

BUSINESS SERVICE ASSESSMENT

**Provision for good quality, desired size and types of fingerlings
available in the market**

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October 2003

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 Pond Fishery conducted between June and September 2003 pinned down the major constraints besetting the sub-sector. For this analysis, over 70 Pond Fishery and related SMEs were visited and interviewed. A total of 19 (See Box 1.) constraints have been identified, described and catalogued. With these constraints, the team sketched out two broad yet possible business services that can address or strengthen the sub-sector.

Box 1: Number of Constraints

<i>Type of Constraints</i>	<i>Number</i>
Input Supply	2
Product Dev. & Process Tech	11
Policy	0
Market Access	2
Operation Environment	2
Organization/Management	1
Finance	1

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 two initial services to focus on. The selected services were: (a) Provision for good quality brood fish available in the market (b) Provision for good quality, desired size and types of fingerlings available in the market.

After attending the first service assessment, the team undertook the second one i.e. "Provision for good quality, desired size and types of fingerlings available in the market" as service assessment exercise.

The team began by developing tools for assessing the demand (farmer) and supply (nursery, fingerling trader) of better quality and desired size and type of fingerlings. To gain deeper understanding of the constraints facing suppliers and user of fingerlings, the team preferred qualitative over quantitative data capture questions. A sampling frame consisting of thirty-nine service providers and seventeen service users was planned. The actual business service assessment was carried out from 8 to 11 September 2003.

The team consolidated its findings from 31 August to 2nd September 2003. Then it formulated six 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 a) validate the constraints related to the supply and demand of quality fingerlings, b) propose initiatives to address these constraints and develop the markets for better quality fingerlings.

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

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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, desired size and types of fingerlings available in the market)

The development and growth of pond fishery greatly depends on the provision and supply of quality fingerling as well its size and type as desired by the farmers. The effect of good or bad quality fingerlings lasts in the entire fishery sub-sector value chain. Poor quality fingerlings (undersized, weak, disease affected) results in poor quality fish, which ultimately implies to high mortality rate, less growth at farmers' level. Again unavailability of desired sizes and types forces the farmers to buy fingerlings which results in extra cost bearing for bringing up and under utilization of the pond.

This service assessment report deals with quality fingerlings, its size and type desired by the farmers.

The provision of quality fingerlings, desired size and type requires: (a) appropriate management of fingerlings by the nursery owners (b) awareness at the nursery levels about the requirements at farmers' level (c) a specific place for supplying all types and sizes of fingerlings.

Box 4: The Objectives of the Focus Group Discussion

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

3. Related Sub-sector Constraints

Unavailability of good quality fingerlings, desired size and type forces the farmers to go for using poor quality fingerlings, which leads to poor quality fish resulting in less growth and high mortality rate at farmers' level. Few qualities such as disease free, strength, resistance to environment changes and transportation shock etc are absent in many cases. Again farmers are more inclined to buy bigger size fingerlings considering their cost for growing them up. But the option is not that much available compared to the demand. Type of fingerlings is another consideration of the farmers; since a pond can afford several types at its several layers the farmers demand different type of fingerlings. But in many cases they don't get it from a single source at a certain time. A solution of all these problems is to go to the Jessore, which is not feasible for many farmers. The result is, the farmers use what they get easily irrespective to the pond size, its capacity at different layers.

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

4.1. The Fingerlings Supplier

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There are two types of fingerlings suppliers operating in the market. One is the nursery owner supplying fingerling direct to the farmers, another one is the fingerling hawker who collect fingerlings from the nursery and supply it to the farmers. The farmers who are far away from a nursery or who don't want to bear the hassle of carrying fingerlings buy from the hawkers. Most of the farmers buy from the later source.

4.2. Market Size and Penetration

In Greater Faridpur fish cultivation has become a very popular and well-accepted business among the people. Day by day number of pond for fish cultivation as well as number of nursery is increasing. Table 1 shows the number of nursery according to their location and the number of fingerlings traders associated with those nurseries that are the major source for the fish farmers for fingerlings.

Table: 1 (Supply size)

District	No. of Nursery	No. of Fingerlings Trader
Faridpur	250	800
Rajbari	200	400
Shariatpur	60	200
Madaripur	65	120
Gopalganj	100	300
Total	675	1820

Table 2 shows the number of farmers and their annual demand in different districts of greater Faridpur.

Table: 2 (Demand Size)

District	# Of Fish Farmer	Total Demand	Local supply	Outside supply	Source
Faridpur	35000-40000	1560	936	624	Jessore-35%, Local-65%
Rajbari	20000-25000	1040	624	416	Jessore-40%, Faridpur-20%, Local-40%
Shariatpur	8000-9000	480	288	192	Barisal-40%, Jessore-15%, Local-

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					45%
Madaripur	8000-9000	440	264	176	Barisal-30%, Jessore-15%, Faridpur-10%, Local-45%
Gopalganj	15000-20000	720	432	288	Barisal-10%, Jessore-30%, Local-60%
Total	86000-103000	4240	2544	1696	

From the above table it is clear that the local nurseries cannot meet the entire demand of greater Faridpur; a portion of about 25%-35% comes from Jessore.

4.3 The Demand-Side: The Fingerlings Users

The fish farmers who produce table fish are the user of fingerlings. Although a huge demand has been found for good quality fingerlings and also for desired type and size, farmers are still unsatisfied with the supply. They purchase fingerlings from direct nursery or from the hawkers.

4.3.1. Satisfaction

About 60% to 70% of the farmers who use fingerlings are not satisfied with the fingerlings they are having regarding quality, size and type. Several reasons have been identified behind this dissatisfaction, which are:

- Required variety and size are not available; farmers want to buy fingerlings of about 3"-4" size for minimizing their farming cost which is not available in the market.
- Supply is not available in time
- No Guarantee
- High Mortality Rate
- Limited choosing options
- Disease Prone
- Low growth due to use of inbred Brood Fish at hatchery level
- Improper Transportation mean of Fingerlings

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4.3.2. Awareness

It has been found that about 90% farmers are aware about quality fingerlings. Farmers who live in close proximity to a nursery buy from that but everyone doesn't have direct access to nursery (for distance, unwillingness to carry by himself) for which they depend on hawkers. Since 3"-4" size's availability is very limited, farmers buy 1"-2" fingerlings from them and it is very difficult to recognize the tiny ones for the farmers whether they are getting the right type or not. There are so many hawkers who are trading in greater Faridpur coming from outside (e.g. Kushtia, Jessore, Barisal etc.) and don't have any specific customer to maintain a good relationship.

4.3.3 Usage and Transactions:

Farmers are using different type of fingerlings among which Ruhi and Silver Curp have been identified as taking the major share. Table 3 shows use of different types of fingerlings by the farmers and also their comment about the quality.

Fingerling	Quantity (%)	Quality (%)	Non-quality (%)
Ruhi	30	40	60
Katla	15	45	55
Mrigel	10	50	50
Silver Curp	30	40	60
Common Curp	15	45	55

Mode of sales/ Transaction:

- Cash
- Cash + Credit

About 75% fingerlings are sold in cash. The rest 25% is in cash-credit mode. Farmers who go to the nursery direct purchase in cash in most cases. In case of buying from the hawkers they enjoy some credit facility. Hawkens who move from door to door in different areas mostly sell in cash mode but those who live in locality give the credit facility to the farmers. Farmers often place order to the local hawkers according to their demand and then the hawkers collect the ordered types and size and deliver. Even such credit arrangement is found that the farmers pay the money after selling the fish depending on the relationship.

4.4 The Supply-Side: The Fingerlings Suppliers

As mentioned earlier there are basically two types of fingerlings suppliers, one is the nursery owner and the other is the hawker collecting from nursery. About 70% fingerlings are supplied through hawkers whereas the rest is through the nursery direct. Hawkens collect fingerlings not only from the local nurseries rather from Jessore even.

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4.4.1 Satisfaction

The nursery owners are more or less dependent on the hatcheries for spawns. About 90% spawns are collected from hatcheries and the rest are river spawns. If we segregate the 90% spawns of hatcheries, 2% come from Govt. hatcheries, 73% from local hatcheries and 15% from outside (Jessore, Barisal) mainly from Jessore. River spawns are good in quality, their growth rate, survival rate are higher compare to the hatchery spawns. Since the hatchery spawns are, in many cases, inbred ones their growth rate is less, mortality rate is higher. Again for a single species, a batch of spawns don't grow in a same rate, some become big, some remains small because of spawns supplied from different quality brood fish. So the nursery owners cannot supply desired sized fingerlings to the farmers always. Besides, they have to put order earlier to the hatcheries for their required types of spawns. In many cases hatchery owners cannot supply according to the demand because of their poor hatchery management (spawns from eggs die before delivery) and the nursery owners cannot supply different types of fingerlings in those cases.

4.4.2 Seasonality

The major portion of the sale (about 85% to 90%) occurs from May to September and the remaining is sold during the rest of the year mainly in March-April before the main season (May-September) arrives. These fingerlings are basically the residual of the last year. The nursery owners start their pond preparation in March.

4.4.3 Relationships and Transaction

Farmers, who buy from the nursery direct, visit the nurseries and purchase mostly in cash according to their requirement if available. In most cases they carry their purchased fingerlings by themselves because individual's demand is usually less and they don't want to pay more for the carrying and transportation service by the nurseries. In some cases the nursery provides its own people and transportation if the quantity is high which generally happens when the purchase is for lakes, marsh/fen etc. But the deal is open i.e. whether to incorporate the charge of transportation and carrying or not in the price. Farmers who have hawkers in locality usually place order to them according to their requirements and thus collect fingerlings; payment is after the delivery. Another type of fingerlings collection takes place among the farmers where hawkers move from farmer to farmer and the farmers buy from them if their requirements are fulfilled.

4.4.4 Users, Trends and Marketing

All the nursery owners have some fixed hawkers besides the floating ones who take fingerlings from them and sell to the farmers. The trend is like that the hawkers pay the money of today's fingerlings on the next day when they again go to the nursery. The fixed hawkers thus do some marketing and promotional job for the nurseries. Again the hawkers have to move at several nurseries scattered for buying fingerlings of different types because every types and size are not available in a single place. As a result the fingerlings in the container get weakened before they are delivered at the farmers' pond.

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There are two ways of fingerlings selling, one is according to kg and another is according to 100. From both demand and supply sides it has been found and verified that farmers get cheated when sale is occurred according to 100 because they don't get the right number. That is why presently the farmers are more inclined to buy according to kg. Though the demand of 3"-4" size fingerlings is high, nurseries don't take interest to produce that size considering his profit (earlier sale, more profit), less risk for bringing up for more days, limited number of ponds.

4.4.5 Capacity

About 60% fingerlings of the total demand of greater Faridpur are fulfilled by the supply of the nurseries situated locally. The rest (about 40%) are coming mainly from Jessore (besides Kushtia, Barisal) through the hawkers and the nurseries of greater Faridpur. Of the 40% fingerlings, 30% comes through the hawkers and the rest 10% through the nurseries. The demand for fingerlings is increasing which is clear from the sales of the nurseries. For example one big nursery in Faridpur proper sold 16 tons of fingerlings in 2001, 20 tons in 2002 and 28 tons in 2003. Even it is found that about 5% of the total production of the nurseries is sold in outside mainly in Dhaka. The hawkers that carry fingerlings from farmer to farmer's door use small container because they either carry on shoulder or on back carrier of the cycle. That is why they put fingerlings in that small container as much as possible. As a result a portion die which is adjusted to the selling price or get weakened and die at the farmers' level.

4.5 Conclusions on the Fingerlings Market

The overall picture of the service market shows that there is a great demand for fingerlings and the demand is increasing day by day. But the farmers are complaining against the quality, the size and the type they are presently having. They rely or trust on whatever they are given because at the very early stage it is very difficult to justify whether the fingerlings are strong or not or they don't get the opportunity to justify. Actually competitiveness is not established among the nurseries since they are scattered and each has a number of permanent hawkers to sell their fingerlings. A fingerlings market could be a good solution for overcoming this constraint. In that case the nurseries would have outlets there and the farmers could choose where to buy from according to his requirement.

5. Constraints and Opportunities

With the Business Service Assessment survey, the IDE and KATALYST team identified six main constraints that hinder the provision of good quality fingerlings. 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 six constraints are:

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1. Absence of any specific place for all types and sized fingerlings available, farmers are not getting right size/type of fingerlings from a single source; at the same time Nursery owners also cannot reach the farmers
2. High investment and low profit prevents nursery owners from producing bigger sized fingerlings, which results in unavailability of them in the market.
3. Lack of knowledge of the Nursery owners about fingerlings cultivation method results in poor growth, high mortality rate of fingerlings.
4. Lack of quality spawns (collected from low quality brood fish) hampers the growth of fingerlings and high mortality rate at the farmers' level.
5. Limited options of fingerlings (surplus small sized fingerlings in a small container for minimizing transportation cost) provided by the hawkers to the farmers restrict them from acquiring their desired type and sized fingerling. Most of the farmers purchase fingerlings from the traders-hawkers (70% supplied by them).
6. High price of Fish feeds leads the farmers use non-quality (cheaper price) and less quantity of feed to minimize cost which results in poor quality (less growth and high mortality rate at farmers' level).

6. Providers of Fingerlings to Target by IDE and KATALYST

7. Potential Impact (of desired Fingerlings) on the rural market

By improving the quality of fingerlings, the pond fisheries sub-sector is expected to: (a) achieve higher quality fingerlings, (b) reduce mortality rate of fingerlings, (c) increase growth, and (d) increase production and income. The quality fingerlings can reduce their production costs and wastes thereby increasing the sub-sector's competitiveness.

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:

Service: *Provision for good quality, desired size and types of fingerlings available in the market.*

Constraint 1: **Absence of any specific place for all types and sized fingerlings available,**

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.

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farmers are not getting right size/type of fingerlings from a single source; at the same time Nursery owners also cannot reach the farmers.

Proposed Facilitation Activities:

- Advocacy and lobbying with the Government's concerned authority to establish a market.
- Arrange workshop or coordination meeting between Government body and farmers' association to establish the market
- Selection of market place through the association to establish the market
- Establish a permanent market place through the association

Constraint 2: High investment and low profit prevents nursery owners from producing bigger sized fingerlings, which results in unavailability of them in the market.

Proposed Facilitation Activities:

- Demand assessment of bigger/desired size and type of fingerlings at the farmers' level realized by nursery owners.
- Motivational meeting/workshop with the nursery owners to produce bigger size and different types fingerlings

Constraint 3: Lack of knowledge of the Nursery owners about fingerlings cultivation method results in poor growth, high mortality rate of fingerlings.

Proposed Facilitation Activities:

- Improve the access to information sources like DOF, NGOs and other lead nurseries for proper fingerlings cultivation method.
- Arrange training for the nursery owners.

Constraint 4: Lack of quality spawns (collected from low quality brood fish) hampers the growth of fingerlings and high mortality rate at the farmers' level.

Proposed Facilitation Activities:

- Establish linkages between quality spawn suppliers (hatchery/river spawn collector) and the nursery owners.
- Motivate hatchery owners to use good quality brood fish for breeding for better spawn and fingerlings later on.

Constraint 5: Limited options of fingerlings (surplus small sized fingerlings in a small container for minimizing transportation cost) provided by the hawkers to the farmers restrict them from acquiring their desired type and sized fingerling. Most of the farmers purchase fingerlings from the traders-hawkers (70% supplied by them).

Proposed Facilitation Activities:

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- Develop improved fingerlings carrier so that they can supply different sized fingerlings.
- Establish market place for the fingerlings.

Constraint 6: High price of Fish feeds leads the farmers use non-quality (cheaper price) and less quantity of feed to minimize cost which results in poor quality (less growth and high mortality rate at farmers' level).

Proposed Facilitation Activities:

- Identify and promote alternative feeds for the fingerlings.

9. Conclusions

The team identified six possible areas for intervention that could be verified in the validation workshop:

- Establish a permanent market place through the association;
- Identify and promote alternative feeds for the fingerlings;
- Develop improved fingerling carrier so hawkers can supply different sized fingerlings;
- Create linkages between quality spawn suppliers (hatchery/ river spawn collector) and the nursery owners;
- Determine demand for larger/ desired size and type of fingerlings at the farmer level that can be realized by nursery owners; and
- Improve access to information sources like DOF, NGOs, and other lead nurseries for proper fingerling cultivation methods.

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Respondent List for Business Service Assessment

No.	Name	Type
1	Sattar Bapari	Supply side
2	Mofizur Rahman	
3	Jahidur Rahman	
4	Bilash Kumar Halder	
5	Ansar Ali	
6	Younus mian	
7	Akter Hossain	
8	Islam Sheik	
9	Moni Matobbar	
10	Shahidul Islam	
11	Jehad Ali Kazi	
12	Motahar Hossain	
13	Abul Kalam Azad	
14	Hashibur Amin Lipon	
15	Saiful Islam	
16	Gazi Abdul Haque	
17	Al-Mamun	
18	Md. Shajahan	
19	Monser Sheik	
20	Babu Janak Biswas	
21	Profullo Halder	
22	Ssjedur Rahman Titas	
23	Abdul Halim Molla	
24	Birendra nath Biswas	
25	Abdul Awul mian	
26	Mizanur Rahman Mian	
27	Bishnu podo Halder	
28	Shahabuddin Biswas	
29	Md. Rafique Biswas	
30	Mizanur Rahman Minto	
31	Matiar Sheik	
32	Kartik Chandro	
33	Monowar Hossain	
34	Tozammel Haque	
35	Nazmul Hossain Khan	
36	Dipok Kumar Biswas	
37	Roton Kumar Halder	
38	Abul Kashem Molla	
39	Shahidul Islam	