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## Harmonizing Seed Policies for better Cooperation in Rice Seed Trade between India and Bangladesh

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Lack of availability of quality rice seeds is a dent for achieving higher yield in both India and Bangladesh. Since both the countries are characterized by similar agro-climatic conditions, it could be economically rewarding if the two cooperate and trade varieties suitable for the local conditions. However, both the countries suffer from technical and resource constraints in production and distribution of adequate quantity of seeds. The problem is further aggravated by lack of cooperation and trade in rice seeds between the two countries. Varying national laws and regulation and lack of official recognition to HYV seeds available are two most important reasons. It is expected that harmonization of seed certification processes, laws and regulation in Bangladesh and India could make good quality seeds available and accessible to a larger number of farmers. This in turn, could help raising rice yields, and improve food security scenario in both the countries.

Keywords: Rice seed availability, Informal trade, India-Bangladesh Cooperation, Food security

JEL codes: F13

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## 1. Introduction

A projection made by FAO<sup>1</sup> shows that world population will increase from 6.9 billion in 2010 to 9.3 billion people in 2050; and agriculture will play a fundamental role in meeting the world's growing demand for food, feed and fibre. In order to feed the world population in 2050, agricultural production will have to almost double, and most of the incremental output will have to come from increases in yields. This is even more important given the threat on food production due to climate change. A consistently good yield will crucially depend on quality of seeds used by the farmers. In fact, high-quality seed is a pre-requisite to achieve higher yield and so good returns for farmers. Developing countries like India and Bangladesh will be in greater need to produce and use high-quality seeds because of their changing demographic profiles and also the need for poverty alleviation, which continue to be a challenge for these countries in coming decades. Both the countries presently show a higher rate of population growth compared to the developed and many developing countries.

The linkage between quality seeds and crop yields is well established. Quality seed, also termed as healthy seed, is defined as varietally pure<sup>2</sup> seed variety with a high germination percentage, free from diseases and disease organisms, and with a proper moisture content and weight. This quality seed can emerge from both seeds of a variety as well as from development and dissemination of high-yielding varieties (HYVs) developed through scientific breeding. It may be noted that the latter one was the primary contributor to first green revolution in South Asia in sixties and seventies of the last century. It has been widely noted that use of quality seeds can increase yield by up to 15 to 20 per cent. In addition, utilization of quality seeds by farmers will also increase the productivity potential of other farm inputs, such as irrigation, fertilizers, pesticides and others.

Thus, attaining higher yield is crucial for India and Bangladesh, which are home to quarter of global population suffering from hunger and malnutrition. The limited marketing and distribution capacities to meet the demand for the quality seeds in both the countries has turned out to be the bone of contention and focus for the policy makers. It is believed that in the absence of an

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<sup>1</sup>FAO (2009), High-Level Expert Forum on How to Feed the World in 2050, Rome, 12-13 October.

<sup>2</sup> Here quality seed denotes high yielding varieties, and excludes Genetically Modified (GM) seeds.



enabling environment for adequate availability and easy accessibility to quality seeds, the already precarious situation of food insecurity prevailing in the two countries could further aggravate.<sup>3</sup> Improving the situation, inter alia, calls for structural changes in the form of harmonization of seed laws, policies and certification procedures. The paper focuses on analyzing how harmonization could help both India and Bangladesh in attaining the goal of better rice seeds availability and accessibility. It simply considers the facts from around the world and advocates the beneficial impacts of harmonization of seed policies to the betterment of rice farming households in both the countries.

### **1.1 Factors that call for harmonization of seed policies, laws and certification procedures**

Evidences suggest that both India and Bangladesh suffer from technical and resource constraints in production, marketing and distribution of adequate quantity of seeds. However, in terms of production, India appears to be better placed. There are also some issues emerging from management point of view often resulting in (a) lack of awareness, and (b) unavailability of seeds in time and at affordable prices. This is reflected by low seed replacement rate in both the countries.<sup>4</sup> Excessive involvement of the public bodies and subsidies in the seeds sector are often argued to be the two important reasons for inadequate market capacities. This is, however, not to deny benefits farmers have received that has helped improve accessibility of small and marginal farmers to quality seeds. But at the same time, this has erected a fence for the private sector to explore the market opportunities in the seed sector. Such provisions appear to have restricted private investment and participation in the seeds sector.

In a situation of scarcity (demand-supply gap) and market inefficiency (farmers' inability to access seeds at right price and right time), trade is considered as the tool for optimizing domestic availability — trade can lead to attainment of demand and supply equilibrium. With respect to bilateral cooperation between India and Bangladesh, it has for long been observed mutual cooperation and bilateral trade has proven beneficial for both the countries in many sectors, such as textiles, automobile, etc. However, the cooperation is still limited in other crucial sectors like

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<sup>3</sup> Within each of the countries, nearly a quarter of population live below the poverty line. The two countries also have one of the highest prevalence of underweight mortality rate among children below five years of age. 2012 *Global Hunger Index 2012*, available at <http://www.ifpri.org/sites/default/files/publications/ghi12.pdf>

<sup>4</sup> Seed replacement rate in India and Bangladesh is about 25 percent, much lower than developed and many developing countries.



seeds. It is to be noted that the seeds sector cooperation between India and Bangladesh has been highly uneven. On one hand the two countries effectively trade in maize and some other seeds (Table 1); on the other hand in case of HYV rice seeds there is hardly any formal flow, in spite of proven acceptability and adaptability of rice seeds which are exchanged in the local markets through informal flow across the border.<sup>5</sup>

Drive towards addressing the issues of food security and climate change in future need to rely on creating sustainable agricultural system in the two countries. This implies creating and strengthening local agricultural production system. Considering the role and potential of seeds as a tool for raising crop yields and production, it needs to be given a place of prominence in the public and private initiatives towards developing the seed sector into a progressing and inclusive industry. For seed sector to transform itself into an industry there is need for bringing in private investments. This can be facilitated by increasing market opportunities for private players both within and across borders.

While increasing market opportunities for private players at the national level will be influenced by a number of factors, including but not limited to, favorable sectoral policy initiatives, which might culminate in improved perception among private investors; for cooperation at cross-border level, it needs to be first ascertained that compatibility of HYV seeds produced in one country exists in another country. The focus here is on rice seed trade between India and Bangladesh.

Historical data suggest that similarity in agro-climatic conditions and food habits in the two countries tend to make seeds compatible. Such similarities also generate preference for seeds from across the border. There are several examples to strengthen this argument. It is useful to note that Bangladesh imported HYV rice seeds from India at two instances.<sup>6</sup> In the year 1971-72, Bangladesh imported 701 metric tons of rice seeds – Jaya and IR-8. Again, few years later in 1975-76, Bangladesh imported 1100 metric tons of IR-20 from India. It might be noted that the import from India was in addition to import of HYV rice and other seeds from other countries. Seventies and early eighties of the last century were the period when Bangladesh faced alarming deficits in meeting its seed requirements.

<sup>5</sup>[http://www.cuts-citee.org/RISTE/pdf/Fact\\_finding\\_exercise\\_in\\_Eastern\\_India\\_and\\_in\\_Bangladesh-FGDs\\_and\\_Traders\\_Interviews.pdf](http://www.cuts-citee.org/RISTE/pdf/Fact_finding_exercise_in_Eastern_India_and_in_Bangladesh-FGDs_and_Traders_Interviews.pdf)

<sup>6</sup>Dalrymple, Dana G. (1978), Development and Spread of High-Yielding Varieties Of Wheat And Rice, in the Less Developed Nations, [http://impact.cgiar.org/pdf/42\\_1.pdf](http://impact.cgiar.org/pdf/42_1.pdf)





Situation has now changed significantly, as Bangladesh has over the years built up its own infrastructure to produce HYV seeds. Organizations in public and private sectors supply most of the HYV rice seeds in Bangladesh. This, however, has not been able to control movement of seeds from across the border. In one instance, it is officially acknowledged that varieties from India are extensively used in different parts of Bangladesh, especially areas bordering India. For instance, In Chapai Nawabganj district, Indian Swarna variety is used on 33,000 hectares out of 48,000 hectares under rice cultivation.<sup>7</sup> Similarly, on the other side of the border – for example Dakshin Dinajpur district bordering Bangladesh – HYV rice seeds from Bangladesh are used by Indian farmers. These are just one of several instances. These revelations provide clear pointers to the fact that HYV seeds produced in both India and Bangladesh are adaptable and compatible in both the countries. This is even more important given the threat of climate change in both countries.

In the light of above background, the present paper seeks to analyze and understand the importance of harmonization and how it benefits in achieving the goal of availability and accessibility of quality seeds to farmers in both countries.<sup>8</sup> The analysis, however, is confined to HYV rice seed. The paper is structured into seven sections. Section two provides theoretical background to harmonization of seed laws, policies and certification. Section three analyses the similarities and dissimilarities in seed standards and certifications in the two countries. Section four highlights experiences of other countries/regions with regard to harmonization of seed certification. Section five describes the progress made by Bangladesh and India towards harmonization of seed certification. Section six explores the scope for regionalization of WTO-SPS, and Section seven provided conclusion and way forward.

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<sup>7</sup> Mahfuz Kabir, Robert S Guda and Ashfaq R Khan, “Bangladesh-India Rice Seeds Trade: Trends, Issues and Policy Perspectives”, draft paper prepared for International Conference on *Addressing Barriers to Rice Seeds Trade between India and Bangladesh*, organised jointly by Bill & Melinda Gates Foundation, CUTS International and Unnayan Shamannay, BRAC Centre Inn, Dhaka, 22 December 2013.

<sup>8</sup> This paper heavily draws from a discussion paper titled ‘Harmonisation of Seed Certification Processes in Bangladesh and India’ by Suresh P Singh, Policy Analyst, and Neha Jain, Research Assistant, CUTS International, prepared under the project “Addressing Barriers to Rice Seeds Trade between India and Bangladesh”. The project is supported by Bill & Melinda Gates Foundation.



## **2. Harmonization in seed laws, policies and certification**

Seed certification is a proof of standards embedded in a seed. These seed standards set by different countries vary depending on local agro-climatic conditions and other requirements. Such variations are clearly reflected by the available literatures on seed laws and certification.

According to an OECD study<sup>9</sup>, almost all countries have developed their own certification standards – some have accepted the OECD Seed Schemes Rules (in existence since 1958) as their national standards. The paper also notes that while in some countries certification is obligatory, in others it is optional; some certification schemes focus on the genetic characteristics; in others, varietal certification is complemented by tests carried out in order to check laboratory standards, such as minimum germination, minimum analytical purity and seed health.

When one talks of harmonization of seed certification, it essentially means imbibing in itself a set of standards and procedures desired in a seed in different countries or region. These require certification standards and processes to be controlled and inspected by official sources of agreeing parties in order to guarantee consistent high quality seeds for end users. This is performed through (i) controlling the seed in previous generations; (ii) carrying out field inspections during the multiplication process to ensure that there is little contamination and that the variety is true to type; (iii) growing samples in control plots of the known seed to ensure that the progeny conform to the characteristics of the variety and (iv) seed quality testing in laboratories. Considering that each country has a specific set of standards, as indicated above, the task of harmonizing the standards is quite challenging. Therefore, set of harmonization processes amounts to a quality assurance drive that integrates standards acceptable to two or more countries.

## **3. Technical aspects of harmonization**

Both Bangladesh and India have set forth a set of standards for paddy to qualify as seeds. If one relies on the two prescribed parameters (Table 2 and Table 3) to compare and analyze

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<sup>9</sup> OECD Seed Schemes, A Synthesis of International Regulatory Aspects that Affect Seed Trade, available at <http://www.oecd.org/tad/code/internationalregulatoryaspectsseedtrade.pdf>



similarities and discrepancies in the seed certification procedures, it is observed that in most cases, both the countries follow a similar approach.

Marginal differences with regard to seed standards are observed between set standards by Bangladesh and India. India appears to have slightly stricter requirements for paddy to qualify as seeds. These include parameters such as purity of seeds, presence of inert matters. However, both the countries are similar in some other parameters, such as germination standards.

It can be noted that rice seed certification requirements are not much different from other developing regions, where some progress in harmonization has been achieved.<sup>10</sup> In the case of Southern African Development Community (SADC), consisting of 14 member countries, similar standards are observed in many parameters. This is true especially in case of germination (80 per cent), minimum purity of seeds (98 per cent) and moisture (12.5). In the case of isolation, the requirement is 5 meters compared to 3 meters in India and Bangladesh. Two important observations emerge from the two tables above. First, rice seed standards of the two countries are not very much distinct from each other. This might make the process of harmonization easier. Second, rice seed standards set forth by India easily fit into the requirements in Bangladesh. In fact, it appears, there is no requirement for bringing in much change. On the other hand, Bangladesh will be required to make a little adjustment for exporting HYV seeds to India. The potential benefits (Box 1) could be a good case for India and Bangladesh to work towards harmonization of seed laws and regulations.

It is here useful to note that as per the existing requirements of rice seed standards in the two countries are almost same but still the rice seeds exchange is absent, this is generally attributed to the unacceptability of certificates from each other even when the standards are almost same.

There are noted instances of Bangladesh raising the issue of denying of its certificates in India, in their bilateral meetings. In the light of above stated benefits that both the countries can derive from each other via mutual seeds (including HYV rice seeds) exchange, it can be concluded that harmonization of certification processes will be beneficial for both the countries. In the immediate future, post harmonization, while India can gain in terms of extended market for seeds

<sup>10</sup> SADC Secretariat, Technical Agreements on Harmonization of Seed Regulations in the SADC Region, [http://www.icrisat.org/Publications/EBooksOnlinePublications/Publications-2008/Seed\\_harmonization\\_English\\_J304\\_2008.pdf](http://www.icrisat.org/Publications/EBooksOnlinePublications/Publications-2008/Seed_harmonization_English_J304_2008.pdf)





produced in India; Bangladesh would gain from increased availability and accessibility to HYV seeds. This is because harmonization will create an enabling environment for trade, which will in turn make seed market more competitive in terms of price, leading to greater market efficiency.

Crop yield and production could also improve as a result of harmonization leading to formalization of trade. In the long term, the benefits might even out and both the countries could gain from free movement of seeds across the border. In addition, the harmonization of seed certification can help both the countries in bridging demand-supply gaps and could also help in better marketing and distribution.

**Box 1: Potential benefits from harmonization of seed certification**

- Increased availability and accessibility to quality seeds
- Improvement in quality of seeds
- Increased seed replacement rate (SRR)
- Reduction in demand supply gap for quality seeds
- Higher crop yields and production
- Enhanced level of food security and livelihood opportunities
- Enlargement of market size
- Increased R&D and innovation

Source: Author's compilation

#### **4. Some regional experiences with regard to harmonization of seed certification**

One can argue that formalization of trade in seeds, including rice seeds, will improve seed demand-supply scenario in both the countries. This formalization, however, require a number of other issues to be effectively addressed on both sides of the border. The foremost among these is harmonization of seed laws, regulation and certification procedures; others being issues relating agreement on varietal testing, approval, and release of a variety as seed production.



With regard to harmonization of certifications, it may be noted that harmonization of certification standards is one measure which can enable the smooth flow of seeds across the border. This will not only enable seeds trade, but will also help farmers in the two countries to have easy access to quality seeds. There are a number of global examples of successful harmonization of seed standards and certification processes.

European Union has a unified system of certification covering the whole region consisting of 27 member countries. The EU regulates the marketing of seed and propagating material of agricultural, vegetable, forest, fruit and ornamental species and vines for the whole region.<sup>11</sup> The system give the user of seed guarantees in respect of varietal identity and purity, germination capacity and specific purity as well as guaranteeing the seed bought from a plant health point of view. The unified system of certification is ensured through five steps. These include field inspection, seed sampling, seed testing, labeling/sealing, and post control.<sup>12</sup> Besides, it stipulates that seed produced in third countries is considered equivalent to seed produced in accordance with Community legislation, *e.g.*, seed may be marketed within the EU if the seed affords the same assurances as seed officially certified within the Community.

FAO<sup>13</sup> is also playing a significant role towards harmonization of seed system in different countries. The harmonization of seed laws and legislations is presently one of the major FAO major initiatives. It has initiated harmonizing seed laws in the sub-regions of Africa and in Central Asia to facilitate cross-border movement of seeds and provide a broader market for seed enterprises. The harmonization of seed regulations seeks to facilitate countries with seed deficit to easily find seed in neighboring countries.

A similar initiative has also been taken in the Central Asian region. It focuses on facilitating public and private seed sector stakeholders to initiate a process of regional consultation to harmonize trade-impeding seed regulations.

<sup>11</sup> Seed & Propagating Material - EU Rules, [http://ec.europa.eu/food/plant/plant\\_propagation\\_material/index\\_en.htm](http://ec.europa.eu/food/plant/plant_propagation_material/index_en.htm)

<sup>12</sup> Harmonisation Of The Seed Regulatory Framework at the Regional Level – European Union, Päivi Mannerkorpi, European Commission, DG Health and Consumers, [https://www.seedtest.org/upload/cms/user/5Mannerkorpi\\_rev.pdf](https://www.seedtest.org/upload/cms/user/5Mannerkorpi_rev.pdf).

<sup>13</sup> FAO, AGP - Seed Rules and Regulatory Frameworks, [http://www.fao.org/agriculture/crops/core-themes/theme/seeds-pgr/seed\\_sys/rules/en/](http://www.fao.org/agriculture/crops/core-themes/theme/seeds-pgr/seed_sys/rules/en/)



Some of the sub-regions in Africa which have undertaken harmonization initiatives with the support of FAO include the Southern African Development Community (SADC), the Economic and Monetary Union of West Africa (UEMOA) and the Economic Community of West African States (ECOWAS). Through a participatory process involving the key stakeholders in the countries, a legal framework for the harmonization of seed legislation is developed.

#### **4.1 Beneficial impacts of harmonization**

There are evidences to suggest that harmonization of seed laws and regulation is beneficial to participating countries. An initiative in Eastern and Central Africa (ECA) in 2002 covering Kenya, Tanzania and Uganda to rationalize and harmonize the regulatory and legal frameworks governing the seed industry has significantly helped the region to overcome seed scarcity and inefficiency in the marketing and distribution system. ECA's seed industry, which was previously small, fragmented and fraught with bottlenecks, transformed itself into a vibrant industry.<sup>14</sup>

In 2004 the initiative expanded to other countries, namely Burundi, DR Congo, Eritrea, Ethiopia, Rwanda, Madagascar and Sudan. As a result of the initiative, local seed production in Uganda, Kenya and Tanzania tripled from 43,000 to about 122,000 tons between 2002 and 2008. The initiative also facilitated access to better seeds through trade. Seed imports into the region increased significantly by nearly 70 per cent from 9,000 to about 15,000 tons, while exports from Kenya and Uganda increased from less 1,000 to more than 3,000 tons in the same period. This period also witnessed intra-Eastern and Central Africa (ECA) seed trade growing more than three times. It also paved way for increased involvement of private sector in variety breeding and release and increased the number of high performing seed varieties on the market.

Contrary to what is noted above on the success and beneficial impacts of harmonisation, a study (Keyser, 2013) notes a different picture for the African countries. The study shows that regional harmonization is a complex solution with a seemingly endless number of details to work out. Although some progress is being made regarding agreements on most of the rules and procedures

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<sup>14</sup> Association for Strengthening Agricultural Research in Eastern and Central Africa, <http://www.asareca.org/old2011/index.php?page&as=304>



needed for harmonized trade, none of the regional seed systems in Africa are operational until laws are revised and institutional capacities built.

One can argue that the beneficial effects – increased seed production – that emerged in some African countries from the initiative towards harmonization could be because of the positive momentum, the initiative generated.

The Organization for Economic Co-operation and Development (OECD) Seed Schemes set up in 1958 provide an international framework for the certification of seed.<sup>15</sup> The schemes are globally recognized for its contribution to harmonization of certification processes and for facilitating movement of seeds across borders. The Schemes aim to facilitate seed trade by reducing technical barriers, improving transparency and lowering transactions costs. The Schemes were set up with the objective to encourage the use of seed of consistently high quality in participating countries. There are presently 58 Members of one or more of the OECD Seed Schemes worldwide. It is to be noted that India is also a part of OECD global seed schemes.

In addition, it might also be noted that Australia took initiatives to link its domestic market with the world seed market by allowing variety introduction from anywhere without government control. Considering the potential benefits from harmonization, Romania (from 1997) and Bulgaria (from 1999) revised seed laws and regulations in 1997 and 1999 respectively to allow automatic approval for all varieties in EU Common Catalogues. This move resulted in major Europe-based seed companies establishing their presence in the market, leading to introduction of several new varieties. As an outcome of this integration, Romania's seed exports to the EU have increased significantly.<sup>16</sup>

Besides, a number of other international organizations, conventions and treaties directly or indirectly deal with the regulation of seed certification and trade. Some of the examples include the globally recognized standard procedures for seed sampling and testing facilitated by the International Seed Testing Association (ISTA); the International Union for the Protection of New Varieties of Plants (UPOV) which seeks to facilitate protection of intellectual property rights of

<sup>15</sup> OECD Seed Schemes, A Synthesis of International Regulatory Aspects that Affect Seed Trade <http://www.oecd.org/tad/code/internationalregulatoryaspectsseedtrade.pdf>

<sup>16</sup> David Gisselquist, Harmonization of seed legislation and regulation in CEEC, CIS and other Countries in Transition, <http://www.fao.org/docrep/005/y2722e/y2722e1c.htm>



breeders of new plant varieties; and the International Seed Federation (ISF) which provides seed companies with trade and arbitration rules.

## **5. Progress made by Bangladesh and India in harmonization**

Considering the importance, the government of Bangladesh and India have taken some initiatives towards harmonization of seeds standards between the two countries. The primary objective of this is to facilitate trade in variety seeds between the two countries. Such initiatives towards harmonization recently being discussed at bilateral level between Bangladesh and India is not unprecedented.

Both India and Bangladesh and also international organizations such as FAO, IRRI and others appear to be conscious of the issues that hinder productivity of rice and other crops in the two countries. Availability and accessibility to quality seeds are considered to be two of the most important deterrents and therefore needs to be addressed on an urgent basis. This is, of course, not to deny importance of other inputs, such as soil conditions, fertilizers, pesticides, irrigation infrastructures, etc. However, considering agro-climatic conditions of the two countries and prevalence of small and marginal farming systems on one hand and costs involved in availing these inputs on the other, seeds appear to be an obvious and potent choice for addressing the issues of low crop yields and low production.

Considering the prevailing situation and the need for enhanced cooperation in rice seeds between the two countries, both the Government of Bangladesh and India have initiated several steps. Some of them focus on domestic issues, such as ensuring increased production and distribution of quality seeds; others focusing on fostering regional and bilateral cooperation. It might be iterated that both the countries are integral part of SAARC Seed Bank initiative that seeks to provide a framework for cooperation in seeds to secure the region with regard to availability and accessibility to quality seeds in case of such requirements.

At the bilateral level, there has been an increased interaction in recent years with regard to cooperation in seeds. Some of these have been facilitated by international organizations like IRRI and FAO and focus on harmonization of seed related procedures and regulations. It might be mentioned that both the countries are part of IRRI's initiated the Stress-Tolerant Rice for





Africa and South Asia (STRASA) project.<sup>17</sup> Under this project officials of Bangladesh and India, at both high and working levels, has catalyzed a series of discussions focusing on ways to share rice germplasm and improved production technology for mutual benefit. An official from Bangladesh has gone to the extent of proposing harmonization of seed laws, legislations, and protocols to make the collaboration in the seed sector more effective.<sup>18</sup>

#### Box 2: Seed trade and seed marketing in Bangladesh: Some requirements

##### **Import of seeds**

To import any type of seed to Bangladesh, an import permit and a phyto-sanitary certificate are required. The import permit is issued by the Plant Protection Wing (PPW) of the Department of Agricultural Extension (DAE) under the MoA while the phyto-sanitary certificate is provided by the exporting country. ISTA orange certificate is not yet mandatory but quality certificate from the seed certification authority of the exporting country is needed. In addition, imported varieties of the five notified crops (rice, wheat, potatoes, jute and sugarcane) must be listed on the Official National List of Varieties and comply with the crop specific standards.

##### **Export of seeds**

Documentation required to export seed is issued by the Plant Protection Wing of DAE in the form of an export permit and a phyto-sanitary certificate. At present, according to the seed companies visited and other stakeholders from the seed sector, it is difficult to export seeds from Bangladesh because of lack of an internationally accredited laboratory in Bangladesh which can issue seed quality certificates. The private seed sector is pushing hard to get an accredited laboratory in the country, either as a private initiative or as a part of SCA.

##### **Release of varieties (notified crops)**

Any person requiring registration of a variety of a notified crop must apply to the National Seed

<sup>17</sup> The STRASA project works closely with the agricultural and rice research centers of South Asia and Africa to further deepen and then disseminate, in as participatory a manner as possible, the results of scientific research spearheaded by the IRRI. Research under STRASA responds specifically to the needs of rice farmers and consumers in areas unfavoured by nature for rice production.

<sup>18</sup> Bangladesh: Workshop seeks to enhance seeds cooperation with India, Tuesday, March 12, 2013, <http://irri-news.blogspot.in/2013/03/bangladesh-workshop-seeks-to-enhance.html>



Board (NSB) of MOA. The new variety can be approved by the NSB after it has passed the DUS (Distinctness, Uniformity and Stability) test (carried out by the Seed Certification Agency) and the Technical Committee of NSB has endorsed the results of the multi-location trials for performance testing (Value for Cultivation and Use or, VCU tests).

#### **Marketing of seeds (notified crops)**

To market seeds of notified crops, the varieties of these crops are to be on the national list of varieties through notification in the official gazette. The latest approved crop variety list (third edition) was printed in 2004 with the support from SID/DANIDA and includes 448 varieties of 95 different crops (Vol. II, Annex 2). Rice, with 89 varieties, is the most represented crop on the list.

#### **Marketing of seeds (non-notified crops)**

New varieties of these crops can freely be marketed in Bangladesh after the acquirement of a registration number, which is issued without testing by the NSB of MOA.

#### **Plant quarantine**

Plant quarantine services in Bangladesh are run by the Plant Quarantine Section which belongs to PPW of DAE. Before a consignment of seed can enter Bangladesh, seed health inspections are carried out. This is mainly done by the inspectors of the Plant Quarantine Section and through post-entry quarantine observations. Testing of imported (plants and plant products) and exportable goods, including germplasm, is carried out, at the expense of the importer. After the fulfilment of the all phyto-sanitary requirements, the consignment of seed is released. In contrary, re-exportation or destruction of the seed consignment is ordered.

**Source:** Seed Sector Country Profile Bangladesh, Danish Seed Health Centre for Developing Countries,

<http://www.dshc.life.ku.dk/Publications/~media/migration%20folder/upload/shc/docs/pdf/country%20profile%20bagladesh%20vol%20i%20final.pdf.ashx>



It is worth mentioning that in early 2013, facilitated by STRASA, a seed related delegation of India visited Dhaka.<sup>19</sup> The Indian delegation included, beside top officials, senior officials from key offices concerned with seed production, distribution, certification in India, and the Indian Council for Agricultural Research (ICAR). The Bangladesh delegation was headed by the Minister of Agriculture, and included counterparts from all the relevant agencies of the government of Bangladesh.

A number of issues relating to cooperation and knowledge sharing in rice seeds were discussed during the intensive and focused discussion. The STRASA team identified and suggested both the countries to focus on the following areas for cooperation and sharing of progress in rice productivity in the two countries:

1. Joint evaluation of improved rice varieties for release in areas with similar agro-climatic conditions in both countries.
2. Collaboration to resolve issues on ownership, intellectual property rights, and germplasm exchange.
3. Reciprocal acceptance of research data, including results of farmers' participatory varietal selection activities, generated in one country to support varietal release in the other country.
4. Streamlining of evaluation to reduce processing time from two to three years to one.
5. Collaboration to formulate seed protocols and guidelines compatible across countries.
6. Promotion of pre-release multiplication and demonstration of breeding lines and varieties at advanced stages of release to accelerate awareness among farmers and ensure a sufficient supply of breeder seed once a variety is released.
7. Promotion of private-sector participation in seed systems to expand the seed supply.

Out of the seven points shown above, while the first four relate to varietal release aspects, the sixth one is related to disseminating the information on varieties. Collaboration relating to varietal aspects is very important to ensure that varieties developed in India are suitable to

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<sup>19</sup>STRASA News, Vol.6, No.1, January-March, 2013, IRRI facilitates high-level workshop between India and Bangladesh to promote regional cooperation in the seed sector, [http://strasa.org/attachments/article/53/STRASA-News-Vol6\\_No1\\_Jan-Mar2013.pdf](http://strasa.org/attachments/article/53/STRASA-News-Vol6_No1_Jan-Mar2013.pdf)



Bangladesh and vice versa. Any seeds that may be traded then must follow the agreed certification which, as mentioned earlier, is similar in both countries.

As far as progress made by India and Bangladesh on the indicated areas of cooperation is concerned, anecdotal evidence suggests that some initiatives have been proposed at the bilateral level by the two countries. These include firstly taking initiative towards harmonization of seed certification processes and secondly to identify some important rice seed varieties in the two countries for trade.

The discussions on harmonization between India and Bangladesh (also Nepal) in 2013 and 2014 have culminated in a protocol signed between the two (three) countries. It is likely that cooperation between the two countries will be strengthened in the coming periods.

As a part of an initiatives to the Protocols of discussion signed between India, Nepal, Bangladesh and IRRI, six varieties of paddy viz Binadhan -8, 10, 11 and 12 from Bangladesh and Sukhadhan 5 and 6 from Nepal have been notified in India under Seed Act 1966. The nucleus seed of above varieties will be maintained by Central Rice Research Institute(CRRI), Cuttack and further multiplication from breeder to certified seed will be maintained by National Seed Corporation (The Gazette of India, April, 2015).

## **6. Can regionalization of WTO-SPS help?**

In the backdrop of analysis and arguments presented above, it is worth mentioning that harmonization of seed laws, regulation and certification appears to be one of the several potential initiatives that could facilitate cooperation and formalization of HYV rice seed trade between the two countries. Other potential initiatives could include government decision to identify, test and release of varieties suitable for the local conditions in both the countries.

An integrated but slightly extended version of harmonization of seed laws and regulations is regionalization of WTO-SPS. It could be another potential way to increase cooperation in variety rice seeds. It might be noted that both India and Bangladesh are parties to the WTO-SPS Agreement. The Agreement on Sanitary and Phyto-sanitary Measures clearly advocates for regionalization of SPS for promoting trade. Article 6 of the agreement states that “members shall ensure that their sanitary or phyto-sanitary measures are adapted to the sanitary or phyto-sanitary characteristics of the area – whether all of a country, part of a country, or all or parts of several



countries – from which the product originated and to which the product is destined.”<sup>20</sup> Such a step on the part of any member requires four specific procedures to be followed.<sup>21</sup> These include:

- Conduct survey as per international standards and prepare the data survey report reflecting the absence of the quarantine pests or otherwise;
- Notification of domestic quarantine both at the central and state level wherein state administrative machinery has also to deploy staff at entry check-posts prohibiting the movement/transport of related commodities into the demarcated territories;
- Conduct regular and periodic surveys as per international guidelines to maintain the territory free from the quarantine pests; and
- Have an effective pest eradication/control program to maintain the area pest free.

With regard to regionalization of SPS, India has taken some initiatives. Initiatives have been undertaken and funded by the Department of Agriculture & Cooperation of Ministry of Agriculture, Government of India with a view to identify pest distribution and to demarcate, if possible, pest-free areas in line with international/national standards for phyto-sanitary measures to facilitate international trade in fruits and vegetables from these regions, especially mango. At the state level, Punjab has conducted survey of potato and submitted their report to DAC for onward submission to European Union for export of Potatoes to EU Countries.

It remains to be explored whether such an initiative could be extended to cover crops such as variety rice seeds. However, considering the proximity between India and Bangladesh and the porous border the two countries share with each other, regionalization of SPS is possibly a viable option for increased cooperation in variety rice seed.

## 7. Concluding Remarks

The issue of harmonization of seed standards and certification is critical for both Bangladesh and India especially for addressing the issue of food security and climate change. It can help small

<sup>20</sup> Agreement on Sanitary and Phytosanitary Measures, [http://www.wto.org/english/res\\_e/booksp\\_e/analytic\\_index\\_e/sps\\_03\\_e.htm](http://www.wto.org/english/res_e/booksp_e/analytic_index_e/sps_03_e.htm)

<sup>21</sup> Regionalisation of Trade with reference to WTO-SPS Agreement, <http://phytosanitarysolution.com/wp-content/uploads/2010/12/Note-on-Regionalisation-of-Trade-with-reference-to-WTO.pdf>



and marginal farmers in both the countries to have a relatively easy access to quality seeds. Besides, there is no secret that easy access to quality seeds can raise crop yields by a significant percentage, which in turn could help both the countries to reduce hunger and at the same time improve livelihood opportunities. Initial effort towards harmonization is appreciable, but lot needs to be done.

Another potential option for increased cooperation between the two countries is regionalization of SPS with respect to seed. It could also yield beneficial results for both the countries. Now what is required is that the initiatives so far taken should be strengthened. A time bound approach could be more useful and effective in fostering cooperation.

**Table 1: India's Seeds Export to Bangladesh (USD thousand)**

<i>Types of seeds</i>	<i>Value in 2005</i>	<i>Value in 2008</i>	<i>Value in 2011</i>
Durum wheat of seed quality	1,676(48.0)	24(0.4)	32(0.3)
Maize seed	128(3.7)	2,204(40.)	5,035(50.0)
Seeds, fruits and spores for sowing, nes	1,016(29.1)	1,600(29.0)	2,902(28.8)
Seeds, vegetables, nes for sowing	659(19)	665(12.0)	1,913(19.0)
Seeds, flower for sowing	0	20(0.4)	65(0.6)
Seeds of forage plants, except beet seeds for sowing	0	214(4.0)	57(0.6)
Oilseeds and oleaginous fruits, nes whether or not broken	0	704(12.7)	0
Rice in husk, "paddy" or rough of seed quality	2(0.1)	17(0.3)	78(0.08)
Sesamum seeds, whether or not broken	8(0.2)	3(0.1)	0
Mustard seeds, whether or not broken	1(0)	74(1.3)	0
Total	3,490	5,525	10,082
<i>Source: International Trade Centre, Trade Map Database(2012-13)</i>			
<i>Figures in the parentheses show percentage of India's total seeds export to Bangladesh</i>			

**Table 2: Rice Seed Standards for Bangladesh**

<i>Factors</i>	<i>Standards for each class</i>	
	<i>Foundation</i>	<i>Certified</i>
Pure seed (minimum % by wt)	97.0%	96.0%
Inert matter (maximum % by wt)	2.0%	3.0%
Other seed (maximum % by wt)	1.00	1.00
a. Other crop seed (maximum no. in total, whole sample will be tested)	5/kg 8/kg	10/kg 10/kg
b. Total weed seed (maximum no.; whole sample will be tested)		
Germination (minimum %)	80%	80%
Moisture content (maximum %)	12%	12%
Isolation distance (meter)	3.00	3.00
Other crop plants (maximum % by no.)	0.10	0.20
Other varieties (maximum % by no.)	0.10	0.50
Weed plants (obnoxious, maximum by no.)	0.01	0.02
Plants infested by seed borne diseases (maximum % of infected plants)	10.00	20.00
<b>General conditions:</b> <i>If the field crops are severally damaged or lodged and irregularly flowered that makes crop assessment difficult to judge, the trueness of variety and varietal purity will be rejected.</i>		
<i>Source: IRRI's Rice Knowledge Bank, available at</i> <a href="http://www.knowledgebank.irri.org/qualityseedcourse/index.php/module-5-planning-and-management-of-seed-production/6-seed-certification-system-awareness">http://www.knowledgebank.irri.org/qualityseedcourse/index.php/module-5-planning-and-management-of-seed-production/6-seed-certification-system-awareness</a>		

**Table 3: Rice Seed Standards for India**

<i>Factors</i>	<i>Standards for each class</i>	
	<i>Foundation</i>	<i>Certified</i>
Pure seed (minimum)	98.0%	98.0%
Inert matter (maximum)	2.0%	2.0%
Huskless seeds (maximum)	2.0%	2.0%
Other crop seeds (maximum)	10/kg	20/kg
Other distinguishable varieties (maximum)	10/kg	20/kg
Total Weed seeds (maximum)	10/kg	20/kg
Objectionable weed seeds (maximum)	2/kg	5/kg
Seeds infected by paddy bunt ( <i>Neovossiahorrida</i> maximum)	0.10%	0.50%
Germination (minimum)	80%	80%
Moisture (maximum)	13.0%	13.0%
For vapour-proof containers (maximum)	8.0%	8.0%
Isolation distance (meter)	3.00	3.00
<p><i>Source: The Central Seed Certification Board, Department of Agriculture &amp; Co-operation, Ministry of Agriculture, Government of India, 2013, available at</i></p> <p><a href="http://agricoop.nic.in/imagedefault/seed/INDIAN_MINIMUM_SEED_CERTIFICATION_STAN_DARDS.pdf">http://agricoop.nic.in/imagedefault/seed/INDIAN_MINIMUM_SEED_CERTIFICATION_STAN_DARDS.pdf</a></p>		



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