

DFID Bangladesh
“Making Markets Work for the Poor”



Subsector Analysis and Market Assessment
FINE AND AROMATIC RICE SUBSECTOR
Chirrirbandar, Dinajpur

International Development Enterprises

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List of Abbreviations and Acronyms

BAU	:	Bangladesh Agricultural University
BBS	:	Bangladesh Bureau of Statistic
BDS	:	Business Development Services
BINA	:	Bangladesh Institute of Nuclear Agriculture
BRAC	:	Bangladesh Rural Advancement Committee
BRI	:	Bangladesh Rice Research Institute
DAE	:	Department of Agricultural Extension
DFID	:	Department for International Development
DC	:	District Commissioner
FAG	:	Fine Aromatic Glutinous
HYV	:	High Yield Variety
NCDP	:	Northwest Crop Diversification Project
NGO	:	Non-Government Organization
MV	:	Modern Variety
RDRS	:	Rangpur Dinajpur Rural Services
PETARRA	:	Poverty Elimination Through Rice Research Assistance
RWS	:	Rice Whole Seller
SME	:	Small & Micro Enterprises
SS	:	Subsector
SS-MA	:	Subsector Market Assessment

1.0 INTRODUCTION

This study took place during the months of July and August 2002. The objective of the study was to carry out a market assessment of business development services (BDS) in the fine and aromatic rice subsector of the Northwest of Bangladesh.

This subsector market assessment focused on the fine, aromatic, and glutinous rice (FAG) from among the range of rice being grown in the Northwest of Bangladesh. The overall analysis of the subsector draws on the secondary data that was available, interviews with key informants (which include representatives from Government, NGOs, Research Organisations/Institutes and the Private Sector). Fieldwork was undertaken in accordance with the subsector survey methodology and a subsector representative workshop. This analysis identified constraints faced by the actors in the subsector, forces that are driving the changes in the subsector, demand for the provisions of BDS, and the role that can be best played by DFID's MMWP programme in strengthening the pro-poor growth of the subsector.

The objective of the study was to carry out a market assessment of business development services (BDS) in the fine and aromatic rice subsector. All efforts are aimed at having a positive impact on the target beneficiaries – the poor farmers.

This report begins with a brief description of the methodology used to complete the study. This is followed by a more in-depth presentation of how each step of the methodology was carried out.

2.0 METHODOLOGY

In analyzing the subsectors and their markets for BDS as well as in designing the related interventions, the methodology used is one that unites the strengths of the subsector approach (which identifies constraints that are faced by various actors in the value chain) and the BDS market development. This combination provides a dependable approach to developing markets through supporting the BDS providers who would provide demanded services to large numbers of MSEs.

The following summarizes the methodology used in undertaking the subsector/market assessments. The methodology has six distinct steps:

1. Selection of subsector
2. Initial information gathering on the subsector and prepare an initial subsector map
3. Identification of constraints and opportunities faced by the actors in the subsector
4. Identification of business development services (BDS) that addresses the constraints and opportunities
5. Market assessment of identified business development services (BDS)
6. Designing of interventions to develop business services in the Subsector

2.1 Subsector Selection

This step involves the establishment of criteria to be used in assessing various subsectors to determine the most appropriate for support. Once criteria are established, they are used for comparing and ranking the subsectors. A ranking tool is developed to assist in the selection process. Those subsectors that rank the highest are chosen for more detailed analysis. Since the fine and aromatic rice subsector had already been determined beforehand and the selection was based on PETRRA's confidence that the subsectors showed good promise for growth, the selection process was skipped for this study.

2.2 Initial Subsector Information Gathering and the Subsector map

One of the critical steps in carrying out a subsector analysis is to collect and review relevant documents on the subsector. In addition to that talking with the “key informants” who are knowledgeable about the subsector is important to understand the dynamics of the subsector. Based on these initial information a “map” of the subsector is developed to graphically present all the actors in the value chain and their relationships with one another. The subsector map illustrates “channels” of activity with various scenarios of effort as they proceeds from input supply, to production, processing and distribution to the final consumer.

2.3 Identification of Constraints and Opportunities

Using a standard survey tool, interviews with subsector actors were undertaken to facilitate the identification of constraints and opportunities faced by the actors of the subsector in seven critical operational areas:

- 1) market access,
- 2) input supply,
- 3) technology/product development,
- 4) management and organization,
- 5) policy,
- 6) finance, and
- 7) infrastructure/operating environment

2.4 Identification of Business Development Services and Providers that Addresses the Constraints and the Opportunities

After constraints were identified, the respondent are further probed to identify the private sector services that can address those constraints. During this probing, any existing BDS providers that are providing the service are also identified.

2.5 Market Assessment of Identified Business Development Services

The next step in the methodology is to assess the market for the identified services. This is done by identifying:

- 1) size of the market (how many are accessing the service, or could access the service),
- 2) frequency of use of the service,
- 3) constraints in the market for the service (both from the demand and supply side),
- 4) satisfaction with the service,
- 5) awareness of the service, and
- 6) costs of the service.

The market assessment enables to understand the financial viability of the service providers and long term sustainability of the service and the service provider. The assessment also helps to identify which existing providers (if any) would be appropriate to target for capacity building interventions.

2.6 Identification of Interventions to Develop Business Services in the Subsector

Interventions are designed after analyzing all the information gathered from various sources (documents, key informants interviews, surveys, subsector workshop) together with a refined subsector map, and established criteria. The interventions address the constraints in the subsector in a way that would improve the provision of demanded BDS and thus strengthen the market.

The SS/MA stimulates a variety of interventions necessary for the development of related markets for each targeted subsector. From a list of interventions for an individual subsector,

prioritizing them as per the need as well as resource is critical for implementation. Interventions should be selected/prioritized with consideration for their importance to the subsector as relates to the development of its market. In some cases, it will be possible to coordinate efforts with other organizations (donors, facilitators) to work together in providing wider range of needed interventions. Most interventions would be in the form of capacity building to BDS providers. Though, at times it may be necessary to undertake other activities that are important to the market development of the subsector. In all cases, interventions will be designed and implemented using the guiding principles of the market development paradigm.

3.0: SOCIO-ECONOMIC OVERVIEW

3.1 North West of Bangladesh

The Rajshahi division as a whole is generally considered as North West of Bangladesh, which includes Bogra, Dinajpur, Pabna, Rajshahi and Rangpur. The study concentrated in the part of northwest region of the country comprising mainly greater Dinajpur districts traditionally found itself as the hinterland of the country. The remoteness of the region from the political and economic centers was due to poor infrastructural facilities, weak industrial development, prevalence of remnants of feudalism in agriculture, and landholding systems. This contributed to the positioning of the region as one of the poorest in the country. However, significant changes have taken place since independence in 1971 in the economic and social landscape of the region. Tremendous infrastructural development has contributed to increasingly mainstreaming itself with the countries socio-economic pace of development. The construction of Jamuna Bridge has been a significant milestone in infusing new dynamism and vitality in the region's development. The region is also characterized by a strong presence of many NGOs particularly Rangpur Dinajpur Rural Services (RDRS) has been instrumental in initiating diverse, multi-prong developmental activities in the region

The region has a high population density, about 870 persons per square kilometer (1996) and very slow rate of urbanization, about 10% (after correction for classification of urban areas). With a population growth rate about 2.1% per year, the density of population will continue to increase to above 1,000 persons per square kilometer. The future of the region is dominated by this high and growing population density. Accompanying this dense population is a heavy burden of dependent young persons. Some 50% of the population is below 15 or above 55. Thus each member of the labor force supports about 3.3 persons (including ones self). With cultivated land more or less constant, the pressure on rural areas is acute and growing. A more rapid pace of economic development is needed.

The literacy rate in the North-West is 27%, which is below the national average. The low level of educational achievement is a serious impediment to economic growth of North-West. Poverty is pervasive with different measures indicating around 50-60% of the population are resource poor. There are 57% of rural households considered landless. Physical risk from natural disaster is generally lower in the North West than elsewhere in Bangladesh.

The key characteristics of the North-West economy are the low wages, high interest rates, extreme level of poverty which shapes the economic behavior of the region.¹

¹ Source: Bangladesh Northwest Region Development and Investment Study: Final Report, October 1997

3.2 Dinajpur

The area now constituting Dinajpur became a subdivision in 1860. It was upgraded to Zilla (district) in 1984. The Zilla is bounded on the north by the Panchagor and Thakurgaon, on the south by Gaibandha and Joypurhat and India, and the west by Thakurgaon and India. The total area of the Zilla is about 3437.98 sq. km of which 19.45 sq. km is riverine and 78.87 sq. km is under forest. The zilla lies between 25⁰10' and 26⁰04' north latitudes and between 88⁰23' and 89⁰18' east latitudes. The total population of the Zilla is about 2,260,131 with an annual growth of population of 2.28. Total number of household is 430,357, of which 71.40% is farm household and 28.60% non-farm household. 36.74% of the farm households are marginal farmers having 0.05-2.49 acres of land, 27.72% medium farmers having 2.50-7.5 acres of land and 6.93% are large farmers having 7.5-above acres of land. Population growth, limited migration and Islamic inheritance laws results in steady fragmentation of land holdings. This socioeconomic condition is a salient characteristic of this region.²

Agriculture plays a critical role in the North-West economy. 85% of total population of this area is very dependent on agriculture. The most important activity in agriculture is grain production. Rice is cultivated in 82% of total land of Dinajpur. Of all variety *aman* is cultivated by most of the farmer. The agro-ecological conditions are dictates the farmers for this variety. According to the district gazetteer of Dinajpur, Katari-Bhog, Dadkhani, Dighol Shoru and Darika Shail of *aman* is cultivated for long years; all of these varieties are fine and aromatic rice. However, our study reveals that specifically in Chiribondor fine and aromatic rice - *Katari-Bhog*, *Badsha-bhog*, *Randhunipagol* and new hybrid Philippine *Katari* is grown largely.

3.3 Subsector Target Area (Chirirbandar)

As rice production, especially fine and aromatic rice production is the core of the economic activity of Dinajpur as well as Chirirbandar; we identified the region as the focus of our study. However, because of the presence of Apex, a partner of PETRRA, in Chirirbandar, the study area was selected there.

Chirirbandar is the third largest Upazilla of Dinajpur district. Historically this place was famous for rice trading. As a part of Dinajpur rice cultivation area, this Upazilla is also famous for its fine and aromatic rice called Kalajira and Katari-Bhog. The Upazilla occupies an area of 308.68sq.km including 3.60 sq. km river areas. It is located between 25⁰31' and 25⁰48' north latitude and between 88⁰42' and 88⁰53' east longitudes. The Upazilla is bounded on the north by Khanshama Upazilla, Saidpur Upazilla and Nilphamari Zilla, on the east by Parbatipur Upazilla on the south by India and Phulbaria Upazilla on the west by Dinajpur Sadar Upazilla.

Chirirbandar consists of 12 unions, 145 mauzas and 141 villages. The total population of the Upazilla is slightly more than 212 thousand (see table: 1) and the number of household is approximately 42,790. Population density is 753 per sq.km; sex ratio m/f is 106. Agriculture is a dominant occupation (about 32.76%) of the population.³

Union	Area	Population
Tetulia	1,442	11,980
Nasharatpur	1,152	18,049

² Bangladesh Northwest Region Development and Investment Study: Final Report Vol-3, December 1997

³ Bangladesh Population Census: Dinajpur 1994, BSS

Satuali	1,582	14,223
Alokdihi	1,078	9,882
Fatejongpur	2,576	22,648
Saitara	3,087	21,803
Isobpur	2,669	24,040
Auliapukur	3,408	19,780
Abdulpur	3,051	30,024
Amanpur	3,136	19,780
Viail	3,917	18,348
Punatt	3,770	21,876
Total 12 Unions	30,868	212,672

Table 1: Physical Area and Population density of the study area

Road and train communication between Dinajpur Sadar and Chirrirbandar upazilla is far better than any other districts of Bangladesh. The road communication within Chirrirbandar linking the unions is also satisfactory. The general climate and weather of Chirrirbandar is as follows:

Monsoon	Average rainfall
Rabi (November through February)	31mm
Pre Kharif (March through May)	281mm
Kharif (June through October)	1,617mm

Table 2: Major Cultivation Seasons and Average Rainfall in the study area

The land topography of Chirrirbandar can be classified into three broad categories: a) Tista Palalbhumi (Alluvial), b) Mixed Tista Alluvial and Barind Tract, and c) Bavendra. These three regions cover about 70%, 4% and 26% of total land respectively.

4.0 Fine and Aromatic Rice Subsector Analysis and Findings

Fine and aromatic rice, from cultivation to processing and marketing is very much different from coarse rice. A number of factors influence the subsector. It may be helpful to have a brief background of the fine and aromatic rice and the related aspects before the analysis of the subsector

4.1 Brief Background of fine and aromatic rice in Bangladesh

Fine and aromatic rice, is a part of the rice family (*Oryza sativa* L.). Rice is an ancient and venerable grain that has been cultivated since at least 5000 B.C., and archaeological explorations in China have uncovered sealed pots of rice that are almost 8,000 years old⁴. Rice has a number of varieties. In Bangladesh, more than 7,000 varieties of rice were

“For more than half of humanity RICE IS LIFE. It

is the grain that has shaped the cultures, diets, and economies of billions of people in Asia. For them, life without rice is simply

unthinkable.” **MMWP-SS-MA “Fine and Aromatic Rice Subsector”**

grown in various parts of the country. In general, rice is generally classified by its length, thickness, aroma, and whiteness. The length of long-grain rice is four to five times that of its width. One of the more exotic varieties in the long-grain category is the aromatic East Indian Basmati. However, Kalajira rice, although not in the longer category, has the most exotic aroma. It was mentioned by various historians that Bengal was famous for spices, kalajira rice and muslin fabrics.

Broad Physiography of Fine and Aromatic Rice

Geologically, Bangladesh is a part of the Bengal basin, one of the largest geosynclinals in the world. The Bengal basin is particularly ideal for rice cultivation. The formation and growth of the Bengal Basin is directly related to the origin and morphology of the Indo-Gangetic trough, which itself is overlaid and filled by sediments thousands of meters thick⁵. The broad geological features of the Bengal Basin and its prominent tectonic elements are Indian platform, Bengal foredeep, Arakan Yoma folded system, and the Sub-Himalayan Foredeep. Other features are Rangpur Saddle, Dinajpur slope, Bogra slope, Hinge Zone, Barisal High, and Troughs of Sylhet, Faridpur and Hatiya, etc. The floor of the Bengal Basin consists of quaternary sediments deposited by the *Ganges*, the *Brahmaputra*, and the *Meghna* rivers, known together as the GBM river system, and their numerous tributaries and distributaries. The sediments are washed down from highlands on three sides of the Basin, particularly from the Himalayas, where the slopes are steeper and the rocks less consolidated. Over 92 per cent of the annual runoff generated in the GBM catchments area flows through Bangladesh, although it comprises only about 7 per cent of the total catchments⁶. The whole country consists of mainly low and flat land, except for the hilly regions in the northeast and southeast, which provides ideal moisture, water and siltation for cultivation of rice.

Rice cultivation in general, and fine and aromatic rice in particular requires special physiographic conditions – land elevation, rainfall, sunshine, temperature, etc. Bangladesh falls in the AEZ 3, characterized as subtropical monsoon climate suitable for rice cultivation. This physiographic and climatic condition is typically found in the Northwest regions of Bangladesh.

It is often said that, the functional capabilities of the soil in Bangladesh have deteriorated significantly due to imbalanced use of agrochemicals, unplanned land use, encroachment on forest areas for agriculture and settlements, ineffective implementation of existing laws and guidelines, and improper disposal of hazardous effluents. In addition, urban sprawling and infrastructure development have reduced the availability of land. Natural events such as cyclones and floods cause land loss, and also decrease the functional capabilities of soil. The extent of land degradation varies according to region, season, and year due to the diverse nature of the driving forces and causes.

The concentration of organic materials present indicates the quality of soil and this has deteriorated significantly in the *Barind* Tract, Madhupur Tract, Himalayan Foothill areas, the floodplains of Tista, Karatoya, and Bangali, and in the hilly Northeast region. Moderate deterioration of organic materials has been observed in the medium highlands of the rivers Tista, the Jamuna, and in the Ganges floodplain. The Soil Resources Development Institute (SRDI) has analyzed soil samples, and found that nitrogen deficiency is common all over the country.

⁵ Rahman, A.A., Saleemul Huq, Raana Haider, Eirik G. Jansen, 1994, Environment and Development in Bangladesh, The University Press Limited, Dhaka, Bangladesh.

⁶ Coleman, J.M. (1969) Brahmaputra River: Channel Processes and Sedimentation. Sedimentary Geology, B129-239

Fine and Aromatic Rice Production in Bangladesh

Nearly 70% of the land area of the country has been brought under rice cultivation. Out of this 70%, fine and aromatic rice is cultivated in roughly 10% land. This lower coverage is primarily due to the emphasis of government policy and research on food grain production but with low input technology. The government is more concerned about the basic staple rice of the country as a result very little supports very found to be on fine and aromatic rice. Consequently, the fine and aromatic rice cultivation accounts only a marginal fraction of the total rice production in the country. Fine and aromatic rice production reached 28 million tons in 1993 but has declined marginally over the last three years due to consecutive droughts and floods.

Fine and Aromatic Rice Production Environment

The major fine and aromatic rice ecosystems are slightly elevated land. The total fine and aromatic rice area in the last few years expanded very little, however, a major shift in the cultivation process has been reported. The modern (MV) and High Yielding Varieties (HYVs) consist of about 60% of the total fine and aromatic rice. Although the re-allocation of land from traditional varieties to MV/HYVs is the main source of growth in fine and aromatic rice production and yields, however, this has affected the quality particularly the fineness and aroma adversely. The average yield of fine and aromatic rice in general is about 2.6 tons/ha and has increased at a rate of 2.6%/year from 1980 to 1992.

Production Constraints

It is generally said that as intensified cropping systems are practiced, sustainability of soil and fertilizer management becomes a problem wherever and crop residues are removed for fuel and feed. Cow dung, a traditional source of fertilizer, is being diverted to meet an acute shortage of fuel in rural areas. As a result, the use of chemical fertilizer has increased rapidly.

Normal flooding is simply a part of the ecosystem and helps to maintain soil quality. Moderate flooding occurs almost every year, but serious damages are done in severe floods which normally occurs about once in every 5 to 10 years.

Infrastructure is sufficiently adequate for general rice but to a large extent inadequate for fine and aromatic rice. Lack of organized market shed, storage facilities, transportation etc., makes the fine and aromatic rice market volatile.

Bangladesh is faced with the choice of whether to be fully self-sufficient in food grains or to raise income of the farmers through marketing high value crops both at home and abroad, especially fine and aromatic rice.

Production opportunities

After gaining a turbulent but gradual rise in the fine and aromatic rice production in 2000, the subsector slipped back into slumber in 2002, due to stagnation in market. The lack of interest from the government on adequate research on productivity enhancement both at farm and processing level as well as in market development has dampen the subsector. Research and development on fine and aromatic rice over the past year have been inadequate, and the linkages between research and extension especially for fine and aromatic rice are poor.

Though Bangladesh takes pride in being home to exclusive fine aromatic rice kalajira, it has done little to retain this much-valued product. The traditional kalajira varieties with excellent aroma are almost at the verge of extinct from the fields. This has have been increasingly being replaced by high-yielding varieties like Sorna, Philippine Katari, and Radhuni-pagol. But these varieties stand in no match to the excellent aroma, fineness, elongation levels and other fine traits of the traditional local varieties.

Many of the traditional varieties of fine and aromatic rice are lost forever - a great biodiversity loss. They are not even saved in our national gene bank. Only a few late varieties of the traditional kataries are available, such as Shumudro-fena,

Unfortunately, the government and the policy-makers over the past years had not provided appropriate attention for the development of fine and aromatic rice.

It has been stated in various literatures that good quality katari rice has traditionally come from North-West part of Bangladesh. The superior quality is well known to the connoisseur of fine and aromatic rice. The techniques of producing good quality fine and aromatic rice remain unclear. Some believe that it is due to a unique combination of the particular plant varieties cultivated, the climate and soil conditions and cultivation practices indigenous to North-West Bangladesh

Nawabganj, Dinajpur and Sherpur areas are also famous for production of fine and aromatic rice that have export markets. Rice mills of various capacities have grown throughout the country. The indigenous '*dheki*' method of rice husking has been largely replaced by mechanized rice milling of various degree and scale from small husking to large automatic mills. Mechanized rice milling in Bangladesh is itself a century old technology -- known as the engel-berg huller system.

The extent of processing and storage of paddy depend on locations: (1) the farm for extended personal consumption, (2) the village where producers and traders interact and (3) urban areas where storage facilities set up by public agencies are found.

There are roughly 100,500 (100,000 engel-berg, 38 Chinese automatic and 25 large automatic) rice mills of different sizes and categories spread throughout the country. The engel-berg rice milling system is defective. About 20,000 engel-berg type rice mills are being established every year, these rice mini-mills has widely decentralized the rice milling industry. Over the years, some technological improvements have been introduced, including (1) parboiling the paddy to conserve its vitamins, hardens the grains and reduce the proportion of broken rice (2) mechanical drying of paddy, (3) use of rubber roller Sheller to minimizes grain breakage, (4) utilization of husks as fuel for broilers and dryers and as raw materials for products such as cement and (5) evolution of mechanisms to separate rice bran from husks to extract oil from rice bran. Rice bran is also used as good feed for fish and poultry. According to one estimate, about two million MT of rice bran (at 10 percent of the weight clean rice) could be produced from about 20 million MT of clean rice in Bangladesh annually.

There also exists tremendous scope to export fine quality rice from Bangladesh to the European Union and USA markets. However, this will need a comprehensive collaborative approach involving producers, millers, exporters and financial institutions. A number of incentive packages would be necessary to boost exportation of fine quality rice on a consumption basis with the neighboring countries.

Milling Capacity of Different Types of Rice Mills						
Type of Mill	Total Number	Installed Capacity (MT/week)	Actual Capacity (MT/week)	Period of Operation (week/year)	Potential Operation (week/year)	Remarks
Large automatic	25	336	202	16	29	60 percent running capacity
Chinese automatic	380	103	16	41	30	Running at 15 percent installed capacity

Sub-total (improved technology)	405	--	--	--	--	
Engel-berg	100,000	91	30	24	43	33 percent installed capacity
Grand-total	100,405	--	--	--	--	

Source: Survey report FMPHT/BRRI, 1998

Table 3: Milling Capacity of Different Types of Rice Mills

Women and Fine and Aromatic Rice Subsector

Women in rural Bangladesh are in general responsible for most of the agricultural work in the homestead. Activities in the homesteads ranges from storage seeds, processing of field crops (e.g. threshing, winnowing, parboiling etc.) storage of farm produce, and various processing activities. These activities are reported to have increased substantially with the increase of NGO participation particularly in lending operations.

Gender division of labor in rice production			
Activities	Male	Female	Both
Seed testing	x		
Seed germination	x		
Sowing	x		
Land preparation	x		
Transplanting	x		
Weeding	x		
Irrigating, spraying	x		
Harvesting	x		
Preparing threshing floor		x	
Threshing		x	x
Winnowing/sieving		x	
Seed selection, storage			x
Parboiling		x	
Drying		x	
Husking		x	x
Storage		x	
Drying of straw		x	

Source: Abdullah and Zeidenstein, 1982 & field study

Table 4: Gender division of labor in rice production

4.2 ANALYSIS AND FINDINGS

The subsector analysis and market assessment on fine and aromatic rice in Chirirbandar upazilla under Dinajpur district was carried out in July 2002. During the survey, it was identified that due to soil and land topography fine and aromatic rice is grown primarily in four unions out of 12 unions in Chirirbandar. Based on the observation and key informant interviews, nine unions were selected where fine and aromatic rice is produced in varying scale. Out of 42,790 households¹ in Chirirbandar, 60% farmers cultivate fine and aromatic rice in four unions the rest of the five unions out of nine, cultivates roughly about 20%. A total of 154 actors were interviewed during the subsector analysis and market assessment.

¹ Bangladesh Population Census 1991 published in December 2001.

Interviewees group	Number of respondents
Farmer	75
Paddy trader	29
Processor/miller	17
Retailer	8
Input supplier	14
Wholesaler	8
BDS provider	1
Key informant	5
Total	157

Table 5: Respondents by subsector actors

The following table shows the different respondents by sex and subsector actors by unions. Emphasis was put on the four unions that produce about 60% of the fine and aromatic rice in the Upazilla.

Union / District	Total interviewees			Category of actors interviewed					
	Male	Female	Total	Pro	P. Tr	P/M	Ret	R.W.S	Inpt. S
Abdulpur	14	0	14	3	1	3	2	1	2
Amarpur	18	0	18	10	4	4	0	0	0
Auliapukur	33	0	33	17	9	3	0	1	3
Bhiail	17	0	17	14	2	0	0	0	1
Nasratpur	6	0	6	6	0	0	0	0	0
Punatti	26	0	26	16	8	0	0	1	1
Saintara	4	0	4	3	0	0	0	0	1
Satnala	3	0	3	3	0	0	0	0	0
Tetulia	8	0	8	3	2	0	0	0	3
Dinajpur Sadar thana	18	0	18	0	3	7	4	4	1
Syedpur	5	0	5	0	0	0	2	1	2
Total	152	0	152	75	29	17	8	8	14

Table 6: Area-wise (Union / District) number of interviewees of Fine-Rice subsector

Pro = fine and aromatic rice Producer, P. Tr = Paddy Traders, P/M= Processor or Miller, Ret = Retailer, R.W.S = Rice Wholesaler or suppliers, Inpt. S = Input Suppliers.

It may be noted that the women interviewees were not found; however, it was observed that they make important contribution in the entire process at the household level. As mentioned, earlier, women are mostly engaged in storage seeds, processing of field crops (e.g. threshing, winnowing, parboiling etc.) storage of farm produce. The women work as unpaid family workers and are not included in the chain. The sampling of retailers group is also very small since fine and aromatic rice consumption in Chirrirbandar and Dinajpur Sadar areas is very less. The local people who are engaged in farming grow this rice and usually keeps aside a small portion of the crop for their own special use, as a result the local demand is very limited and retail trading of fine and aromatic rice is also very less.

It appears from the survey that the farmers with larger parcel of land generally grow fine and aromatic rice, while farmers with smaller land size grow them only when the land is better suited for such cultivation, i.e. highlands, where cultivation of coarse rice is slightly difficult because of irrigation problems. This preference of cultivating coarse rice by small farmers is particularly because of the smooth and predictable demand for both home consumption and ready market. However, the farmers in general are of the opinion that fine and aromatic rice do provide better

earning if the market works properly. The survey indicates that 44% farmers produced fine and aromatic rice whose land size is more than 500 decimals.

During the survey, it was found that the local farmers usually grow 3 to 4 different varieties of fine and aromatic rice. The primary motivations of variety selection by the farmers are yield and then the market price or market demand. The following table shows the variety of rice cultivated by the farmers in various unions.

Union	Type of variety produced			
	Katari-Bhog	Badsha-Bhog	Kalajira	Philippine Katari
Abdulpur	1	0	0	2
Amarpur	2	2	2	6
Auliapukur	3	3	3	7
Bhiail	2	0	4	5
Nasratpur	1	3	1	2
Punatti	3	3	10	1
Saintara	0	1	0	2
Satnala	0	1	0	3
Tetulia	0	1	0	1
<i>Total</i>	<i>12</i>	<i>14</i>	<i>20</i>	<i>29</i>
<i>Percentage</i>	<i>16%</i>	<i>18.7%</i>	<i>26.7%</i>	<i>38.6%</i>

Table 7: Pattern of fine and aromatic rice varieties cultivation practice by Union
n=75

Among the four varieties that were found mostly cultivated by the farmers, Badsha-bhog is the best variety as well as high market price but comparatively less yield. The market demand is generally higher for Kalajira. In Chirrirbandar area the average yield of HYV *Aman* Paddy is 1,350 kg per acre while the average yield of fine and aromatic rice in the same area is 800-920 kg per acre. The farmers grow fine and aromatic rice primarily to take the advantage of higher revenue. This is because fine and aromatic rice cultivation requires very small dose of fertilizer, pesticides and irrigation. The per-acre cost of production of fine and aromatic rice is very low compared to coarse rice. From survey it was found that the growth in fine and aromatic rice production is low not because of the farmer's inertia towards fine and aromatic rice, but because of the imperfect market mechanism and fluctuations in the market price and demand. It was observed that the a few large traders, processors and wholesalers actually control the fine and aromatic rice market and the price and demand is usually dictated mostly by them. However, the demand in the trade in urban cities of Bangladesh and export market also influences the demand and price structure of fine and aromatic rice.

The farmers generally sell their paddy⁷ in the local market. There are two major markets for fine and aromatic rice in Dinajpur (10Kms away from Chirribandar Upazilla) – Farm-gate bazaar and Rail-gate bazaar as well as few union level bazaars. Both the bazaars are bi-weekly and starts at very early in the morning at 4/6a.m. and closes by 9-10p.m. The farmers in the remote and backward areas find it hard to reach the bazaars in time. Being the very early hours of the bazaar, the farmers usually had to start at 2 to 3 o'clock in the morning risking theft and robbery in the street, which were frequently reported by many farmers during the interviews.

⁷ Rough brown rice (caryopsis) before husking

The fine and aromatic rice paddies are bought by the paddy-traders and they in turn sell the paddy to the processors. The processors and wholesalers also have their appointed agents to buy paddy on behalf of them. The large processors themselves are usually engaged in the paddy trading thus creating an overall control over the fine and aromatic rice market from paddy trading to wholesaling. Fine and aromatic rice paddy is traded mostly during the *Aman*⁸ harvesting period (i.e., November through December⁹) but the fine and aromatic rice paddy sales are also being conducted in the off-seasons as well. Only the large farmers, who have both storage and financial capacity to sustain a few months, usually sell fine and aromatic rice during the off-seasons for a better price. The small farmers who do not have storage facilities and financial capabilities have to sell their product with low price. During certain market glut the fine and aromatic rice and traders or wholesaler often benefit by purchasing at a lower price. For example, the average selling price of fine and aromatic rice in last year was Taka 350-450 per mound, which is almost equivalent to the price of coarse rice.

Seeds, fertilizer and pesticides are the major inputs for fine and aromatic rice cultivation. It appears in the study that most of the farmers use their own stored seed. Seeds storing methods practiced by majority of the farmers are very traditional and are often not as per quality standards such as collection from the well grown matured ones, preferably from the center of the field, the plants that were not affected by any pests, etc. There is also lack of standard practices for seed preservation. These non-standard practices by the farmers are also contributing the non-quality of fine and aromatic rice. The key informants reported that due to cultivation of fine and aromatic rice along with the coarse rice in the same patch of land often deteriorate the quality through cross-pollination.

During the field survey it was found that, the practice of using chemical fertilizer has increasing significantly these days because of poor soil fertility as reported by the farmers. This usually have negative impact on the slenderness as well as aroma of fine and aromatic rice. The above non-standard practices has contributed to the low-quality, low-yield and low profitability of fine and aromatic rice

The following table shows the percentage of farmers who applies chemical fertilizer and pesticides as against the practice of organic cultivation.

Union	Use of Chemical and Organic Inputs		
	Chemical Fertilizer	Organic Fertilizer	Chemical Pesticide
Abdulpur	3	3	3
Amarpur	10	9	10
Auliapukur	17	13	16
Bhiail	13	12	12
Nasratpur	6	3	5
Punatti	16	16	14

⁸ A term used in Bangladesh and east India for lowland rice grown in the wet season during June to November

⁹ The growth duration of the rice plant is 3-6 months, depending on the variety and the environment under which it is grown. During this time, rice completes two distinct growth phases: vegetative and reproductive. The vegetative phase is subdivided into germination, early seedling growth, and tillering; the reproductive phase is subdivided into the time before and after heading, i.e., panicle exertion

Saintara	3	2	0
Satnala	2	3	3
Tetulia	5	3	4
<i>Total</i>	<i>75</i>	<i>64</i>	<i>67</i>
<i>Percentage</i>	<i>100%</i>	<i>85.33%</i>	<i>89.33%</i>

Table 8: Usage of Chemical and Organic Inputs used for fine and aromatic rice production

**Multiple answers. n=75

Table 8 shows that 100% farmers use chemical fertilizer; however, 85% farmers mix organic fertilizers in various degrees while using chemical fertilizers. All the farmers indicated that they purchase fertilizers from the local union markets while the organic fertilizers or cow-dung is collected from their own livestock. The farmers reported that, they do not get adequate support from the small input retailers regarding appropriate application of the fertilizers and pesticides.

Finance is one of constraints put forward by the members of the subsector chain. The farmers could find a better price of their products if their financial capability in particular to store their products for a month or two after the harvest. The traders and the millers also opined that lack of working capital plays a significant impediment in dealing with fine and aromatic rice. To overcome the financial needs, the actors in the subsector take various arrangements based on their scope and access. Such as the large to medium sized millers have more access to formal financial institutions (banks), while the farmers and the traders due to inaccessibility to the bank, rely on friends, relatives and traditional moneylenders. The following table shows the various arrangements of credit

Union	Sources					Trading arrangement		Association	
	Relatives/ Neighbor	Money Lender	NGO	Bank	Credit not required	Credit	Kind	Yes	No
Abdulpur	1	0	0	1	0	0	0	0	3
Amarpur	2	1	0	7	0	0	0	0	10
Auliapukur	3	2	3	7	7	1	2	1	16
Bhiail	2	0	0	7	5	0	1	0	13
Nasratpur	1	0	0	0	5	0	0	0	6
Punatti	3	3	1	3	5	4	2	0	15
Saintara	0	0	0	0	0	0	0	0	3
Satnala	0	0	0	0	5	0	0	0	3
Tetulia	0	0	0	0	0	0	0	0	5
<i>Total</i>	<i>12</i>	<i>6</i>	<i>4</i>	<i>25</i>	<i>27</i>	<i>5</i>	<i>5</i>	<i>1</i>	<i>74</i>
<i>Percentage</i>	<i>7.94%</i>	<i>3.97%</i>	<i>2.65%</i>	<i>16.55%</i>	<i>17.88%</i>	<i>3.31%</i>	<i>3.31%</i>	<i>0.66%</i>	<i>49.00%</i>

Table 9: Credit arrangements by the subsector actors

[Multiple answers. n=151]

Commercial Bank especially Janata Bank is encouraging loan on agricultural sector. NGOs and local traditional moneylender also provide credit at incremental interest rate. Except for a few credit facilities, all the transactions in fine and aromatic rice subsector are conducted on cash basis, thus limiting the options for credit. At the moment, the subsector does not have any meaningful association particular in fine and aromatic rice grower level.

Union	Constraints of Operating Environment			
	Road	Electricity	Warehouse	Marketplace
Abdulpur	2	1	2	2

Amarpur	0	1	1	0
Auliapukur	6	0	1	3
Bhiail	1	2	4	1
Nasratpur	4	0	0	4
Punatti	2	1	1	0
Saintara	1	0	0	0
Satnala	1	2	0	0
Tetulia	0	0	4	1
<i>Total</i>	<i>17</i>	<i>7</i>	<i>13</i>	<i>11</i>

Table 10: Constraints in the Operating environment

Multiple answers. n=151

Operating environment and infrastructural facilities contribute to the growth of the fine and aromatic rice. The constraints relating to operating environment are felt various ways by different actors in the chain. The farmers/growers are mostly concerned about road, transportation, warehouse and market shed; the millers feel electricity is a major concern since power failure immensely affects their batch processing. The *Arothdars* (stockiest of paddy and rice, generally the wholesalers and processors) are concerned with quality storage facilities especially after the harvesting period.

The farmers, to manage their farming, mostly rely on family labor with certain proportion of hired labor mostly during the cultivation and harvesting periods.

Production (kg)	Himself	Family	Paid
0 - 500	14	14	2
500 - 1000	11	11	8
1000 - 2000	23	14	21
2000- 5000	18	11	18
5000 & above	9	4	9
Total	75	54	58

Table 11: Management of fine and aromatic rice farming

It appears that large production have tendency to employ permanent paid labor. It was also found that all the farmers take assistance from seasonal labors.

Processors or millers are the key player who primarily converts paddy into rice by mechanical processing. Normally husking and full automatic milling industries are involved in rice processing. Most of the processors especially the larger once with full automatic processing units are located at Dinajpur district towns. The millers, process fine and aromatic rice mainly for the wholesalers located either in Dinajpur or in large urban cities.

Seventeen millers were interviewed, where nine were automatic and eight were semi-automatic husking. It was found during the study that only a few large millers have the access to major urban markets and have direct linkages with those markets.

Union	Type of Mill		Available facilities			
	Husking	Auto	Storage	Soaking	Drying	Grading/ Packaging
Abdulpur	2		2	2	2	

Auliapukur	4		3	3	3	
Amarpur	2	1	3	3	3	1
Dinajpur Sadar		8	8	8	8	8
<i>Total</i>	8	9	16	16	16	9

Table 12: Types of Mill and available facilities

Most of the millers have storing, soaking and drying facilities; however, the auto mills have better facilities for storing, drying and packaging purpose. Most of the auto mills are located in Dinajpur district town.

Milling Capacity in MTs per year	Paddy purchase from				
	Direct purchase	Paddy wholesalers	Local Traders	Commission agent	Other
< 2000		3	4		5
> 2000 - <3000		2	1	1	2
> 3000 - < 5000					
> 5000	7	8	3	7	3
<i>Total</i>	7	13	8	8	10

Table 13: Processors buy paddy from different sources

Analysis of different market actors shows that paddy wholesalers are the key players to supply fine paddy to the processors those have high processing capacity. Mostly the larger auto millers generally have multiple sources of purchase points to meet their high milling capacity. Relatively smaller capacity husking millers buy paddy from local traders and other sources e.g. farmers/growers, intermediaries, etc. Commission agents have the trading arrangement with the large auto mills and buy rice on commission basis for them.

fine and aromatic rice Milling capacity per year (MTs)	Sell rice to whom			% of sell to local market				Exporter
	Wholesale	Downstream Markets	Both	100%	<100% - >70%	< 70% - >40%	<40%	
< 2000	3		2	2	2		1	
> 2000 - <3000	1		1			2		
> 3000 - < 5000								
> 5000			10				10	5
<i>Total</i>	4	-	13	2	2	2	11	5

Table 14: fine and aromatic rice selling channel

A number trade channels have been observed in the fine and aromatic subsector. It appears that millers with higher milling capacity always sell their products in both wholesale and major urban markets. From the study, it was found that only five millers have access in the export markets through their own initiative. Exporters purchase fine and aromatic rice directly from millers or through intermediaries.

Type of Mill	Type of Technical skill used		Need to improve skill		Member of Trade Association		Trade arrangement	
	Yes	No	Yes	No	Yes	No	Credit	Cash
Husking	7		5	2	6	1	6	7
Auto Mills	10		8	2	10		9	10
Others								
<i>Total</i>	17	-	13	4	16	1	15	17

Table 15: Technology Issues and trade arrangement between millers to rice wholesalers

Only the auto millers have high technology of rice processing. Most of the Millers are closely associated with the Rice Millers' Association. Credit sales are the major constraints expressed by the millers. Moreover, the competitive market mostly encourages them to do credit business with urban markets.

Type of Mill	Financial Assistance		Major constraints			
	Bank	Others	Electricity	Road	Telephone	Warehouse
Husking	7	6	4	1		4
Auto Mills	10	3	7			3

Table 16: Operational Environment

The critical constraints regarding operating environment/infrastructure as expressed by the subsector members are electricity, and warehouse. The electricity is particularly affecting the automatic millers more severely than other members since the automatic mills process rice in batches. Interruption of power during the processing time deteriorates the quality of rice.

Conclusions

It appears from analysis that the fine and aromatic rice business has good prospect but farmers do not get the right share of the potential due to various market irregularities. A few large rice traders and millers are taking majority of the benefits. Since the yield of fine and aromatic rice is very low, the farmers expect substantial return on their investment. The knowledge, technology and market expansion is critical for the growth of the subsector.

The quality of fine and aromatic rice both at the production and at processing level is extremely important for market expansion and better price particularly the export market.

5.0 Key Constraints

The fine and aromatic rice subsector, a potentially profitable livelihood for the small farmers in selected unions of Chirrirbandar, is suffering from serious awareness and knowledge on improved cultivation and processing related issues particularly for preservation, and enhancement of fineness, aroma and higher yield of fine and aromatic rice. Moreover, poor quality control and inadequate marketing initiatives are also contributing to a static and sometimes declining demand for fine and aromatic rice both at home and abroad.

This has created a negative affect on the poor farmers in not taking fine and aromatic rice cultivation as primary source of livelihood. An in-depth adoptive research is required both at the farmers and processors level to identify possible quality problems and disseminate the improved scientific methods through various extension works. In addition to the quality problem, creating scopes and opportunities for accessing major urban markets by the small farmers and traders seem also critical to the growth of the subsector. From the research it was identified that a few large processors and wholesalers are currently dominating and controlling the market particularly in processing and trading and are working almost like a cartel.

The major constraints that were identified from the survey and key informant interviews were presented to all the actors in the value chain (farmers, traders, processors, wholesalers, exporters, Government and Non-Government organizations, agencies and institutes) in an SS-MA verification workshop. Their recommendations, comments and suggestions were then incorporated in the following 'Key Constraints Matrix' of fine and aromatic rice Subsector. The constraint matrix shows the constraints faced by the subsector actors (under target) and the proposed services or facilitation activities to address the constraints. The matrix also shows the existing provisions of such services that are being currently provided.

	CONSTRAINTS	TARGET	PROPOSED SERVICES OR FACILITATION ACTIVITIES	EXISTING PROVISION OF SERVICES
1	CONSTRAINTS RELATING TO GENERAL LACK OF AWARENESS ON:			
1.1	Lack of improved cultivation technique resulting in loss of fineness, aroma and yield	FARMERS	A One-off facilitation activity for awareness raising addressing all aspects relating to fine and aromatic rice production, post harvesting and processing.	Directorate of Agricultural Extension NGOs (APEX)
1.2	Lack of appropriate knowledge of soil, fertilizer and pest management specific to production of fine and aromatic rice resulting in loss of fineness, aroma and yield.			
1.3	Lack of appropriate seed production, collection and preservation resulting in loss of fineness, aroma and yield			
1.4	Lack of improved harvesting and post harvesting process at the farmer's level resulting in loss of fineness, aroma and yield			
1.5	Lack of appropriate improved processing knowledge and equipments resulting in loss of quality, aroma and yield	MILLERS		
2	CONSTRAINTS RELATING TO MARKET ACCESS			
2.1	Lack of easy market linkages for the small farmers, traders, and processors with the large urban markets resulting in control of fine and aromatic rice market by a few large traders, processors and wholesalers in Dinajpur thus making the small farmers, traders and processors looser and de-motivating them to take fine and aromatic rice as a primary business	FARMERS, SMALL TRADERS, PROCESSORS	Creating direct market linkage for the small farmers, traders and processors with the urban markets	NGOs (Apex)
2.2	Lack of appropriate knowledge, information, skills, and technology both at the farmers and processing level resulting in deterioration of quality and yield	FARMERS, PROCESSORS	Develop standard practices in fine and aromatic rice production and processing through adoptive research	
2.3	Lack of poor marketing initiative and market linkages resulting in un-sustained demand particularly at the export market	FARMERS, PROCESSORS, TRADERS, WHOLESALERS	Identifying appropriate markets, initiating appropriate marketing and proportional activities	Fine and aromatic rice Exporters' Association, Export Promotion Bureau
2.4	Prevalence of adulteration in fine and aromatic rice at processors' level leading to poor demand	PROCESSORS	Developing appropriate quality assurance mechanism and creating awareness on benefits of quality control	Miller Association
2.5	Lack of easy access to appropriate and affordable processing facilities because of control of fine and aromatic rice processing plants by a few large processors thus making the small farmers and traders de-motivated	FARMERS, TRADERS	Promoting standard business practice encouraging competition	Processors

2.6	Lack of affordable, appropriate and effective processing technology for fine and aromatic rice leading to poor quality, increase rice-breakage, and loss of aroma	PROCESSORS	Searching of appropriate affective low-cost possessing technologies for fine and aromatic rice	Processors
3.	CONSTRAINTS RELATING TO INPUT/SUPPLY			
3.1	Prevalence of sales of non-quality and adulterated inputs by the input suppliers especially fertilizer and pesticides leading to poor yield, crop failure, high investment.	INPUT SUPPLIERS, FARMERS	Developing awareness on quality inputs for fine and aromatic rice cultivation	Input Suppliers
3.2	Lack of product (input) knowledge of the local small input retailers leading to poor dissemination of appropriate input application to the farmers	FARMERS, INPUT SUPPLIERS	Developing capacities, provide knowledge and information on products and their appropriate usage	Directorate of Agriculture, Private Input Manufacturers (embedded service)
3.3	Lack of availability of organic fertilizers and pesticides resulting in poor quality of fine and aromatic rice	FARMERS	Stimulating private sector actors highlighting the demand and market size	Directorate of Livestock, Input Suppliers, NGOs
4.	CONSTRAINTS RELATING TO FINANCE			
4.1	Lack of easy access to financial market by the farmers, small traders and processors leading to poor or no benefits from economy of scale.	FARMERS, TRADERS. PROCESSORS	Facilitating easy access to capital and working capital through linkage with financial markets and credit providers appropriate to fine and aromatic rice production and processing	NGOs, Formal financial institutions
5.	CONSTRAINTS RELATING TO OPERATING ENVIRONMENT			
5.1	Lack of organized market shed for trading fine and aromatic rice (paddy) and within easy accessibility of the farmers	FARMERS, TRADERS	Stimulating private sector to provide market shed facilities as a business	LGED Private Sector through Government leasing
5.2	Lack of uninterrupted power supply by DESA/REB resulting in inappropriate processing at the milling level	PROCESSORS	Stimulating private sector to provide power facilities as a business	Rural Electrification Board
5.3	Lack of adequate storage facilities resulting in sales of fine and aromatic rice by the farmers' and traders' during the harvesting season at a lower cost	FARMERS, TRADERS	Stimulating private sector to provide storage and warehouse facilities as a business	Processors, Wholesalers, <i>Arrottdars</i>
5.3	Prevalence of hijacking and looting of fine and aromatic rice particularly during transportation resulting in de-motivation	FARMERS. PROCESSORS, TRADERS	Advocacy for strengthening law enforcement, social mobilization for law and order restoration, promotion of good governance	Government, Social Organizations
6.	CONSTRAINTS RELATED TO ASSOCIATION			
6.1	Absence of productive collaboration among farmers and traders leading to poor bargaining power and loss of potential bulk discount in terms of buying inputs, and sales of fine and aromatic rice and paddy,	FARMERS, TRADERS	Facilitating the formation of farmers' and small traders groups	NGOs

gain access to financial markets, etc.			
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N.B.: The constraints in the matrix above are presented in accordance to the major areas as per the format of the questionnaire and not in priority

The field survey and the various secondary sources of information reveal that the fine and aromatic rice is a profitable farming venture for the farmers and a good source of livelihood. The income potential is higher in fine and aromatic rice cultivation since fine and aromatic rice cultivation does not normally require additional expenditure on fertilizer, pesticides and irrigation. Rather using indiscriminate use of fertilizers increases the thickness of the rice and reduces aroma. The use of organic fertilizers and pesticides, through traditional practices, believes to helps enhancement of aroma and preservation of fineness as mentioned by the farmers.

The different varieties of fine and aromatic rice also have impact on yield, price and market demand. The traditional varieties such as Kalajira, Katari-Bhog, Badsha-bhog have higher market demand as well as price. However, due to lack of knowledge, skills, and awareness on scientific cultivation particularly seed collection, seed preservation, land selection for cultivation, use of fertilizers and pesticides as well as post harvest processing at the farmers level, etc. makes it difficult for a farmer to reap the opportunity optimally. The farmers on the other hand do not produce fine and aromatic rice in the entire land he possess since fine and aromatic rice is grown in high lands with specific soil and land topography. Even if the entire land topographically is suitable for fine and aromatic rice cultivation, a farmer does not produce fine and aromatic rice in the entire land because fine and aromatic rice is not consumed by the farmers as staple food. As a result coarse rice usually takes the large share of the land. This mix cultivation of fine and coarse rice in the adjacent area often results in cross-pollination between the two rices and deteriorates the fine variety over time.

Lack of knowledge and information on fine and aromatic rice processing (from post harvest processing at farmers level to milling level) is also one of the critical element in maintaining the quality of fine and aromatic rice. At the household level, storage of seeds, processing of crops (e.g. threshing, winnowing, etc.) storage of farm produce until sale, etc are common. At the milling level the scenarios has changed significantly during the last one-decade. The indigenous 'dheki' (manual treadle rice processors) method of rice husking has been largely replaced by mechanized rice milling of various degree and scale from small husking to large automatic mills. Mechanized rice milling in Bangladesh is quite an old technology -- known as the Engel berg huller system. Although this manual and semi-automatic processing generally help maintain the aroma of fine and aromatic rice, the two most critical factor made this process unpopular, 1) higher breakage of rice resulting in lesser yield, and 2) produces less bright rice because of the bran that cannot be removed without polishing. These factors forced the farmers and the traders to switch to automatic mills especially to catering the fine and aromatic rice needs. However, due to poor processing knowledge, skills and awareness these automatic mill owners are further deteriorating the quality of fine and aromatic rice. Over polishing and often use of urea and detergent to make the rice look brighter, using coarse rice to run through the polishing units several times to make them look fine and mix them with fine and aromatic rice are some of the malpractices found during the survey. It was also observed that the present processing technology is not adequate to serve the quality requirements of the market especially international market. The high breakage, and low quality processing is affecting the entire fine and aromatic rice subsector.

On the other hand because of the control over fine and aromatic rice market by a few large processors, and wholesalers, the farmers often get into a relatively disadvantage position. It may

be noted here that fine and aromatic rice is not a staple food, it is consumers during festivals, special events such weddings, entertaining guests, etc. As a result, the farmers usually sell the entire production. The farmers in this regard do not have many alternatives than to sell the crop right after the harvest, because either they have to repay the loan that he had made for the cultivation, or they might need money for the cultivation of other crops for the following season. It was found that a few large traders, processors and wholesalers take the opportunity of the desperate situation of the farmers. This group which almost works like “cartels” actually controls the processing mills, as well as the fine and aromatic rice market.

It may be noted that the consumption of fine and aromatic rice in Dinajpur is extremely low. The primary markets for fine and aromatic rice are major urban cities particularly Dhaka, Chittagong and Sylhet. The consumption patters in these urban markets are roughly Dhaka 45%, Chittagong 25%, Sylhet 15% and other urban markets of the country about 15%. Currently the few large traders deal more than 90% of the fine and aromatic rice with these urban markets. With this market scenario, the small farmers and traders have no other options but to sell their products to these few large traders usually at a price dictated by the large traders which is generally much lower than the average market price. As a result creating direct market linkage for the small farmers, traders and processors with the urban markets is a critical incentive for these groups to take fine and aromatic rice as one of their primary livelihood.

One of the focuses of the study is to explore the possibilities of increasing fine and aromatic rice export potentials. However, the study shows that due to poor export market promotional activities the fine and aromatic rice export potential has reduced significantly. In order to scale-up the fine and aromatic rice subsector, export market needs to be developed. The exporters of fine and aromatic rice have formed an association in 1995. Presently the association has 12 exporters. However, the “fine and aromatic rice Exporters’ Association” have not undertaken any pro-active marketing and promotional activities during this period. The major actors in the subsector chain believe that exploring export markets is critical for the benefit of the large number of people actively related to the entire fine and aromatic rice subsector.

There are also constraints regarding inputs, especially organic fertilizer and pesticides. The farmers expressed non-availability of required inputs and inputs not meeting quality standard as one of the big constraint in fine and aromatic rice cultivation. Organic fertilizer and pesticides is required for quality production of fine and aromatic rice especially preserving and enhancing the fineness and aroma of the grain. The DAE and particularly some of the NGOs (BRAC, Apex, Ubinig, Proshika) are promoting the production and use of organic fertilizers (compost) to the farmers especially those who are engaged in vegetable gardening. Although this has developed awareness, the product is still not available commercially in a large scale for fine and aromatic rice cultivation. The farmers as a result to get higher yield, use chemical fertilizer, however, they complained about the poor quality and adulteration of fertilizers and pesticides in the market. It was observed from the field survey that the information and knowledge of the fertilizer and pesticide sellers is also found to be very critical in the entire process since that the farmers rely considerably on the fertilizer and pesticide sellers regarding the selection of appropriate input, application and dosage of fertilizer and pesticides. Although the large input manufacturers, as a part of their promotion provides training on these issues to the large dealers and retailers at the district level, the input suppliers particularly in the union and village level do not get benefit from these training.

6.0 SUBSECTOR MAP

A subsector map is a graphical representation of a particular subsector operating in a particular area showing the relationship between the actors in reaching the final product to the customer

6.1 Definition of different actors involved in fine and aromatic rice subsector

Producer/Farmers: People engaged in cultivation and farming of fine and aromatic rice

Trader (Paddy): People involved generally in buying and selling of fine and aromatic rice paddy (before processing) from different market places or directly from farmers and sell it to the processors

Processor/Miller: Persons engaged in processing or milling of fine and aromatic rice paddy into processed rice using automatic or semi-automatic technologies. Processors also include persons engaged in flattening of rice to prepare *chira* or roast it to make puffed rice (*muri*) or crush them to make rice flour.

Rice Trader: People engaged in buying and selling of fine and aromatic rice. Sometimes rice traders also works as commissioning agent for large millers. *Arothders* also takes similar commissions for providing selling support in major market place.

Wholesaler: People engaged in buying and selling of fine rice in bulk quantities, they invest and transact huge money in his business on regular basis and often control the market price.

Retailer: Comparatively small business trader who buys and sells fine and aromatic rice in smaller quantity and generally sells directly to the end user.

Input Supplier: People engaged in sales of agro inputs e.g. seeds, fertilizers, pesticides, farming equipment, tools, machinery, etc.

6.3 EXPLANATIONS OF SUBSECTOR MAP

Channel –1: This is the most commonly used channel of fine and aromatic rice where majority of the actors are engaged. About 30% respondents have reported that they use this channel to reach the ultimate market.

Channel-2: This channel has been found to be the second most used channel where producers, paddy traders/processors/millers and wholesalers are actively involved. About 20% of the people engaged in fine and aromatic rice subsector use this channel

Channel-3: This channel is slightly different from the other channels. In this channel the producers sells their product to the large paddy traders and the traders process the rice through their own initiatives from the millers. The processed rice is then sold by the traders to the wholesaler via a commissioning agents or *Arothdars*.

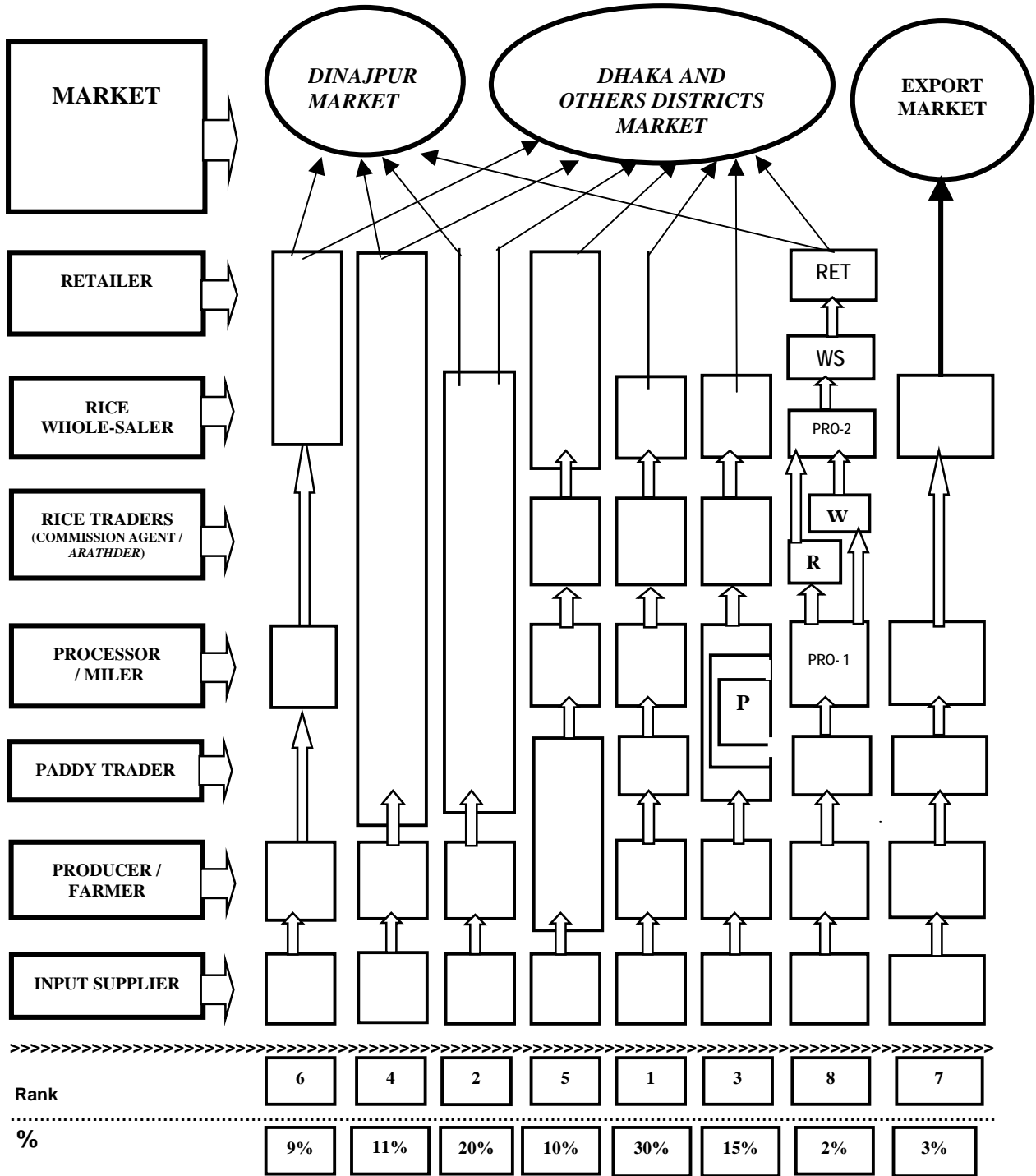
Channel-4: This channel is completely dominated by the automatic rice miller who collects, processes, and sells directly to the local and major urban market. About 11% fine and aromatic rice actors are involved to reaching the product to the consumer level.

Channel- 5: About 10% respondents are engaged in this channel where producers and paddy traders are the same person. They sell their products directly to the miller and then the millers sell the rice to the wholesalers via *Arothders*.

Channel -6: This channel is represented by only a few actors, producer, miller and rice wholesaler as well as the retailers.

Channel-7: This channel is primarily used by the exporters of fine and aromatic rice. The exporters collect and process rice directly from millers and exports to other countries.

6.2 FINE AND AROMATIC RICE SUBSECTOR MAP



Note for Rank 8: Pro-1 = Paddy processor, R = Retailer (Rice), W = Wholesaler (Rice), Pro-2 = Rice Processor, WS = Wholesaler of processed food, RET = Retailer of processed food.
P = Producer / Farmer in Rank 3.

Channel-8: This channel shows further processing of fine and aromatic rice (flattening, and flour making). Flatten rice (chiraa) come from processed rice and processors (flatteners) buy rice from rice wholesalers/retailers or millers and after further processing (flattening, and rice flour making) sells it in the local and major urban markets.

The above subsector map shows too many channels that are currently operating in various scales and degrees in the market. A critical review of the map shows that there are not hardly one channel that overwhelmingly participated by the subsector actors with a substantial share. This could also be viewed as a reflection of a weak market operation.

6. 0 Illustrative Interventions with Market Assessment

6.1 Facilitation Activity 1

This is a one-off facilitation activity for awareness raising addressing all aspects relating to fine and aromatic rice production, post harvesting and processing, and is not considered as BDS. This activity has a clear exist strategy.

Related Constraint: Lack of awareness, knowledge and information on a) Improved cultivation technique for preservation of fineness and ensuring higher yield; b) Soil, fertilizer and pest management specific to production of fine and aromatic rice; c) Quality seed production, collection and preservation; d) Improved harvesting and post harvesting process at the farmer's level; e) Improved milling process for the enhancement of quality, aroma and yield

Description of the Service

During the field research it was observed that the general awareness regarding quality production and processing of fine and aromatic rice is one of the critical constraints of the subsector that can profoundly improve its growth, profitability and income especially to the large number of farm households who are engaged in the fine and aromatic rice cultivation and sales process. This awareness service would primarily demand for exchange and dissemination of information and knowledge to the subsector actors relating to:

1. Improved Cultivation Techniques
2. Soil, Fertilizer and Pest Management
3. Quality Seed Production, Preservation and Use
4. Improved Harvesting Techniques

Related Subsector Constraint

The subsector actors, in general, do not have appropriate and adequate knowledge and awareness on various aspects of fine quality rice production and processing. This lack of awareness is hampering the market of fine and aromatic rice in general and is forcing the farmers to concentrate on coarse rice production despite the comparative higher income potential to the households. Under the prevailing circumstances, farmers do not see much potential of producing fine quality rice more than a meager supplementary income.

Market Information

Existing Providers:

The existing providers of awareness and dissemination of knowledge and information includes:

1. Directorate of Livestock and its Extension Services (GoB)
2. NGOs (Apex)
3. Large Input Manufacturing Companies

Market Size and Penetration

The use of the adoptive research findings has the potential for usage to a large number of producers and processors and would benefit all the actors in the subsector directly or indirectly. Currently out of 42,790 households in Chirrirbandar upazilla about 60% are involved in cultivation of fine and aromatic rice. There are about 50 millers of various degree and scale from ranging from large fully automatic to mini autos; semi autos to Engel berg huller systems. It is believed that a number of other farmers would also start growing fine and aromatic rice in large parcel of lands if they see fine as a potential source of increased income through this awareness program

Frequency of use:

The processors and in particular the farmers use mostly their own indigenous knowledge and experience in production and processing fine and aromatic rice. Only a few farmers that have received little assistance from DAE and NGOs have reported using the services at least once per in a year. Moreover this service will be provided as a one time facilitation activity for dissemination of knowledge and information raising awareness among the key actors for increasing potential benefit of the fine and aromatic rice subsector as a whole

Constraints and Opportunities in the Market for Services

Demand-side

1. The farmers for increasing their livelihood from fine and aromatic rice cultivation looks for such service. The field research as well as interview from the key informants shows that there is strong demand for this service. Moreover, the various limited awareness programs by the DAE and NGOs on fine and aromatic rice cultivation shows that the demand for improving income potential from cultivation of fine and aromatic rice is strong. It may be mentioned here that although limited work has been done at the cultivation level, the processing side of the fine and aromatic rice has been totally ignored by both the government and the NGOs. Currently both the farmers and processors rely on their indigenous knowledge and experience or practices tricks that are profitable for them at least in the short run.
2. Unavailability of services in the target area

Supply-side (by supplier type)

1. Government:
 - a) Lack of adequate manpower and resources and motivation
 - b) Inadequate extension services leading to poor awareness and knowledge
2. NGOs:
 - a) Limited awareness program focused on yield and verity of fine and aromatic rice

Satisfaction with Services

Those who reported having acquired the services stated that they are generally satisfied.

Awareness of the Services

Awareness regarding the services is minimal

Proposed provider(s) to Target for Interventions

A facilitator would design, organize and implement a comprehensive program for developing awareness and knowledge on the issues with the participation of the government (Department of

Agriculture and Extension), NGOs and private sector (Large Input manufacturers and dealers) service providers

Financial Sustainability

This is a one-off awareness raising campaign intended to stimulate the demand and supply of BDS under a market environment through private sector providers

Potential Impact on the Fine Quality Rice Subsector

- Increased awareness and knowledge on various important issues relating to production and processing of fine quality rice would provide the farmers and processors with
- Vision and understanding about the potential of fine and aromatic rice production and processing as a highly profitable business
- Strengthen the overall fine quality rice market
- Increase income of the farmers
- Increase engagement of female members in the trade

Illustrative Interventions

Intervention/Facilitation Activity

BDS Providers

1. Government
2. NGOs
3. Private Sector

Sustainability

Design and implement interventions leading to service provision at full cost

Demand creation to achieve economic volume of transactions for BDS providers

Methodology

1. Needs assessment survey
2. Stakeholder workshops
3. Farmers' group meeting
4. Communication and motivation through audio-visual medium and tools

Facilitation activities would include

1. Stakeholder mobilization and motivation
2. Dialogue meetings at different levels including private sector
3. Capacity building of private sector service providers
4. Promotion of best practices
5. Exchange visits

Exit Strategy

1. Create no undue expectations
2. Create no dependency on facilitator
3. Resist temptation of taking up provider's role
4. Develop capacities of BDS providers
5. Transfer gradually the facilitator's functions to BDS providers
6. Communicate transparently the exit strategy and time frame to all stakeholders from the outset
7. Lay out post exit monitoring and follow up plan

6.2 Facilitation Activity 2

Develop Standard Practices for Cultivation and Processing of Fine Quality Rice through Adoptive Research. This activity is also not a BDS, but a one off facilitation activity.

Related Constraint Deterioration of quality at cultivation and processing level because of knowledge, information, skills, and technology used

I. Description of the service

During the field research it was observed that the lack of standard practices in both cultivation and processing of fine and aromatic rice is one of the critical constraints of the subsector in maintaining quality. This lack of standard is profoundly affecting the growth, profitability and income potential especially to the large number of farm households who are engaged in the fine and aromatic rice cultivation and sales process. A thorough adoptive research is required to identify the strengths and weakness of the present practices both at the farming and processing level. This research service would primarily demand for scientific analysis of present practices, exchange and dissemination of information and knowledge of the research to the subsector actors relating to:

1. Improved cultivation Techniques
2. Chemical vs organic fertilizer and pesticide and its usage
3. Season and timing of cultivation
4. Soil management
5. Quality seed production and preservation
6. Harvesting and post harvesting practices and techniques
7. Processing and storage practices

II. Related Subsector Constraint

The subsector actors, in general, do not have any standard related the various quality issues relating to production and processing is being scientifically studied to determine its strengths and weaknesses as well as the likely threats and opportunities to the overall subsector. This lack of standardization is hampering the market of fine and aromatic rice in general and is forcing the farmers to concentrate on coarse rice production despite the comparative higher income potential to the households. Under the prevailing circumstances, farmers do not see much potential of producing fine quality rice more than a meager supplementary income.

III. Market Information regarding the service

Existing Providers of the Service

The existing providers of adoptive research are:

1. Directorate of Agriculture Extension (GoB)

2. Bangladesh Rice Research Institute (BRRI)
3. Bangladesh Institute of Nuclear Agriculture (BINA)
4. Agricultural educational institutes (IPSA, BAU)
5. NGOs (Apex, Heed, Ubinig)

During the field research, it was observed that a “comprehensive” research addressing the above mentioned issues to improve the qualitative aspects of fine and aromatic rice is not being conducted by any organizations. Certain sporadic research on various issues has in the past being undertaken by a few of the above service providers, however, they are not sufficient

Market Size and Penetration of the Service

The use of the adoptive research findings has the potential for usage to a large number of producers and processors and would benefit all the actors in the subsector directly or indirectly. Currently out of 42,790 households in Chirrirbandar upazilla about 60% are involved in cultivation of fine and aromatic rice. There are about 50 millers of various degree and scale from ranging from large fully automatic to mini autos; semi autos to Engel berg huller systems. Many of these processors are also engaged in coarse rice processing. It is believed that a number of other farmers would also start growing fine and aromatic rice in large parcel of lands if they see fine as a potential source of increased income through this systematized standardized knowledge and information of cultivation techniques of fine and aromatic rice.

Frequency of use of the service

The service will be a one time facilitation activity for dissemination of the standard practice for increasing potential benefit of the fine and aromatic rice subsector as a whole.

IV. Constraints and Opportunities in the Market for the Service

Demand-side

The farmers for increasing their livelihood from fine and aromatic rice cultivation looks for such service. The field research as well as interview from the key informants shows that there is strong demand for this service. Moreover, the various issue-based research on fine and aromatic rice varieties, higher yield, etc, and their acceptance by the farmers shows that the demand for improving income potential from cultivation of fine and aromatic rice is strong.

Supply-side (by supplier type)

1. Department of Agricultural Extension:
 - a) Lack of adequate manpower and resources and priority
 - b) Inadequate research leading to poor extension services
2. Bangladesh Rice Research Institute (BRRI):
 - a) Focus on high-yielding modern varieties (MV) of rice in general. However, BRRI developed dhan34, a fine aromatic MV and three new varieties are about to be released soon
 - b) Priority on overall staple rice production of the country
 - c) Lack of adequate resource
3. NGOs:
 - a) Limited research focus on yield and variety improvement (APEX, HEED, Ubinig)

Satisfaction with Services

Those who reported having acquired the limited services stated that they require scientific justification and standardization of the practices for both higher yield and increased income potential

Awareness of the Services

Awareness regarding the services is minimal. The farmers mostly knows about DAE providing such service

Proposed provider(s) to Target for Interventions

The primarily the facilitator would design, organize and implement a comprehensive program for undertaking this adoptive research on the issues mentioned above with the participation of the government (Department of Agriculture and Extension), Bangladesh Rice Research Institute (BRRI) NGOs and agricultural educational institutes and develop a standard package for producing and processing fine and aromatic rice through extension and follow-up services.

Financial Sustainability

This is a one-off research work to scientifically justify each practice in both production and processing level and disseminate the same through extension services

Potential Impact on the Fine Quality Rice Subsector

Standardized practices through research would increase awareness and knowledge on various important issues relating to production and processing of fine quality rice

- a. Improve the quality of finished product
- b. Enhance demand both at home and abroad
- c. Strengthen the overall fine quality rice market
- d. Increase income of the subsector actors especially the farmers

Illustrative Interventions

- a. Intervention/Facilitation Activity

Facilitator

1. HEED Bangladesh
2. Apex Bangladesh

Reasons/Justification

HEED Bangladesh who is already working on adoptive research on fine and aromatic rice in collaboration with PETRRA can undertake the comprehensive research in partnership with BRRI, BAU and other technical organization with expertise on rice processing technology.

Sustainability

This would be a one-off program designed to strengthen the subsector

Methodology

1. Understanding and documenting current practices
2. undertake scientific validation of existing and potential new practices

3. Promotion of standardize practices through demonstrations, group meetings and capacity building of the actors
4. Exchange visits of relevant actors to speed up the dissemination/ extension process

The Role of facilitator

1. An assessment of the current practices of cultivation by the farmers and processing technology and expertise applied by the millers/processors need to be ascertained and documented. The se practices then should be validated through scientific analysis and justification as right or wrong. Based on these findings the existing best practices, if any, as well as development of new practices should be standardized for betterment of the subsector. The facilitator then would have to undertake promotion and extension work to make these knowledge and information available to the cultivators and the processors. The process should include:
 - land and soil variations
 - seed variety
 - seasonality factors
 - input usage patterns (seed, fertilizer, pesticide, organic farming practices, and their effect on FAG properties as well as yield
 - post harvest factors
 - factors and processes that affect the aromatic properties of FAG rice
2. Scientific validation
3. Compilation standards
4. Field demonstration
5. Stakeholder workshops for dissemination of findings
6. Farmers' group meeting

Exit Strategy

Since this a one-off facilitation activity undertaken by the facilitator and should have a clear exist strategy upfront. The primary strategies are

1. Create no undue expectations
2. Create no dependency on facilitator
3. Resist temptation of taking up provider's role
4. Develop capacities of BDS providers
5. Transfer gradually the facilitator's functions to BDS providers
6. Communicate transparently the exit strategy and time frame to all stakeholders from the outset
7. Lay out post exit monitoring and follow up plan

6.3 Facilitation Activity 3

Creating direct market linkage for the small farmers, traders and processors with the urban markets through formation of SMEs' Association

Related Constraint: Control of fine and aromatic rice market by a few large traders, processors and wholesalers in Dinajpur thus making the small farmers, traders and processors looser and demotivating them to take fine and aromatic rice as a primary business

Description of the Service

The fine quality rice market in Dinjpur is characterized by an unstable demand due to poor linkages with major markets in the urban areas. This makes the entire market extremely

vulnerable especially to the SMEs. Creating opportunities and access to alternative markets can be considered as one of the critical factors contributing to overall benefit to the SMEs

This service would primarily include:

1. Exploring major urban markets and market actors
2. Developing regular flow of information amongst the market actors
3. Searching unmet markets both at home and abroad
4. Forging linkage between actors

Related Subsector Constraints

The target geographic area, in general, does not have adequate market linkages and market access to large urban markets for fine and aromatic rice especially for the SMEs. As a result, the market tends to be unstable for them. Lack of market information, lack of diversified and competitive market, lack of appropriate storage are some of the major weaknesses of the market arising out of absence of linkage, market access and absence of coordination amongst the market actors. These constraints are likely to pose even a greater impediment especially when it comes to scaling up the fine and aromatic rice production and sales. The lack of adequate linkages and coordination has not only made the market volatile and uncertain but has also de-motivated the SMEs in taking up fine and aromatic rice production solely and sales as a viable business venture.

Market Information

Existing Providers

The existing providers of linkage and coordination includes:

1. Large Processor (fine and aromatic rice)
2. Traders
3. Wholesales

Market Size and Penetration

During the field research it was observed that nearly 60% of the households in four unions of Chirrirbandar are engaged cultivation of fine and aromatic rice. The rest of unions grow fine and aromatic rice in very small quantities. The prime trade of both fine quality paddy and rice is located largely in Dinajpur Sadar. Many processors, wholesales and fine and aromatic rice traders in Dinajpur have been found to be lacking adequate facilities for accessing large urban markets outside Dinajpur. Lack of linkage with large urban market makes these traders solely dependent on only a few large fine and aromatic rice marketers and small local retailers in Dinajpur. However, the field research and interviews with key informants in Dhaka and Dinajpur suggest a strong demand of fine and aromatic rice in both large urban markets in the country and good potential to export to other countries, weak market linkage have contributed in very erratic and unpredictable demand of fine and aromatic rice in these markets. During the survey, it was also found that the price of fine and aromatic rice in last year fell from average Tk700 (the price varies from variety to variety) to Tk 350 per mound, making the market glut with fine and aromatic rice. Almost all the producers and traders have complained about this erratic demand of fine and aromatic rice and lack of access to alternative markets. There are about 1,000 SMEs involved in the processing and trading process. During the survey, it was found that some of the fine and aromatic rice traders were found to very desperate in searching for contacts and linkages for export market as well as alternative urban markets. Many requested the survey team to provide such contact and service.

Frequency of use of the Service

The service is required not only during the fine and aromatic rice-harvesting period (i.e., November through December) but almost throughout the year for sales of rice to the urban and

export markets. Only a few major processors and wholesales have access to and use the existing market linkage facilities. The rest are dependent on the local processors, wholesales and traders.

Constraints and Opportunities in the Market for Services

Demand-side

1. The processors and traders in general and the small processors and traders in particular look for the service for their profitability.
2. The fine and aromatic rice market seems to be controlled by only a few large processors and wholesales as a result many SMEs are reluctant to get this from those large traders with an assumption that the information supplied by them will not be appropriate for them
3. Due to poor quality and adulteration of fine and aromatic rice by the some of the large traders, the demand and linkage is reducing in the major urban markets, this makes the SMEs frustrated and reluctant about the fine and aromatic rice business

Supply-side (by supplier type)

3. Private Sector:
 - a) The large processors use the service to their own benefit because of the competition
 - b) The large traders provide the service with a high profit margin gained from the purchase of rice from the SMEs and selling it to the urban markets thus making it difficult for the SMEs to do business profitably

Opportunities:

1. Opportunities for large traders/wholesales, with a fair trade attitude, to enter in the market and provide embedded services in terms of creating market linkages
2. Cultivating new markets Set standard in terms of quality rice delivery to large urban markets

Satisfaction with Services

The farmers, traders and the processors, especially the small and medium enterprises showed dissatisfaction regarding the services particularly for erratic and unpredictable nature of service and inaccessibility

Awareness of the Services

Awareness regarding the services in general is quite high

Proposed provider(s) to Target for Interventions

A facilitator would design, organize and implement a comprehensive program 1) organizing an association of the SMEs working on fine and aromatic rice, 2) creating linkages between the SMEs' association and urban fine and aromatic rice markets for meeting unmet markets, creating a competitive and alternative market options and setting quality standards

Financial Sustainability

A one-off facilitation role will be required with a view to encourage the private sector to enter into the market so that the linkage is created. Once the linkage is established the private sector (mainly the large processors) would start providing this service through the mark-up between purchase and sales price from the producers to resellers in urban markets

Potential Impact on the fine and aromatic rice Subsector

1. Market linkage and market access would provide the processors, wholesales as well as the farmers especially the SMEs
2. Opportunities to produce and sell fine and aromatic rice more profitably

3. Strengthen the overall fine and aromatic rice market in the target area
4. Increase sense of security among the SMEs for higher fine and aromatic rice yields
5. Increase sustained source of regular income to the subsector actors
6. Increase engagement of female members in the trade

Illustrative Interventions

Intervention/Facilitation Activity

BDS Providers

1. Association of fine and aromatic rice SMEs

Sustainability

The service of providing market access to the small producers will be sustained through mark-up in purchase and sales of fine and aromatic rice from the producers to resellers in urban markets

Methodology

1. Formation of an association of small traders dealing in fine and aromatic rice
2. Organize workshops with the small traders on how the association can meet their felt need
3. Build capacity of the association in identifying alternative markets, need assessment of the urban markets, forecasting demands, packaging, transportation, promotion, and coordination with the urban traders

Role of Facilitator would include

1. Mobilization and motivation of SMEs with a view to form an association
2. Dialogue meetings with small traders at the target area and urban markets to share and exchange market information, market needs, expectations, and demands
3. Capacity building of traders association to provide appropriate services relating to price, quality, and other market demands through market projection, pricing, mark-up calculation, transportation, packaging, and marketing and communication skills
4. Assist in develop and implementing the modus operandi of the association
5. Promotion of small traders' association to the urban markets as an alternative source of fine and aromatic rice suppliers meeting the market needs and demands

Exit Strategy

1. Develop clear plan of action and guidelines
2. Communicate transparently the exit strategy and time frame to all stakeholders from the outset
3. Define role and task of facilitator and the association
4. Develop capacities of the BDS providers to carry out the activities without any assistance from the facilitators within a particular time frame.
5. The facilitator will transfer gradually the facilitation activities and functions to the BDS providers
6. Develop monitoring tools and monitoring criteria, variables
7. Prepare well defined post exit monitoring and follow up plan

7.0 Recommendations for Phase II

7.1 Identification of a Potential facilitator

After having reviewed the facilitation service interventions required to address the constraints faced by the subsector, the SS-MA team proposes both HEED and Apex as the potential facilitators for the fine and aromatic rice sub sector. It is felt that both HEED and Apex are currently working on the fine and aromatic rice interventions for improvement of the subsector. Because of the strengths and shortcomings of the organizations in certain operational areas, the SS-MA team feels that a partnership between the two can satisfactorily play the facilitative role that is proposed interventions.

HEED in particular is focused on the variety improvement of fine and aromatic rice and conducting on farm research with the farmers for enhancing quality and fineness of the grain for better income opportunity of the farmers. HEED's long experience in participatory development program in 600 villages, community assistance program in 136 tea gardens, grain storage bank in 7 upazillas, and particularly the expertise of production and marketing of fine, aromatic and glutinous (FAG) rice through farmer's participation can be utilized in the proposed project. HEED's current project with PETRRA for development of sustainable commercial FAG rice enterprises through participation of farmers is certainly noteworthy. It, however, may be noted that HEED's operational activities are mainly implemented through very traditional NGO approach. The new paradigm of BDS that is critical to the proposed project would certainly require HEED to dramatically shift in their approach. In this regard, one member who was actively involved in the SS-MA team from HEED can play an instrumental role in the organization. Nevertheless, an extensive capacity building and orientation as well as support would be required in implementation of the proposed program. Since HEED's present activity focuses mostly on the research activities, HEED can play the facilitative role for the adoptive research and awareness building program.

Apex, on the other hand, is also working on the improvement of the quality of fine and aromatic rice production with assistance from PETRRA. The overall program approach of Apex is slightly upgraded from the traditional NGO viewpoint. This is probably because of the people in the management of the Apex are primarily from private sector and are currently involved in different enterprises.

In general, although the organizations comply with the traditional development paradigm of NGOs being direct service providers, both HEED and Apex are emphasizing the importance of learning from the current piloting phase to understand which interventions and approaches could be market driven and self-sustaining; and have the potential for replication. Both HEED and Apex seems keen on learning and pursuing the BDS market development approach. One staff from each of the organization were involved full time with the SS-MA team in the subsector market assessment on both dairy and fine and aromatic rice as well as in the designing of business development services.

The SS-MA team feels that both the organizations can contribute the positively in the proposed program interventions mentioned in this report once management shows its willingness and agrees to act as a facilitator.

7.2 Program Activities

1. Establish working understanding with DFID and other partners
2. Assemble MMWP Facilitation Team and Management Structure
3. Capacity Building of Facilitation Team (BDS, Market Development Paradigm)
4. Strategic Planning (Implementation/Action Plan)
5. Refinement of Intervention Design
6. Baseline survey
7. Begin Facilitation Activity I, Awareness Campaign
8. Coordinate implementation of interventions as prioritized
9. Monitoring and evaluations (on-going)

The above list shows the general categories of activities that will include many sub categories. An example would be number four “Strategic Planning”. This step provides for detailed planning for all activities of implementation. This activity will include:

- Reviewing of SS/MA study
- Implementation activities and timelines
- Assessment of resources
- M&E system design

It is expected that some from the current SS/MA team will be actively involved in all activities as listed above providing assistance during the course of the total programme.

7.3 Supports from IDE

The support from IDE will be in the following four main areas:

1. Orientation/Training – this will relate to the BDS market development paradigm as well as the subsector approach. This will be the initial capacity building effort. It will require 4 persons for 3 weeks or 45 person days.
2. Strategic Planning – this will be a 3 days session that will include the following efforts:
 - Review of SS/MA study for the Dairy subsector
 - Refinement of intervention designs
 - Develop M&E system
 - Implementation/Action Plan

This will require four persons for 4 days (1 day planning and 3 days session) to equal 16 person days

3. On-going backstopping – this will be technical assistance in implementing interventions on a regular basis. This will require eight person days per month for the first year. Level of effort for the second year will be determined at the end of year 1.

4. Monitoring and Evaluation – related activities will require that IDE take a mentoring role (as needed) as the facilitators perform the tasks. Expected level of effort for IDE is Baseline Survey – 20 person days, and for the 4 M&Es – 80 person days.

7.4 Policy and Enabling Environment Reform

Understanding that the MMWP programme is not in a position to address macro policy and law and order issues, it is proposed that these efforts be directed to those issues that directly affect the subsector being supported. From the SS/MA it was found that these issues fall into 4 major categories, these are:

1. Unethical business practices – such as adulteration of both milk and fine and aromatic rice
2. Security/theft – such as hi-jacking of transported milk and rice
3. Weak local governing – resulting in inadequate extension service, lack of infrastructure, and not addressing corrupt practices
4. Policy – for example that related to “dumping” of imported milk product, and tariffs for importing of processing machinery

The MMWP facilitator can lead the process of policy lobbying and advocacy through a Policy Workgroup Method modeled after an approach used by AFE in Botswana. The following briefly explains how this methodology works:

This model can be used to aid in developing an enabling environment for enterprises in the promotion of policy initiatives related to things like industrial development, trade/investment policy, financial sector development, and privatization. Its will rely on a mechanism of regularly-scheduled, issue-based workgroup meetings that cover all policy activities and that are attended by representatives of the private sector, NGOs, and the local government (as appropriate). These meetings are structured to foster an inter-organizational, collaborative, and participatory approach to the identification and resolution of key policy concerns. The facilitating institution uses funds to catalyze the workgroup activities, many of which are subsequently assumed, partially or wholly, by the participating organizations. The nurturing of this process becomes a significant achievement, and the cornerstone of the program’s success.

Three main elements of the methodology are:

1. Forming workgroups with selected organizations of the subsector comprised of private sector actors in the market chain, facilitation staff, government agencies, and others. The Facilitator will endeavor to assemble these groups within the local context. It is important that the members of the workgroup are chosen carefully – to include those people in the community who may have the needed clout to influence change.
2. Nurturing the process whereby the Facilitator: a) maintains regular contact with workgroup members; b) prepares well-planned meetings; c) produces and circulates detailed minutes; d) develop clear terms of reference for consultants undertaking workgroup commissioned studies; e) provide monitoring and follow-up of commissioned activities; f) engage workgroup members in active advocacy campaigns once issues are well researched. There is an important aspect of “ownership” that must be instilled in all members of the workgroup.
3. Use of Activity Sheets, these standardized forms, produced quarterly by the workgroup leaders, are used for each policy issue or member service being addressed. They provide a clear synopsis of: a) the activity; b) expected and actual impact; c) the implementation plan; d) the status; e) outstanding issues/ recommendations and; f) costs and contributors.

7.5 Monitoring and Evaluation

As a pilot effort, the programme will need to be continuously monitored for success in achieving stated goals and objectives. An initial baseline survey will need to be undertaken to provide a snapshot of the conditions facing the MSE/households farmers, and the market related to the

given subsector (dairy or fine and aromatic rice). Frequent evaluations will be made to determine impact of the households and on the markets at large.

The M&E work will begin with the establishment of relevant, measurable indicators. The indicators will relate to acquisition, use and benefit of BDS by MSEs, as well as indicators related to providers and their growth.

More times than not M&E activities are viewed as an imposition on time and manpower of the program, resulting in gain only to the donor who is merely interested in achieving targets in a cost effective manner. It is important for the facilitation staff to understand that the M&E process can also be an excellent management tool that can provide the Program with good information related to; clients' demographics (to aid in reaching special target groups), clients' satisfaction with the services, identifying new services, relevance of services provided, needs for more or less of the services provided, etc. The information can assist managers in planning specific short- and long-term activities, and the manner in which those activities are undertaken.

As earlier stated, due to the pilot nature of the program the monitoring effort will be ongoing and will be designed to be most useful in determining the status of the program in adhering to accepted methodology, and in achieving stated goals. The monitoring will be in two parts, 1) the internal subsector specific baseline and performance measuring that will be ongoing, and 2) mid-term and final evaluations that will most likely be done externally.

Performance Measurement Methodology

The BDS field has undergone a paradigm shift from a focus on the supply of subsidized services to a limited population, to a focus on the development of a vibrant BDS market for large numbers of MSEs. For many BDS suppliers that serve low-income populations or offer services for which it is challenging to recover costs, the vision of a competitive private sector market for services may seem far-fetched. However, more BDS suppliers are starting to become financially sustainable, some programs are making progress in stimulating private sector markets, and many BDS developers feel this is the direction in which the field needs to move.

Based on this paradigm shift, the Committee of Donor Agencies for Small Enterprise Development's Virtual Conference on Performance Measurement (1999), sponsored by the International Labor Organization and USAID, recommended an overarching Performance Measurement Framework (PMF) that is based on an analysis of the market for business development services. Thus, in the framework, performance goals and indicators are categorized according to whether they:

- Assess the overall BDS market;
- Assess BDS providers; or
- Assess BDS clientele-- MSEs.

At the same time, to accommodate more traditional ways of thinking about performance, each category is matched with an overall goal that BDS programs are typically trying to achieve:

- **Outreach**, meaning both the number of MSEs reached (scale) and the effort to provide services to people not served by existing **markets** (access);
- **Sustainability** of BDS **provider** institutions and the cost-effectiveness of program activities; and
- **Impact** on MSE **clientele**.

This framework, based on recommendations from BDS program facilitators around the world, focuses on an assessment that looks at the *attribution, use, and benefits* of business development services. This approach provides significant feedback to both the facilitators and BDS suppliers to help improve and sell services and gives information about the financial impact of business development services on MSEs.

Measuring of Impact using the proposed methodology will provide quantifiable information related to *acquisition, use, and benefits* of business development services. Indicators will be measurable and specific to each subsector.

The following shows some examples of the indicators that could be used to determine impact, market development and institutional status of the Facilitator, BDS providers and other actors in the supported subsectors, further details will be developed as a first step in the implementation process:

Monitoring of Facilitation

Tracking progress of planned activities

Impact and Market Development

- No. MSEs acquiring BDS
- No. MSEs using BDS
- No. MSEs benefiting from BDS
- No. Woman MSE reached
- Client Satisfaction
- No. BDS provider supported
- Increased production and sales of goods and services

Program Cost Effectiveness

- Program cost per MSE served
- Leverage ratio

Proposed M&E Schedule

It is suggested that the baseline begin as soon as possible as a start-up activity of the MMWP. The first performance measurement should be undertaken 4 months after the baseline, thereafter; performance measurement survey could be made every 4 months. An example of scheduling follows:

Baseline or intake information: Oct. 2002	Reporting of results: Nov 2002
First performance measurement: Feb 2003	Reporting of results: Mar 2003
On-going performance measurement: Jun 2003	Reporting of results: Jul 2003
External performance measurement: Oct 2003	Reporting of results: Nov 2003
On-going performance measurement: Feb 2004	Reporting of results: Mar 2004
Ongoing performance measurement: Jun 2004	Reporting of results Jul 2004
External performance measurement: Oct 2004	Reporting of results Nov 2004

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Validation Workshop Proceedings

The fine and aromatic rice subsector analysis market assessment has been carried out by IDE, APEX, HEED-Bangladesh and CARE during July 2002. The study site was assigned by DFID. APEX is involved in the fine and aromatic rice production as well as marketing challenges at Chirirbandar under Dinajpur district where DFID provide funding through PETRRA project.

In total 168 samples were processed from different supply chain members in this market assessment. In addition some business development providers and key informants were also interviewed during this process.

The fine and aromatic rice subsector analysis and market assessment study was conducted in 21st July 2002 through 27th July at Chirirbandar upazila under Dinajpur district. Total 13 members were involved in this study and extensively worked through the entire supply chain at Dinajpur and Chirirbandar. Later the findings were analyzed and presented to the members of the chain in a workshop. The venue had selected at CARITAS conference hall at Dinajpur sadar upazilla which roughly 20kms away.

A total of 33 value chain members as well as key informants were invited where only 16 people attained in this workshop.

The participants of the workshop were briefly oriented about the new BDS paradigm and then were presented the key constraints with three illustrative services:

- *Awareness raising addressing all aspects of general awareness relating to quality production and processing of fine and aromatic rice* addressing of general lack of awareness.
- *Develop Standard Practices For Production And Processing Of Fine Quality Rice Through Adoptive Research* addressing the constraint of lack of standard practice in both at production and processing of fine and aromatic rice
- *Creating market linkages for a sustained and stable demand* addressing the constraint of unstable demand due to poor linkages with major urban markets

The workshop was facilitated by the study team leader

The seven steps of Market Assessment questioners e.g. Market Access, Technology/Product Development, Management/Organization, Input/Supply, Finance, Policy, Operating Environment and Trade Association, which were followed in the survey was discussed and explained. All comments were documented chronologically.

1. Generally large and medium farmers in terms of land size are growing fine and aromatic rice in study area.
2. Small farmers are losing their interest due to lack of improved cultivation knowledge, lack of market access leading to less income potential
3. Risk involved in fine and aromatic rice production is higher than coarse rice because of the erratic demand and subsequently the price
4. The consumption of fine and aromatic rice in Dinajpur is very low therefore linkage with major urban markets as well as export market is extremely important.

5. Soil condition is critical for production of quality fine and aromatic rice, however, lack of awareness of soil testing arrangement or facilities makes it difficult for the farmers to gain higher and better yield
6. An ethical business practices for fine and aromatic rice processing is required particularly at the processors level to control adulteration and other quality issues.
7. Lack of appropriate government policy relating to fine and aromatic rice production and processing as well as lack of linkage amongst the GO, NGOs, and other research and educational institutions working on fine and aromatic rice
8. The export market for fine and aromatic rice is challenging due to high production cost compared to neighboring countries as well as poor quality of our rice
9. Government should develop a National Board on fine and aromatic rice that could take up all the issues relating to fine and aromatic rice and also work for the exploring export market.
10. The automatic mill because of their high capacity and volume requires more space compare to husking mill. Many mills do not have that facility at the moment.
11. A separate pest management program should be undertaken to look critically into the fine and aromatic rice subsector.
12. Department of Agriculture Marketing can also play a critical role in marketing fine and aromatic rice both at home and abroad.
13. Training, awareness building is a continues process and should address distinct areas of overall production of fine and aromatic rice, such, pre-cultivation, cultivation, harvesting, post harvesting, processing and storing
14. Department of Agriculture Extension (DAE) is the primary source of knowledge and information for the farmers, however due to various activities of the extension workers do not get those services when needed. DAE should change their extension approach in field level.
15. Agriculture Extension Supervisors (BS) are involve so many works in their jurisdiction. Even one BS reaches 2000 farmers in one block.
16. Use excess chemical fertilizer by the farmers leads to deterioration of the quality in terms of fineness and aroma of fine and aromatic rice. The farmers practice this to get higher yield.
17. Demising original variety, due to advent of high yielding (HYV) or modern variety (MV). The HYV and MV do not provide the right aroma and fineness of fine and aromatic rice.
18. About 90% of total fines rice are being produced and supplied from greater Dinajpur district.
19. Standard research findings might help to increase cultivable areas under fine and aromatic rice.
20. The demand of fine and aromatic rice decreasing due inadequate linkage with upstream market and India has also been explored their business in Bangladesh.
21. Good service as well as dedication is the only instrument that could minimize the market constraints. There are various forms of fine and aromatic rice market structures in the Bangladesh. This is probably because production, marketing and transportation risks are significantly lower under the vertically integrated market structure than other marketing forms.
22. In addition, most fine and aromatic rice is sold by farmers immediately after harvest because of farmers' need for cash and the lack of storage facilities. About 70% percent of the farmers sell their product in weekly markets ((Haat), and 30% percent of them sell directly to the Millers and large paddy traders. Farmers get price information from other farmers, neighbors, friends, traders and Whole seller.

List of Participants in the validation workshop:

Name of participant	Designation/ Occupation	Organization	Address
Shubodh Chandra Sircar	Research Assistant	APEX	Chirir Bander,Dinajpur
Aminur Rahman	Project Manager	CARE-Bangladesh	Dinajpur
Md. Akhteruzzaman	Deputy Director	Department of Agriculture Extension(DAE)	Dinajpur
Md. Abdur Rab	Upazilla Agriculture Officer	DAE	Chirir Bander,Dinajpur
M.A. Quddus	Managing Director	Sarwar Automatic Rice Mill	Mahmudpur,Pulhat, Dinajpur
Md. Taslim	Rice Whole seller		Chirir Bander,Dinajpur
Md. Nurul	Paddy Traders	Nurul Traders	Chirir Bander
Shahin	Paddy Traders		Amarpur,Chirir Bander
Imran	Processor	M/s.Motafa Husking Mill	Amarpur,Chirir Bander
Mamun	Processor	M/s. Shahjahan Husking Mill	Amarpur, Chirir Bander
Suman	Processor	M/s. Shahjahan Husking Mill	Amarpur, Chirir Bander
Tauhidur	Rice Traders	M/s. Haji Traders	Basudevpur, Chirir Bander
Md. Abdul Latif	Producer /Farmer		Chirir Bander
Ismail Hossain	Producer / Farmer		Vial, Chirirbander
Md. Nazmul Haque	Paddy Traders	M/s. Nila Traders	Basudevpur, Chirir Bander
Md. Basir Uddin	Producer / Farmer		Kherkathi,Chirir Bander

Sample Questionnaires

Subsector: **FINE AROMATIC RICE**
 ACTOR: **FINE AND AROMATIC RICE PRODUCER**

Questionnaire for Subsector Analysis

Respondent: Mr. XYZ	Date: 22/07/2002
Location: Uchitpur, Punati Union	Enumerator: ABC
Chirirbandar, Dinajpur	Time in Business: More than 10 years
Telephone: Not Applicable	
Type of Business: Agriculture Farming	Number of Employee: Paid 2 Unpaid 2

Describe your business operations: (land holdings, no. of cows, volume of sold, price, etc.)	
<p><i>Mr. Habibur Rahman is a fine and aromatic rice grower in Chirrirbandar. He has a small farmer land of approximately 600 decimal. fine and aromatic rice is cultivated in 150 decimal; He primarily cultivates Badsha-bhog and Philippine Katari variety. The average yield of these two varieties are about 1,160 Kg per 100 decimals. Last year's market price of Philippine Katari was between Tk 350 – 425 per 40 Kg. He normally sells the total production to the local market. For input he uses limited chemical fertilizer and uses his own preserved seed.</i></p>	
MARKET ACCESS 1. To whom do you sell your product? (who, what, where, when, how-for most questions) Generally sells fine and aromatic rice to paddy traders at Panchabari Bazaar (about 3kms away) from his farm. Most of traders in the bazaar come from Dinajpur Sadar. He sells about 70% of the fine and aromatic rice right after the harvesting period and rest a month or two latter for better price.	Services that Address constraints/ Opportunities
2. Is there a strong demand for your product or service? (justify) <i>Generally the demand for fine and aromatic rice is quite high. However, last year the demand for fine and aromatic rice paddy was extremely low due to low demand of rice in the urban markets. The price generally fluctuates with the amount of harvest in a particular season.</i> Constraint/ Opportunity: <i>Lack of sustained demand due to lack of diversified market and lack of proactive marketing initiatives in the urban and export markets</i>	<i>Provide appropriate linkage with diversified urban and export markets and initiate proactive marketing and promotional activities</i>
3. If demand is strong, what is preventing buyers from buying more or given a better price? <i>Control of rice market by a few large traders who dictates the price. These traders also quite often adulterates coarse rice with fine and aromatic rice thus making the demand for fine and aromatic rice low or the consumers do not want to pay for poor quality rice.</i>	<ul style="list-style-type: none"> • <i>Providing easy access to processing facilities to small farmers and traders and promoting standard business practices through encouraging competition</i> • <i>Developing appropriate quality assurance mechanism and creating</i>

<p>Constraint/ Opportunity</p> <ol style="list-style-type: none"> <i>Lack of easy access to appropriate and affordable processing facilities because of control of fine and aromatic rice processing plants by a few large processors thus making the small farmers and traders de-motivated</i> <i>Prevalence of adulteration in fine and aromatic rice at processors' level leading to poor demand</i> 	<p><i>awareness on benefits of quality control</i></p>
<p>4. How do you determine the price for your goods and services?</p> <p>Market determines the price. Sometimes price vary due to quality and there are sometimes scope for bargaining. But eventually one has to give-in to the rate most of the dictation of the traders. I have an approximate calculation of per kg cost which hardly varies even if the yield is higher. To get higher yield, higher input is also required which roughly comes to the same. Due to low input requirements, the sales price meets the cost incurred for production</p> <p>Constraint/Opportunity</p> <ol style="list-style-type: none"> <i>Lack of alternative market or market linkages</i> <i>Prevalence of control of market by the large Processors/Traders of the market. It is difficult for the producer to negotiate prices with wholesales.</i> <i>Lack of collective bargaining power of the farmers to negotiate price</i> 	<p><i>Forming SMEs association and developing capacities to create direct market linkage with the urban markets.</i></p>
<p>5. What do you do to promote the sale of your product or service?</p> <ul style="list-style-type: none"> <i>Don't do much of promotion work, mainly rely on personal contact, the traders know the quality producers</i> <i>Attending bazaars (Panchabari Hat rice market) regularly gives me a good understanding of the market situation and I also get to know the traders.</i> <p>Constraint/Opportunity</p> <ul style="list-style-type: none"> <i>Lack of adequate knowledge and scope for marketing and promotion.</i> 	<p><i>Developing skills and capacities of the SMEs in identifying alternative markets, forecasting demands, packaging, transportation, promotion, and coordination with the traders</i></p>
<p>TECHNOLOGY/PRODUCT DEVELOPMENT</p> <p>1. What kind of machines, equipment and /or tools do you use and why?</p> <p>Mostly the traditional equipments, such as manual plough, sometimes power tiller, land leveler, yoke, sickles, drum for threshing, winnowing tools such as "kula"- winnowing equipment, gunny bag, weighing machine, basket etc.</p> <p>Constraint/Opportunity:</p> <p>Farmer does not have adequate knowledge on improved technologies and farming systems for better production of fine and aromatic rice</p>	<p>Services that Address constraints/ Opportunities</p> <p><i>Developing awareness on appropriate technologies for fine and aromatic rice cultivation</i></p>
<p>1. Is there equipment that you know of that would improve your business? (if yes, explain)</p> <p>Automatic or –semi automatic threshing machine with winnowing system.</p> <p>Constraint/Opportunity:</p> <p><i>Financial inability, price information and Lack of operating knowledge (product</i></p>	<p><i>Facilitating easy access to capital and working capital through linkage with financial markets and credit providers appropriate to fine and aromatic rice production and processing</i></p>

<p>demonstration).</p>	
<p>3. What have you done recently to improve your product or service (for those who produce a particular product)?</p> <p><i>Used higher proportion of organic fertilizers, but organic fertilizers is costly and is rarely available. I also contacted the local BADC (a government seed and other input supplying company) for improved high yielding varieties of fine and aromatic rice, but could not fine</i></p> <p>Constraint/Opportunity:</p> <p><i>Lack of availability of organic fertilizers and necessary inputs especially seed</i></p>	<p><i>Develop and stimulating appropriate private sector actors on organic fertilizers, improved seed for fine and aromatic rice production highlighting the demand and market size</i></p>
<p>4. What technical skills do you use in the business?</p> <p><i>I have been using the knowledge and practices of my early generation and also the local neighboring farmers, I often seek information from the block supervisors (Government Agricultural Extension Workers) on better yield of fine and aromatic rice, however, the information are not much helpful. I use chemical fertilizer in certain proportion (usually about 40%-50%), cultivate slightly late (but late cultivation is often difficult since my fine and aromatic rice land is in the middle of other coarse rice land, and can not take my power tiller through the already grown coarse rice field) so that I get better yield and a better market price.</i></p> <p>Constraint/Opportunity:</p> <p>Lack of availability of appropriate knowledge and information on fine and aromatic rice cultivation leading to low productivity.</p>	<p><i>Developing awareness addressing on appropriate cultivation methods and practices for better yield including post harvesting and processing</i></p>
<p>5. What new skills do you need to improve your business?</p> <p>Want to know information how to grow better fine and aromatic rice with better yield and better market price</p> <p>Constraint/Opportunity:</p> <p>Lack of availability of appropriate knowledge and information on fine and aromatic rice cultivation leading to low productivity.</p>	<p><i>Facilitating awareness campaign on appropriate cultivation methods and practices for better yield including post harvesting and processing</i></p>
<p>MANAGEMENT/ORGANIZATION</p> <p>1. Do you manage all aspects of your business? If no who manage what?</p> <p>My son helps me in the field, I also hire labor during cultivation and harvesting period to assist farming for both coarse and fine and aromatic rice, my wife, my son's wife and daughter along with labor and we (son and I) do the processing. I go the market for sales of rice, purchase of inputs my son helps me.</p> <p>Constraint/Opportunity:</p>	<p>Services that Address constraints/ Opportunities</p>
<p>2. What can you do better manage your business?</p> <p>He is generally satisfied with the present management skills, particularly with the scale</p>	

of production and land size.	
<p>3. What management skills would you like to acquire to enhance your business?</p> <p>He is generally satisfied</p> <p>Constraint/Opportunity:</p>	
<p>INPUT SUPPLY</p> <p>1. What raw materials do you use?</p> <p>Seed, Chemical fertilizer, Cow dung, Pesticide, Irrigation (supplementary).</p>	
<p>2. Where do you obtain your raw materials or merchandise?</p> <ul style="list-style-type: none"> • <i>Seed: from own source and some time collect from local market</i> • <i>Chemical Fertilizer, pesticide from Local Amtali Bazar.</i> • <i>Cow dung: from own source.</i> 	
<p>3. Are there constraints to get them? Explain.</p> <ul style="list-style-type: none"> • <i>Raw materials are available in local market but the sometimes the quality of the inputs are very questionable</i> • <i>Organic fertilizers are not available even the local market.</i> <p>Constraint/Opportunity:</p> <ul style="list-style-type: none"> • <i>Prevalence of non-quality inputs especially fertilizer and pesticides</i> • <i>Lack of product (input) knowledge of the local small retailers</i> • <i>Lack of availability of organic fertilizers and pesticides</i> 	<ul style="list-style-type: none"> • <i>Developing awareness on quality inputs for fine and aromatic rice cultivation</i> • <i>Developing capacities, provide knowledge and information on products and their appropriate usage</i> • <i>Stimulating private sector actors highlighting the demand and market size</i>
<p>4. Have you ever purchased raw materials together with other business? Explain.</p> <ul style="list-style-type: none"> • <i>No, the farmers buy according their need and capacity as well as their won time. We, however, never tried strictly in the sense that you are suggesting, but it may be difficult to coordinate and manage. But it certainly sounds beneficial</i> <p>Constraint/Opportunity:</p> <p><i>Absence of productive collaboration among farmers leading to poor bargaining power and loss of potential bulk discount in terms of buying inputs, and sales of fine and aromatic rice and paddy, gain access to financial markets, etc..</i></p>	<p><i>Facilitating the formation of farmers' group</i></p>

<p>FINANCE</p> <p>1. Where do you go when you need money from your business?</p> <p><i>Friends/neighbors and relatives. The interest rate is generally low, repayment schedule is often flexible, it is easier to make them understand the difficulties, and are generally available in time of need. Sometimes difficult to collect large amount. When necessary the village money lenders are also looked for but their interest rates are generally higher. Getting money in the right time for the NGOs are difficult, the amount sometimes do not meet requirements, their interest rate high and repayment schedule is very strict and also one has to attend their weekly meetings, and may other issues that I do not have much interest. This I feel is a loss of time and energy. Every meeting would take almost half of days work. Banks do not entertain small farmers, it is difficult to get credit from banks, one need to have especial relationship with the manager or might go through an influential person to reach them.</i></p> <p>Constraint/Opportunity:</p> <p>Lack of easy access to NGO and formal credit institutions especially applicable for small farmers. The loan repayment schedules are not appropriate for farming or agriculture.</p>	<p><i>Facilitating easy access to capital and working capital through linkage with financial markets and credit providers appropriate to fine and aromatic rice production and processing</i></p>
<p>2. What trading arrangements do you have with your buyers/sellers (credit, transport etc.)?</p> <p>Do not have any trading arrangement with buyers. The traders often come to me when the harvest is good. All the transactions are conducted strictly on cash basis, because of the erratic market demand and price, the traders like spot purchase than forward purchase. We need to carry the products to the market or to the processors (who may often buy the product). Transportation is paid by us.</p> <p>Constraint/Opportunity:</p> <p>Some intermediates (Paddy traders) collect fine and aromatic rice from Produce yard on credit.</p>	
<p>POLICY</p> <p>1. Are there any policies or regulations that are beneficial to business like yours?</p> <p><i>DAE do not give priority to fine and aromatic rice, they could have special cell or people who might work for fine and aromatic rice</i></p>	
<p>2. Are there any that are constraints to business like yours?</p>	
<p>3. What policies or regulations do you think are needed to support business like yours?</p> <ul style="list-style-type: none"> • Government should take initiative to control the fertilizer market during pick period, and look into the quality aspects • Government should reduce the price of fertilizers especially for the small farmers • Government should have open up purchase centers for purchasing fine and aromatic rice at a given rate <p>Constraint/Opportunity:</p>	

<p>OPERATING ENVIRONMENT</p> <p>1. What are the biggest constraints that your business (or those who buy from or sell to you) faces in areas such as roads, electricity, water, telephone, communication, warehouse, marketplaces, etc.?</p> <ul style="list-style-type: none"> • Warehouse/Storage as well as good easy to access market place. The market should be safe from hijackers and provide security to the buyers and sellers. The timing of the rice market is very difficult; it starts at 4 O'clock in the morning. At the moment we need to start at 2:30 in the morning to reach their in time, it is very insecure in the streets carrying valuable products, and cash. <p>Constraint/Opportunity:</p> <ul style="list-style-type: none"> • <i>Lack of organized market shed for trading fine and aromatic rice (paddy) and within easy accessibility of the farmers</i> • <i>Lack of adequate storage facilities results in sales of fine and aromatic rice by the farmers' and traders' during the harvesting season at a lower cost</i> • <i>Prevalence of hijacking and looting of fine and aromatic rice particularly during transportation</i> 	<ul style="list-style-type: none"> • <i>Provide market shed facilities within easy reach of the farmers in appropriate time</i> • <i>Provide storage and warehouse facilities for preservation of fine and aromatic rice</i> • <i>Improve security during transportation to the from the market</i>
<p>2. In your view what can be done to address these problems?</p> <ul style="list-style-type: none"> • <i>Government should provide market space and storage for the farmers in every Unions</i> • <i>Government should increase security systems</i> 	<ul style="list-style-type: none"> • <i>Stimulating private sector to provide storage and warehouse facilities as a business</i> • <i>Advocacy for strengthening law enforcement, social mobilization for law and order restoration, promotion of good governance</i>
<p>TRADE ASSOCIATIONS</p> <p>1. Do you belong to any network or association?</p> <ul style="list-style-type: none"> • No, there are no associations <p>2. What are the main functions and benefits of the association?</p> <ul style="list-style-type: none"> • <i>Not applicable</i> 	
<p>Overall what would you say are the major constraints to running your business?</p> <ol style="list-style-type: none"> 1. <i>Lack of sustained demand affecting adequate price</i> 2. <i>Prevalence of non-quality inputs especially fertilizer and pesticides</i> 3. <i>Lack of availability of quality seed</i> 4. <i>Lack of availability of organic fertilizers and pesticides</i> 5. <i>Lack of organized market shed for trading fine and aromatic rice (paddy) and within easy accessibility</i> 6. <i>Prevalence of hijacking and looting of fine and aromatic rice particularly during transportation</i> 7. <i>High cost of input materials</i> 	

List of Key Informants

Sl	Name	Designation	Address
01	Md. Khairul Islam	Plant Protection Specialist	DAE, Khamarbari Dinajpur
02	Md. Rabiul Hassan	District Marketing Officer	District Marketing office Shuihari, Kalitola Dinajpur
03	Dr. M,A Bashar	Chief Scientific officer	GRS section BRRI, Gazipur
04	F. H Choudhury	Convenor	Bangladesh Rice Export Association Apt # S-7, 7 th Floor House # 34, Park Plaza Banani, Dhaka
05	Shaheed H Shamim	Director	Prabartana Limited 2/8 Sir Syed Road Mohammad pur Dhaka -1207
06	Md. Mozaffor Hossain	Manager	Rajshahi Krishi Unnoyon Bank Chiribondor, Dinajpur
07	Mokbul Hossain Sardar	Manager	Janata Bank Chiribondor Dinajpur

Sample Key Informant Profiles

Profile: 1

Name of the Business/ Organization: Bangladesh Rice Exporters Association

Name and Title of Respondent : F.H. Chowdhury (Khokon)
Convenor

Address : Apt # S-7, 7th Floor, Park Plaza
House # 34, Road # 17
Banani, Dhaka.

Telephone : 9886440, 017-523081

E- mail : bpdl@cittechco.net

Overview of the activities of the Organization

This organization started its operation since 1994. The association is recognized by the Ministry of Food. They disseminate information from Export Promotion Bureau . The association controls the quality of rice and make sure whether the rice is hygienically processed and packed. They coordinate with the market actor for rice production and develop strong demand among them.

Specific Activities Related to Sub-sector

- It has collaboration with Barendra project through which they produce required fine quality rice for export market.
- They have extension work specifically for fine rice and they also have leading role in determining the price of fried rice.
- They doesn't face any kind of embargo from Government side to export rice.

Constrains/ opportunities related to the sub-sector

Constraints:

- Usage of chemical fertilizer specially in aromatic rice production has negative impact on standard of fineness and aroma of rice.
- Local transportation is not always available. Even if it is available Transportation of such a high value product is not always secure.
- Raw materials are available but milling the paddy has always been a huge problem.
- Government hasn't take any initiative to expand the export market.

Opportunities:

- It has the capability to produce standard quality fine and aromatic rice.
- Huge demand for quality fine rice from international market. The market for glutinous rice has also been expanded.
- It has the capability to produce more fine rice in accordance with international standard and demand.

- ❑ This market has been initiated through personal intervention so there is a possibility for private sector to emerge as exporter and link the local market with more diversified international market.

Interventions to address constraint in the sub-sector

- ❑ Use of chemical fertilizer should be stopped in aromatic rice production.
- ❑ Transport facility should be increased involving private sector.
- ❑ Law enforcing agencies need to capacitate themselves to provide security to the traders during the transportation of fine and aromatic rice.
- ❑ Milling facilities need to be upgraded to meet the international standard.
- ❑ Government need to take imitative for promoting fine rice export.

Referrals

- ❑ Hazi Shahazad
Badamtoli Aratdar Association
Dhaka
Ph# 9128495 (R)

- ❑ Aminul Islam
Director
Fine Rice production
Barendra Project
Rajshahi
Ph# 0721-761163

Profile: 2

Name of the Business/ Organization: Department of Agriculture Marketing

Name and Title of Respondent : Md. Rabiul Hassan
District Marketing Officer, Dinajpur.

Address : District Marketing Office
Suihari, Kalifala
Dinajpur

Telephone : 0531-64607

Overview of the activities of the Organization

- Regularly Collect market price of agricultural products from producers, Pikar, Retailers based on this assessed price trend prepare reports.
- Collect price rate of consumer goods (rice , oil, salt and pulse etc), prepare a comparative price trend statement and send it to DC office and ministry.
- Collect production cost of seasonal crops like paddy, vegetable, pulse, oil seeds and collect price rate from the grass root market and broadcast it through radio program.
- Market Development through SOGRIP and NCDP project. Maximum utilization of potato and its storage status.
- Assist private sector/ GO/ NGO to provide information on agricultural product and its price trend.

Specific Activities related to Sub-Sector

- Collect fine rice costs
- Regularly Collect market price of fine rice from producers, Pikar, Retailers based on this assessed price trend prepare reports.
- Send district reports on Fine rice production and price information to head office to disseminate information to traders.

Constrains/ opportunities related to the sub-sector

Constraints:

- Less local demand
- Due to previous stock millers hasn't bought fine rice from the farmer this year that impacted on selling price.
- Very less quantity of local consumption of fine rice and weak linkage to broader market.
- No fine rice export policy.

Opportunities:

- Lot of automatic rice mill in Dinajpur, so it is possible to produce quality fine rice without losing the standard size of rice.
- There are 4-5 paddy market or hat for rice from where procuring fine rice is easy for traders.
- Geographical condition is suitable for fine rice cultivation.
- Farmers can grow two or more crop just before or after cultivation of fine rice.

Interventions to address constraint in the sub-sector

- ❑ Provide export facility and encourage exporter to strengthen their linkage with fine rice market abroad.
- ❑ Encourage private sector processor who will process and pack rice in an interesting pack ensuring the quality and use brand name of rice for local and international consumption.
- ❑ Make quality seed available to the farmer.

Referrals

S,K traders
Rail Bazaar
Dinajpur

Profile: 3

Name of the Business/ Organization: Bangladesh Rice Research Institute

Name and Title of Respondent : Dr. M.A Bashar
GRS Section

Address : GRS,
BRRI
Gazipur

Overview of the activities of the Organization

- Germ plasm collection, characterization, evaluation, utilization and finally conservation.
- Breeder seed production and maintenance.
- Seed technology and research.

Specific activities related to sub-sector

- Evaluation of fine rice and find out the adaptability of species to certain soil type.
- Trying out fine rice production in different part of Bangladesh and select the variety which is called adaptability trial.
- Selection of good quality seed and disseminate all over Bangladesh.

Constraints/ Opportunities related to sub-sector

Constraints

- Yield is very low
- Available variety is not being cultivated properly, farmers are trying chemical fertilizer to increase yield which effecting in aroma.
- Milling of fine rice is posing as a major problem, breakage of grain is resulting in substandard quality.
- As the yield of fine rice per bigha is vary low and has to produce in organically so farmer are less interested to grow this variety as they don't get the comparative price advantage.

Interventions to address constraint in the sub-sector

- Crossing modern variety to have high yield.
- Searching for new variety which has high demand in world market
- Explore new markets for popular fine rice variety.

Referrals

Mr. Rafiqul Islam
Agriculture Economic Division
BRRI, Gazipur

FINE RICE SUB-SECTOR ANALYSIS
Respondents List
Chirir Bandar, Dinajpur

Name of Respondent	Address		Respondent	Category
	Vill	Union		
MD. TOFFAJJAL	ABDUL PUR	ABDUL PUR	MALE	INPUT
EZZMUL HAQUE	POLHAT	ABDUL PUR	MALE	PROCESSOR
MD. NURUJJAMAN	ABDUL PUR	ABDUL PUR	MALE	PROCESSOR
MR. TOHIN SARKER	CHIRIR BANDAR	ABDUL PUR	MALE	PROCESSOR
MD. A. RAHIM	CHIRIR BANDAR	ABDUL PUR	MALE	PRODUCER
MD. JASIM UDDIN	CHIRIR BANDAR	ABDUL PUR	MALE	PRODUCER
MONIRUJJAMAN	ABDUL PUR	ABDUL PUR	MALE	PRODUCER
AMOL KUMAR	BORO BANDAR	ABDUL PUR	MALE	RETAILER
RATHAN KUMAR DUE	ST.ROAD	ABDUL PUR	MALE	RETAILER
MD. KOISAR ALI	CHIRIR BANDAR	ABDUL PUR	MALE	TRADER
RAHIM UDDIN	BANDHABPUR	ABDUL PUR	MALE	TRADER
BASARAT ALI	RANIRBONDOR	ABDULPUR	MALE	INPUT
AGA KHAN	SHIKHPURA	AMARPUR	MALE	PROCESSOR
GOLAM MOSTAFA	AMARPUR	AMARPUR	MALE	PROCESSOR
MD. MOZAHAR ALI	MOHADANI	AMARPUR	MALE	PROCESSOR
ROJAT BOSHAK	NAYANPUR	AMARPUR	MALE	PROCESSOR
ABU BAKKAR SIDDIK	BASUDABPUR	AMARPUR	MALE	PRODUCER
MD ABDUR RASID	BASUDABPUR	AMARPUR	MALE	PRODUCER
MD. ASHRAT ALI	BASUDABPUR	AMARPUR	MALE	PRODUCER
MD. HABIBUR RAHAMAN	AMORPUR	AMARPUR	MALE	PRODUCER
MD. MOSLAUDDIN	AMORPUR	AMARPUR	MALE	PRODUCER
MD. NAZMUL HAQUE	BASUDABPUR	AMARPUR	MALE	PRODUCER
MD. TAUHID	BASUDABPUR	AMARPUR	MALE	PRODUCER
MONIRUDDIN	AMORPUR	AMARPUR	MALE	PRODUCER
MONTAZ	ANORPUR	AMARPUR	MALE	PRODUCER
WAJED	BASUDABPUR	AMARPUR	MALE	PRODUCER
ABDUR RASIR	AMTOLI	AMARPUR	MALE	TRADER
ERSHAD ALI	AMARPUR	AMARPUR	MALE	TRADER
MD. A. LATIF	LAXMIPUR	AMARPUR	MALE	TRADER
MD. SHIRAJUL HAQUE	AMARPUR	AMARPUR	MALE	TRADER
AMJAD HOSSAIN	BUSHIRBANDER	AULIAPUKUR	MALE	INPUT
ATAUR RAHAMAN	BABUR BAZAR	AULIAPUKUR	MALE	INPUT
MD. AZIZUL ISLAM	GOLAHAR BAZAR	AULIAPUKUR	MALE	INPUT
ABDUR RAHAMAN	ALIAPUKUR	AULIAPUKUR	MALE	PROCESSOR
APPLE HOSSAIN	NORTOMONDOL	AULIAPUKUR	MALE	PROCESSOR
H.M RAHAMAN	JOGODOL	AULIAPUKUR	MALE	PROCESSOR
A. KAFA	SUDIPPUR	AULIAPUKUR	MALE	PRODUCER
A. KALAM	JAGADISHPUR	AULIAPUKUR	MALE	PRODUCER

MIZANUR RAHAMAN	SHACKHAT	DINAJPUR SADAR	MALE	PROCESSOR
SHARIFUR RAHAMAN	POLHAT	DINAJPUR SADAR	MALE	PROCESSOR
ASIM GHOSH	BAHADUR BAZAR	DINAJPUR SADAR	MALE	RETAILER
Montu	BAHADUR BAZAR	DINAJPUR SADAR	MALE	RETAILER
RABONDRANATH DAS	BAHADUR BAZAR	DINAJPUR SADAR	MALE	RETAILER
KRISNA GOPAL	FARM HAT	DINAJPUR SADAR	MALE	TRADER
MAHABUL ISLAM	FARM HAT	DINAJPUR SADAR	MALE	TRADER
MD. KOBAD ALI	FARM HAT	DINAJPUR SADAR	MALE	TRADER
ASHIM KUMAR	RAILBAZAR HAT	DINAJPUR SADAR	MALE	W/SALER
MOHESH PROSAD	CHALK BAZAR	DINAJPUR SADAR	MALE	W/SALER
MR. RAJJAK	RAILBAZAR HAT	DINAJPUR SADAR	MALE	W/SALER
SREE PROSANTO	BASUNA PUTTY	DINAJPUR SADAR	MALE	W/SALER
ATAUR RAHAMAN	RAMPUR	NASRAT PUR	MALE	PRODUCER
DEZEL	NASRAT PUR	NASRAT PUR	MALE	PRODUCER
JOYNAL ABEDIN	NASRAT PUR	NASRAT PUR	MALE	PRODUCER
MD. BELAL	NARAYANPUR	NASRAT PUR	MALE	PRODUCER
MOJAMMEL	RANIPUR	NASRAT PUR	MALE	PRODUCER
MONSER ALI	KUMUDIA	NASRAT PUR	MALE	PRODUCER
MD. NADIV UDDIN	ATAR BAZAR	PUNATTI	MALE	INPUT
A. BASHER	SHARSHATIPUR	PUNATTI	MALE	PRODUCER
A. LATIF	BASUDABPUR	PUNATTI	MALE	PRODUCER
A. SUYEM	BHATINA	PUNATTI	MALE	PRODUCER
BABUL HOSSAIN	BRANMPUR	PUNATTI	MALE	PRODUCER
FERAJ UDDIN	CHACH MASHA	PUNATTI	MALE	PRODUCER
JOYNAL ABEDIN	CHACH MASHA	PUNATTI	MALE	PRODUCER
KHALED HOSSAIN	KURANJI	PUNATTI	MALE	PRODUCER
MD. AJHARUL	JAGADISHPUR	PUNATTI	MALE	PRODUCER
MD. AZIZUL HAQUE	HAZRAT PUR	PUNATTI	MALE	PRODUCER
MD. MOZHAR ALI	NARAYANPUR	PUNATTI	MALE	PRODUCER
MD. SAIFUL ISLAM	CHACH MASHA	PUNATTI	MALE	PRODUCER
MOKSED ALI	CHACH MASHA	PUNATTI	MALE	PRODUCER
MOSTAFA	SHARSHATIPUR	PUNATTI	MALE	PRODUCER
ROSTAM ALI	SHARSHATIPUR	PUNATTI	MALE	PRODUCER
SREE BORAJ CHANDRA	UCHILPUR	PUNATTI	MALE	PRODUCER
SREE GOPIN	SHARSHATIPUR	PUNATTI	MALE	PRODUCER
WAJEDUL HAQUE	UCHILPUR	PUNATTI	MALE	PRODUCER
ESHAMUL HAQUE	AMBARI	PUNATTI	MALE	TRADER
MD. A. ISLAM	CHACH MASHA	PUNATTI	MALE	TRADER
MD. A. MANNAN	PACHBARI	PUNATTI	MALE	TRADER
MD. A. MAZED	AMTOLI	PUNATTI	MALE	TRADER
MD. A. RAHAMAN	AMTOLI	PUNATTI	MALE	TRADER
MD. RASEDUL KARIM	AMTOLI	PUNATTI	MALE	TRADER
MD. S. HOSSAIN	AMTOLI	PUNATTI	MALE	TRADER
RAKIB SARKER	AMBARI	PUNATTI	MALE	TRADER
IQRAMUL	AMBARI	PUNATTI	MALE	W/SALER
AYNUL HAQUE	NASRAT PUR	SAIDPUR/SAIDPUR	MALE	RETAILER

JALIL SARKAR	CHRIR BANDAR	SAIDPUR/SAIDPUR	MALE	RETAILER
A. QASEM	OMARPHAIL	SAINTARA	MALE	PRODUCER
CHANDAR MOHAN	DONDOL	SAINTARA	MALE	PRODUCER
KAMAL SHIKDER	SAYADPUR	SATNALA	MALE	INPUT
LUTFAR RAHAMAN	ISAMOTI	SATNALA	MALE	PRODUCER
LUTFAR RAHAMAN	SATNALA	SATNALA	MALE	PRODUCER
MD. RAMJAN ALI	GHONTHAGOR	SATNALA	MALE	PRODUCER
RAM PRASAD	ISAMOTI	SATNALA	MALE	PRODUCER
RABIUL ISLAM	BUSHIRBANDER	TETULIA	MALE	INPUT
RASHIDUL ISLAM	BUSHIRBANDER	TETULIA	MALE	INPUT
VOBANI SARKER	BUSHIRBANDER	TETULIA	MALE	INPUT
GONPTI ROY	GONDAL	TETULIA	MALE	PRODUCER
KOMOD CHANDRA	GONDAL	TETULIA	MALE	PRODUCER
SOLAYMAN	TETULIA	TETULIA	MALE	PRODUCER
HORENDRANATH	GANGATARI	TETULIA	MALE	TRADER
MONJUR ALAM	RAILBAZAR	TETULIA	MALE	TRADER
MUTIAR RAHMAN	RANIR BONDOR	DINAJPUR SADAR	MALE	RETAILER
NAZI ABDUL GONI	RAIL BAZAR	SAIDPUR	MALE	W/SALER
MOSTAFA FARID	NUTONBORAPARA	SAIDPUR	MALE	INPUT

Annex – 6

Map of Chiribandar, Dinajpur

DINAJPUR



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