endnotes

- 1 The report is produced under the project 'Addressing Barriers to Rice Seeds Trade between India and Bangladesh' supported by Bill & Melinda Gates Foundation. This project covers a period of 21 month (January 2014 to September 2014) and is implemented in India (Bihar, Jharkhand, Odisha and West Bengal) and Bangladesh. Details about the project can be accessed at <http://www.cuts-citee.org/RISTE/>
- 2 *Ibid*
- 3 Chakraborty, Mohor, Indo-Bangladesh Informal Trade Nexus: India's Security Predicament, Asia Pacific Journal of Social Sciences, Vol. I (1), Jan-Jun 2009
- 4 Pohit, Sanjib and Taneja, Nisha, India's Informal Trade with Bangladesh: A Qualitative Assessment, Blackwell Publishing 2003

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This Briefing Paper has been researched and written for CUTS Centre for International Trade, Economics & Environment, D-217, Bhaskar Marg, Bani Park, Jaipur 302 016, India, Ph: 91.141.228 2821, Fx: 91.141.228 2485, E-mail: [citee@cuts.org](mailto:citee@cuts.org), Web Site: [www.cuts-international.org](http://www.cuts-international.org), [www.cuts-citee.org](http://www.cuts-citee.org).

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