

# **BUSINESS SERVICE ASSESSMENT**

## **Provision for good quality vegetables seed available in the rural market**

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*This DRAFT report, prepared by IDE and KATALYST with a view to feeding into the design of BDS market development interventions in the vegetable and pond fishery sectors, provides an overview of the sector and points to interesting avenues for further investigation (service channels, business case for delivery, links to competitiveness, etc.) and intervention design. This assessment report does not reflect KATALYST's current methodology and final conclusions on the sub-sector.*

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## 1. The Process

IDE and KATALYST’s Rural Market Development analysis particularly on Vegetables Sub-sector conducted between June and September 2003 pinned down the major constraints besetting the sub-sector. For this analysis, 105 Vegetables and related SMEs were visited and interviewed. A total of 25 (See Box 1.) constraints have been identified, described and catalogued. With these constraints, the team sketched out three broad yet possible business services that can address or strengthen the sub-sector.

The team then filtered the services via a set of four criteria (potential impact that will take place, potential number of beneficiaries of the service, Seasonality and appropriateness for IDE and KATALYST). The objective of this filtering was to identify three initial services to focus on. The selected services were: (a) Provision for good quality vegetables seed available in the rural market (b) Provision for good quality fertilizers, pesticides and micronutrients available in the market (c) Provision for improved knowledge of the farmers about the soil nutrient contents for deciding the proper dose and application method of fertilizers and pesticides.

**Box 1: Number of Constraints**

<i>Type of Constraints</i>	<i>Number</i>
Input Supply	6
Product Dev. & Process Tech	9
Policy	2
Market Access	7
Operation Environment	0
Organization/Management	0
Finance	1

After a series of deliberations, the team planned to do the three-service assessment exercise one by one. This report will incorporate all the information gathered regarding the first service assessment

The team began by developing tools for assessing the demand (Farmers) and supply (Seed suppliers) of better quality seed. To gain deeper understanding of the constraints facing suppliers and users of seeds, the team preferred qualitative over quantitative data capture questions. A sampling frame consisting of seventeen service providers and twenty-four service users was planned. The actual business service assessment was carried out from 14 to 18 September 2003.

The team consolidated its findings from 26 September to 29 September 2003. Then it formulated eight underlying constraints, which hinder the smooth run of the service provision. Then it identified several interventions on which IDE and KATALYST can facilitate. The team also has a plan to arrange an FGD to validate the constraints related to the supply and demand of quality seed, b) propose initiatives to address these constraints and develop the markets for better quality seed.

After the FGD, the team will take a closer look at each proposed intervention in greater detail and select some intervention areas that IDE and KATALYST may seriously consider. To do this, the team will apply the following criteria: (a) extent of its impact (income, employment, etc.) on SMEs, (b) number of SMEs (both directly and indirectly) that will benefit, (c) cost-effectiveness of the intervention, (d) chances of the intervention yielding in sustainable results, (e) IDE and KATALYST’s capacity (including availability of human and financial

resources) to implement or manage the intervention, and (f) time needed to complete the intervention.

## 2. Description of the Service (Provision for good quality vegetables seed available in the rural market)

Quality seed is considered to be the basic input for increasing agricultural output and thereby achieving self-sufficiency in food production. Effectiveness of other inputs like fertilizer and irrigation depends largely on good seed. But use of improved seed is still very limited. Two major reasons behind this fact are:

- Production and distribution of quality seed is insufficient in the public sector as compared to its demand.
- Seed production in the private sector has not yet got the necessary support.

The development and growth of Vegetables greatly depends on the provision and use of quality seeds by the Farmers. Poor quality seeds (adulterated or admixed) results in poor germination, prone to disease attack, less yield, heterogeneous size etc that ultimately implies to less profit at farmers' level.

This service assessment report deals with quality vegetable seeds, which is very important for the production of quality vegetables.

The provision of quality vegetables seed requires:

(a) selection and collection of the quality seed from reliable sources (b) appropriate management of seed production and preservation by the seed growers/companies (c) awareness of not using poor quality seed (d) Technical know-how of the seed growers/farmers regarding seed production and post harvest techniques.

### Box 4: The Objectives of the Focus Group Discussion

- ✓ Validate constraints related to the supply and demand of quality vegetables seed
- ✓ Propose initiatives to address these constraints and develop the markets for better quality vegetables seed

## 3. Related Sub-sector Constraints

Unavailability of quality vegetable seed (germination, moisture content, genetic purity) forces the farmers to go for poor quality seed, using adulterated /expire vegetable seed which leads to poor quality seedlings resulting in less germination, growth and high mortality rate of seedlings at farmers' level.

## 4. Market Information (Supply and Demand of the Service)

### 4.1. The Seed Supplier

Three types of seed suppliers have been identified in the market; they are the Government Suppliers (BADC), Private Companies (Both foreign and local) and the Farmers. Among the total seed market BADC's market share is around 5% and the seed companies and the farmers supply the remaining 95% seed. Recently BADC has squeezed its vegetables seed production activities considering the private sectors' interest in this field.

**4.2. Market Size and Penetration**

In greater Rangpur it has been found that almost 80% people are involved in vegetable cultivation. But if we consider the commercial production about 60% of total population are producing vegetables in greater Rangpur. Again among the districts in greater Rangpur there are concentration of different vegetables in different districts. More specifically tomato production is dominant in Nilfamari, bitter gourd and pointed gourd in Rangpur, cabbage and cauliflower in Lalmonirhat. In Gaibandha and Kurigram all the vegetables of our concern are being produced in general.

Table 1 shows the market size of the total seed demand of different vegetables in greater Rangpur. It also incorporates the range of price of hybrid and local seeds and also the total size of market in terms of taka.

**Table: 1**

Seed	Quantity		Rate		Value (Tk)	
	Hybrid (Kg)	Local (OP) (kg)	Hybrid Tk./Kg	Local (OP) Tk./kg	Hybrid	Local (OP)
Tomato	200	800	20000-30000	8000-10000	5000000	7200000
Cauliflower	1400	100	16000	3000-4000	22400000	350000
Cabbage	1000		8000		8000000	
Bitter Goard	150	14850	3000-4000	300-500	525000	5940000

The major seed companies operating in greater Rangpur are East West Seed (Bangladesh) Ltd, Syngenta, Namdhari, Mollica, United, Rangpur etc. Two NGOs namely BRAC and GKF are also involved in this area for seed production and marketing among their beneficiaries. Table 2 shows the number of dealers/sellers selling seeds in different districts of greater Rangpur.

**Table: 2**

District	Rangpur	Lalmonirhat	Nilfamari	Gaibandha	Kurigram	Total
No of Dealer/seller Operating	148	100	70	60	72	450

**4.3 The Demand-Side: The Farmers**

About 60% of total population of greater Rangpur is producing vegetables commercially and they demand for quality seeds. Almost all of them have a better acceptance over BADC seeds but its availability is scarce. Again since BADC has squeezed its production recently, farmers are switching to other sources. After BADC farmers are inclined to reputed seed company seeds and then dependent on smuggled seeds.

**4.3.1. Satisfaction**

Different satisfaction level has been found in case of different vegetables seed. Table 4 shows the overall satisfaction in case of different vegetables. The table is formulated according to the number of farmers.

**Table: 4**

Seed	Satisfied (%)	Dissatisfied (%)
Tomato	25	75
Cauliflower	30	70
Cabbage	60	40
Bitter Gourd	60	40

The farmers express their dissatisfaction over vegetables seed considering several factors. These have been incorporated in table 5. Many farmers claim on several factors according to that the table has been formulated.

**Table: 5**

Complains from the Farmers	Response (%)
Germination not up to the companies' claim	40
Duplicate seed	35
Adulterated or Mixed seed	30
Non-Uniform seed size	25
Productivity not up to the companies' claim	40
Price not fixed	25

In the remote areas the dissatisfaction is more among the farmers. Reputed seed companies' seeds are not that much available in those areas. In the borders areas like in Nilphamari, Lalmonirhat, Kurigram farmers buy smuggled seeds considering price, availability and required variety (early and late). But this option of seed keeps the farmers in uncertainty about its performance since it comes in illegal way and there is no dealer and assurance thereby. For example, in case of tomato, "Rupali" seed of India had a good reputation in the border areas and farmers were used to use it. But this year its performance is very poor and the farmers are helpless.

Farmers are also unsatisfied about the price of imported hybrid seeds marketed by the companies.

### 4.3.2. Awareness

Now a day farmers have become more aware than before about purchasing quality seeds. But quality seeds are not available everywhere or it is beyond their affordability. While purchasing company's seed almost every farmer's first consideration is its germination rate. Then they consider the brand, packet information and finally the expiry date. In case of loose seeds almost all farmers consider Uniform seed size, seed color and weight as the criteria for recognizing quality seeds.

About 50% among the farmers who buy companies' seed don't know even the name of the company rather they depend on dealers/sellers suggestion for selecting the brand. More or less about 70% farmers take their decision by themselves about the selection of seeds. The rest takes the advices from neighboring farmers or the sellers.

Table 6 shows the different criteria considering which farmers select the seller for seeds. Some farmers consider several factors before choosing the seller.

**Table: 6**

<b>Criteria</b>	<b>Response (%)</b>
Sellers Advice	51
Relation and Known	77
Goodwill	34
Promotion including Advertisement, Demonstration and Credit	29
Availability of Wide Variety	34
Reference of Other Farmer	52

Presently farmers have shifted to the hybrid seeds considering several factors like high yield, disease resistance, availability of seasonal variety, attractive color, strength and compactness of the product, transport friendly to the production, attractive size and storability etc.

#### **4.3.3 Usage and Transactions:**

Currently farmers are using both the hybrid and the local seeds for different vegetables which quantity is described in section 4.2. Table 7 shows the percentage of quality and non-quality in case of both the hybrid and local seeds.

**Table: 7**

Seed	Quality Seed		Non Quality Seed	
	Hybrid (%)	Local (OP) (%)	Hybrid (%)	Local (OP) (%)
Tomato	50	50	50	50
Cauliflower	75	20	25	80
Cabbage	70	20	30	80
Bitter Gourd	60	60	40	40

#### **Mode of sales/ Transaction:**

- Cash
- Cash + Credit

Branded seeds are sold mostly in cash (about 78%) whereas smuggled seeds provide more credit facility. Table 8 shows a more comprehensive picture of cash-credit transaction of different seeds. Credit of 1 week to three months could be typical arrangements agreed upon. Alternatively, this could also extend to longer period. An interesting finding is that about 10% of the price is usually added up when the sale is in credit mode.

**Table: 8**

<b>Seed</b>	<b>Cash (%)</b>	<b>Cash Credit (%)</b>
Branded	78	22
Smuggled	55	45
Local	73	27
Seedling	100	0

**4.4 The Supply-Side: The Seed Suppliers**

Seed suppliers are basically the BADC in Public sector, seed companies and farmers in private sectors. The contract growers used to produce (only OP) more than the contract considering that they would sell it by themselves. The farmers producing seed for their own business sell the major portion to the local seed sellers and the rest sell to the farmers by themselves. In case of bitter gourd, selling from farmers to farmers is about 10%. Seed companies produce seed locally and also import seed from other countries. Table 9 shows the seed dealers' source of seed from where they collect seed for distribution.

**Table: 9**

Source	Quantity (%)
Company	60
Contact Seed Grower	5
General Farmer	7
Smuggled Seed	20
BADC	8

**4.4.1 Seasonality**

Tomato, Cauliflower and Cabbage are normally grown in winter season (December-March). Bitter gourd is grown almost round the year. There is a good demand and market price for off-season (early and late) vegetables. Local seeds (OP) of off-season vegetable variety is limited but imported/locally produced hybrid varieties are available for both season and off-season. As a result, farmers prefer hybrid vegetable seeds. Table 9 shows the time of sowing and harvesting of tomato, cauliflower, cabbage, bitter gourd and pointed gourd and also the purchase time of seeds of those vegetables.

**Table 9:**

Seed	Early		Season		Late	
	Purchase time	Harvesting time	Purchase time	Harvesting time	Purchase time	Harvesting time
Tomato	Aug-Sep	Nov-Dec	Nov-Dec	Feb-Mar	February	April
Cauliflower	Aug-Sep	November	November	January	Dec	Mar
Cabbage	Jul-Aug	Sep-Oct	Oct	Dec	Dec	Mar
Bitter Guard	April	Aug	Sep	Jan		

**4.4.2 Relationships and Transaction**

The farmers are used to go to the sellers for the imported/company seeds. Generally during the purchase the sellers tell the farmers about the seeds' features as far as they know. There are few seasonal traders who used to collect seeds from the seed growers and sell it to the local hat (market). In the border areas there are few brokers who smuggle Indian seed according to the farmers' order. Seed sellers give assurance on germination over the reputed seed companies' seed but it is found from the experience of the farmers that if the assurance does not work, no compensation is provided from the sellers.

**4.4.3 Users, Trends and Marketing**

The farmers who allocate a certain period of time of the year for vegetables production are not the only user of these seeds, there is other users who need the vegetables seed for home stead gardening. Even a few years back the farmers used to use local seeds, but now almost all of them have shifted to hybrid seeds considering off-season variety, high yield, profit etc. Table 10 shows the reaction of the farmers when they don't get their desired seed.

**Table: 10**

Action	Response (%)
Shift Time / Wait	17
Shift Crop	36
Shift Brand	21
Purchase seedling	13
Purchase low Quality Seed	13

It has been found that the farmers are gradually becoming more inclined to the branded seeds and the rate of use of smuggled seed is decreasing. An important feature is that there is a market for seedlings also. About 20%-30% of the total number of marginal and average farmers buys seedlings from other farmers. Table 11 shows the present popular varieties used by the farmers most.

**Table: 11**

Seed	Variety
Tomato	Raton, Rupali, Sathi, Delta,
Cauliflower	Sungrow, Special AK, Snow Queen, Snow gram, Snow Crown
Cabbage	KK Cross, Beauty Ball, K 70, Green 621
Bitter Guard	Taj, Teya

Seed marketing channel is maintained as:

- Seed companies sell their seeds through appointed distributors
- Distributor select sub-dealers for selling seeds
- Farmers purchase seeds from the sub-dealers.

Companies themselves undertake and direct the marketing and promotional activities through leaflets, posters, banners, gifts, workshops with the distributors, demonstration at farmers' level etc. Only the reputed and well-capacitated companies do these activities.

**4.4.4 Capacity**

For producing and marketing of quality seeds, the seed companies need R&D, processing, testing, and storing facilities. Very limited companies have the above facilities. Experienced and knowledgeable staff is also essential for producing and marketing of seeds. Business plan and market promotion strategies are also absent for many seed companies. There is a tendency of the seed companies to import seed rather producing in the country. East-West seed (Bangladesh) Ltd., Syngenta Bangladesh and Namdhari Seed Company are leading in the seed market. East West and Namdhari are producing quality hybrid seeds in Bangladesh. East West Seed Company has all the required facilities for seed production and processing. Syngenta is importing seed from Syngenta India and marketing in Bangladesh. Namdhari is producing seed in Bangladesh and also importing seed from India. The reputed seed company

mostly follows all the rules and regulation as mentioned in the seed policies. It is observed during the field survey that most of the sub-dealers lack the information regarding new variety, seedbed preparation, and land coverage. The companies need to strengthen the capacity of the sub-dealers to increase the sales of seed.

### 4.4.5: Future Improvement

According to the seed policy, the following minimum standard should be ensured for quality vegetable seed in Bangladesh.

Crops	Germination minimum %	Pure seed minimum %	Seed other varieties maximum %	Seed of other Crops maximum %	Weed seed maximum %	Inert material maximum %	Moisture content maximum %
Tomato	60	98	0.5	0.1	0.25	2	8
Cauliflower/ Cabbage	65	98	0.5	0.1	0.25	2	7
Bitter guard	60	99	0.1	0.1	0.25	1	7

**Ref : The seed policy . (Bangladesh government) Gazette 1993.**

To maintain the above standard, the following facilities are required for processing of seed

1. Seed Grader
2. Seed Dryers
3. Grain Cleaner
4. Seed Treater
5. Specific Gravity Separator
6. Seed Germinator
7. Moisture Meter
8. Automatic Weighers and Baggers
9. Pouch Packing and Filling Machine
10. Conveyers, Elevators & Other supporting equipment

Unfortunately, very few companies have the above-required facilities. Therefore, the seed companies needs to develop its facilities to supply quality seeds in the market.

### 4.5 Conclusions on the availability of quality vegetable seed

Almost 70% of the total seed requirement is imported from outside. This could be a reason behind the farmers' claim regarding the high price of hybrid seeds. Only a few companies like East West, Syngenta and Namdhari are providing good quality seeds and their market share in Greater Rangpur is approximately 20%. They have the processing, testing and storing facilities, which are mandatory for producing and marketing quality seeds.

## 5. Constraints and Opportunities

With the Business Service Assessment survey, the IDE and KATALYST team identified eight main constraints that hinder the provision of good quality seed. These have to be presented, discussed and validated by the FGD participants. The validation process will be

consisted of four steps: (a) validation of business service constraint, (b) validation of constraints to the provision of the business service, (c) parameters for the formulation of interventions, and (d) formulation of interventions (e.g., what the participants and the IDE and KATALYST can do to resolve the constraint). The eight constraints are:

1. High price of imported hybrid vegetable seeds leads the farmers use cheaper, low quality seeds, which ultimately lowers the production and thus less profit.
2. Unavailability of Hybrid vegetable seeds in all the rural markets compels the farmers go for non-quality local seeds.
3. The seed growers/ companies do not maintain standard seed production techniques/ methods. (Isolation distance for cross pollination vegetable, application of fertilizer, irrigation and pesticides)
4. Lack of knowledge on seed post harvest technique/ processing facilities by growers/ companies (Equipment, treatment, testing, knowledge)
5. Lack of awareness of the farmers/dealers about the expiry date of vegetables seed leads the farmers buy expired ones which results in less profit.
6. Absence of guarantee in case of smuggled seed in the border areas leads the farmers have no certain production assurance. (Smuggled seeds cost less)
7. Lack of awareness of the farmers about distinguishing the quality between packed and loose seeds (adulterated) leads the farmers buy non-quality seeds.
8. Unavailability of different sized packets (both imported and local) leads the farmers buy loose seed, which carry more risk of adulteration, less germination, diseases resulting less production.

## 6. Providers of Seed to Target by IDE and KATALYST

## 7. Potential Impact (of improved seed) on the rural market

By improving the quality of seed, the vegetable sub-sector is expected to (a) achieve higher quality vegetables, (b) increase yield and income, and (c) expand the market (d) overall growth.

## 8. Illustrative Interventions

After the service assessment still we are on process for arranging a FGD to validate what we have found in the field. But from our field experience and our team meeting we have summed up the following potential interventions where IDE and KATALYST facilitation may be needed:

**Constraint 1: High price of imported hybrid vegetable seeds leads the farmers use cheaper, low quality seeds, which ultimately lowers the production and thus less profit.**

### Box 5: IDE and KATALYST's Interventions Selection Criteria

- ✓ Extent of its impact (income, employment, etc.) on SMEs,
- ✓ Number of SMEs (both directly and indirectly) that will benefit
- ✓ Cost-effectiveness of the intervention
- ✓ Chances of the intervention yielding in sustainable results
- ✓ IDE and KATALYST's capacity (including availability of human and financial resources to implement or manage the intervention
- ✓ Time needed to complete the intervention.

### **Proposed Facilitation Activities:**

- Increase the production of hybrid vegetables seed locally
- Promote purchasing of seedlings marketed by reputed seed companies and nurseries.

**Constraint 2: Unavailability of Hybrid vegetable seeds in all the rural markets compels the farmers go for non-quality local seeds.**

### **Proposed Facilitation Activities:**

- Demand assessment at grass root level
- Establish linkage between Seed Company and dealers/retailers.
- Promote purchasing of seedlings marketed by reputed seed companies and nurseries.

**Constraint 3: The seed growers/ companies do not maintain standard seed production techniques/ methods. (Isolation distance for cross pollination vegetable, application of fertilizer, irrigation and pesticides)**

### **Proposed Facilitation Activities:**

- Training for the seed growers
- Strengthen supervision and monitoring by the companies at growers' level
- Motivate companies to follow the standard production/post harvest technique/method
- Arrange visit program for growers to acquire knowledge (seed production method) from demonstration performed by experienced seed growers

**Constraint 4: Lack of knowledge on seed post harvest technique/ processing facilities by growers/ companies (Equipment, treatment, testing, knowledge)**

### **Proposed Facilitation Activities:**

Knowledge:

- Training for seed companies
- Arrange visit program for seed companies to acquire knowledge (improved seed processing method) from demonstration performed by other well-equipped companies.

Facility:

- Promote linkage between the interested seed companies and different finance or leasing companies to determine what kind of soft loans etc. might be possible to procure the needed machines.
- Identify foreign investment programs that are interested in supporting such investments and link them with interested seed companies.

**Constraint 5: Lack of awareness of the farmers/dealers about the expiry date of vegetables seed leads the farmers buy expired ones, which results in less profit.**

### **Proposed Facilitation Activities:**

- Awareness campaign for the farmers
- Ensure expire date mentioned on the packet
- Advice/motivate seed companies to withdraw their expired seed from the sellers
- Promote purchasing of seedlings marketed by reputed seed companies and nurseries

**Constraint 6: Absence of guarantee in case of smuggled seed in the border areas leads the farmers have no certain production assurance. (Smuggled seeds cost less)**

### **Proposed Facilitation Activities:**

- Awareness campaign for the farmers
- Promote purchasing of seedlings marketed by reputed seed companies and nurseries

**Constraint 7: Lack of awareness of the farmers about distinguishing the quality between packed and loose seeds (adulterated) leads the farmers buy non-quality seeds.**

### **Proposed Facilitation Activities:**

- Awareness campaign (demonstration, using mass media) for the farmers

**Constraint 8: Unavailability of different sized packets (both imported and local) leads the farmers buy loose seed, which carry more risk of adulteration, less germination, diseases resulting less production.**

### **Proposed Facilitation Activities:**

- Motivate the seed companies to supply different size of seed packets according to the farmers' demand.
- Promote purchasing of seedlings marketed by reputed seed companies and nurseries

## **9. Conclusions**

The team has identified six areas of possible interventions that could be verified in the validation workshop. These are: establishing promotion of purchasing of seedlings marketed by reputed seed companies and nurseries, awareness campaign (demonstration, using mass media) for the farmers, motivate companies to follow the standard production/post harvest technique/method, Increase the production of hybrid vegetables seed locally, capacity building of seed sub-dealers by the seed companies and establish linkages with growers, sellers, companies and other allied resource organizations.