# Master File
# On
# Polder 22
# Blue Gold Program
# Khulna

**Prepared By**
**Shusanto Roy**
**Business Development Coordinator**
**Blue Gold Program**
**Khulna**

# Table of content

## Acronyms

| | |
|---|---|
| BADC | Bangladesh Agriculture Development Cooperation |
| BARI | Bangladesh Agriculture Research Institute |
| BINA | Bangladesh Institute of Nuclear Agriculture |
| BRRI | Bangladesh Rice Research Institute |
| BWDB | Bangladesh Water Development Board |
| CO | Community organizer |
| DAE | Department of Agriculture Extension |
| DAM | Department of Agriculture Marketing |
| DLS | Department of Livestock Services |
| DoC | Day Old Chick |
| DoF | Department of Fisheries |
| FAO | Food and Agriculture Organization |
| FFS | Farmer Field School |
| FFSO | Farmer Field School Organizer |
| FGD | Focus Group Discussion |
| HYV | High Yielding Variety |
| IRRI | International Rice Research Institute |
| KII | Key Informant Interview |
| KU | Khulna University |
| LCS | Labor Contract Society |
| MFI | Micro Finance Institute |
| NGO | Non Government Organization |
| SaFaL | Sustainable Agriculture, Food Security and Linkage |
| UP | Union Parishad |
| UZ | Upazila |
| WFC | World Fish Center |
| WMA | Water Management Association |
| WMG | Water Management Group |
| WMO | Water Management Organization |

# 1. Introduction

The Blue Gold Program establishes and empowers community organizations to sustainably manage their water resources and based on their priorities, delivers the services for which those community organizations have expressed a demand.

Overall objective of the Program is:

"To reduce poverty by creating a safe living environment and a sustainable socio-economic development for 150,000 household living on the 160,000 ha of polders."

## 1.1 About the master file

Master file is an official document of Blue Gold Program. It contains all polder related information's which can be used for any source of information. All Blue Gold people can use the master file for their activities and it will be help to clear Component – 4 modes of activities.

The purpose of this master file is to provide all the necessary information for the polder 22 to design component-04 strategy including polder development plan (PDP), Value chain identification, analysis and value chain development considering the local context. This master file provides a sound understanding the opportunities and existing practice of the producers, HHs present status, production system, input and output market situation, infrastructures, communications, geographical location, human resources, value chain actors and their function in practice, identify the weakness of the services, scope for strengthening in the system at the polder area in a win-win situation. This master file will enable component-04 to design a program in which an optimal combination of quick wins and longer term interventions are combined.

## 1.2 Objective

- ❑ Prepare master file a Source of information.
- ❑ Any Blue Gold people can know about Component – 4 activities.
- ❑ If Polder development plan need any clarification then Master file will solve the understanding clearly.

## 1.3 Data collection process

- ❑ Key Informant Interview (KII)
- ❑ Focus Group Discussion (FGD)
- ❑ Secondary data like- DAE, DLS, DOF, Union Parisad etc reports.
- ❑ Field observation.
- ❑ Market visit and Validation of collected information from relevant sources.

## 2. Polder Definition:

Polders are major interventions in the southern region of Bangladesh. It is a protective structure that provides benefits to the production system and livelihoods. "Polder" is a Dutch term, meaning a reclaimed landmass with engineering intervention to grow more food by protecting coastal land from saline intrusion caused by tidal flooding.

Generally Polder is a low lying land that has been reclaimed and is protected by dikes.

Polder is a tract of lowland reclaimed from a body of water, often the sea, by the construction of dikes roughly parallel to the shoreline, followed by drainage of the area between the dikes and the natural coastline. Where the land surface is above low-tide level, the water may be drained off through tide gates, which discharge water into the sea at low tide and automatically close to prevent re-entry of seawater at high tide. To reclaim lands that are below low-tide level, the water must be pumped over the dikes. If a sediment-laden stream can be diverted into the polder

area, the sediment may serve to build up the polder bottom to a higher level, thus facilitating drainage. Soil in areas newly reclaimed from the sea contains so much salt that most plants will not grow. Procedures for ridding the soil of salt, therefore, must be used along with dike and draining to develop agriculturally productive land.

## 2.1Polders situation at a glance at Khulna

In Khulna around 20 Polder had been established in 1960-1970 by Water Development Board.

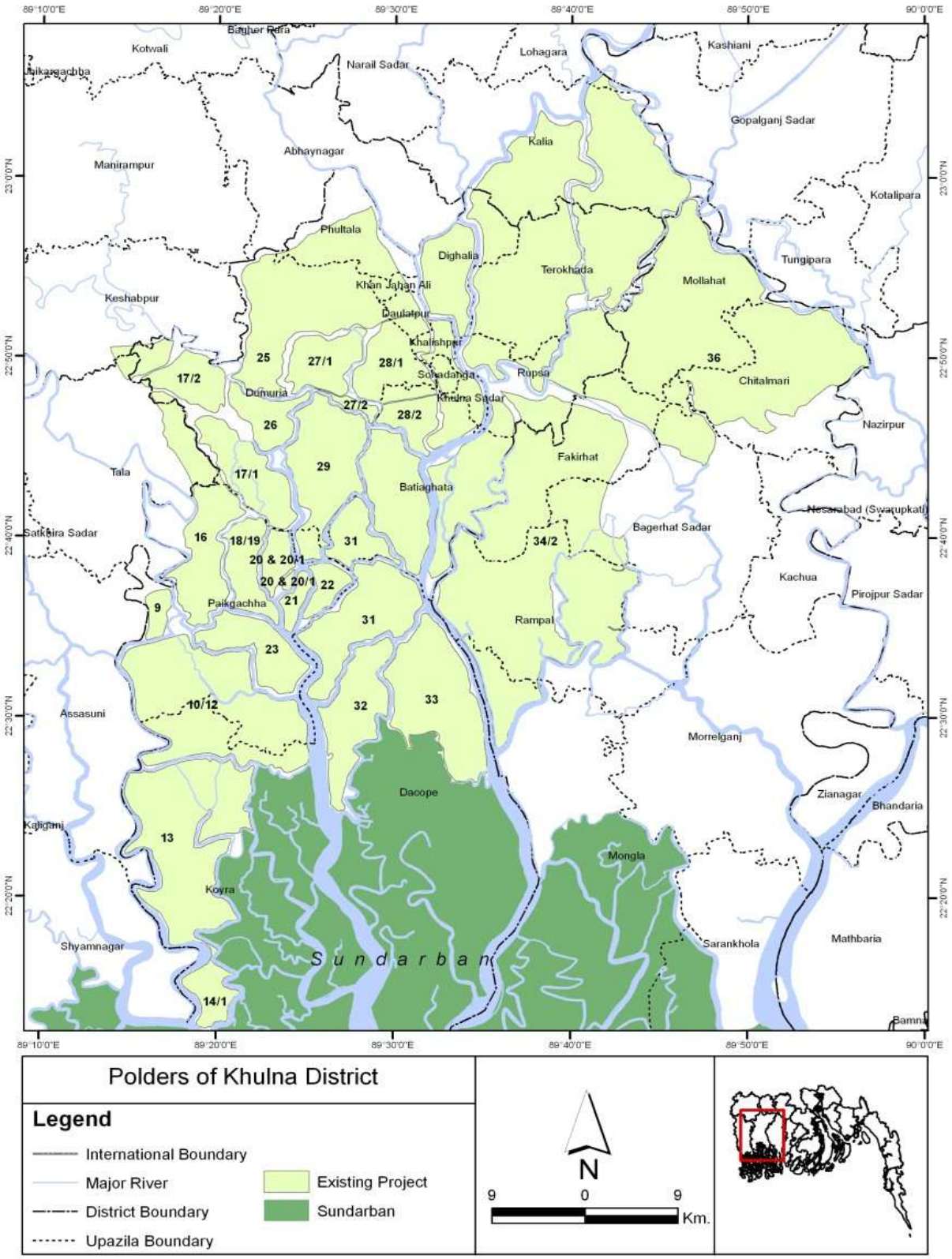
| Polder No. | Upazila | Gross Area | Net Area | No. OF WMA | No. Of WMG | Regulator | Flashing Inlet | Drain Channel |
|---|---|---|---|---|---|---|---|---|
| **22** | **Paikgacha** | **1630** | **1417** | **1** | **12** | **4** | **48** | **0** |
| **30** | **Batiaghata** | **6396** | **4048** | **1** | **41** | **21** | **3** | **37** |
| **31 Part** | **Batiaghata** | **4848** | **4048** | **-** | **-** | **9** | **2** | **29** |
| **29** | **Batiaghata & Dumuria** | **8218** | **6570** | **2** | **56** | **13** | **11** | **20** |
| **26** | **Dumuria** | **2696** | **2100** | **-** | **-** | **4** | **0** | **18** |

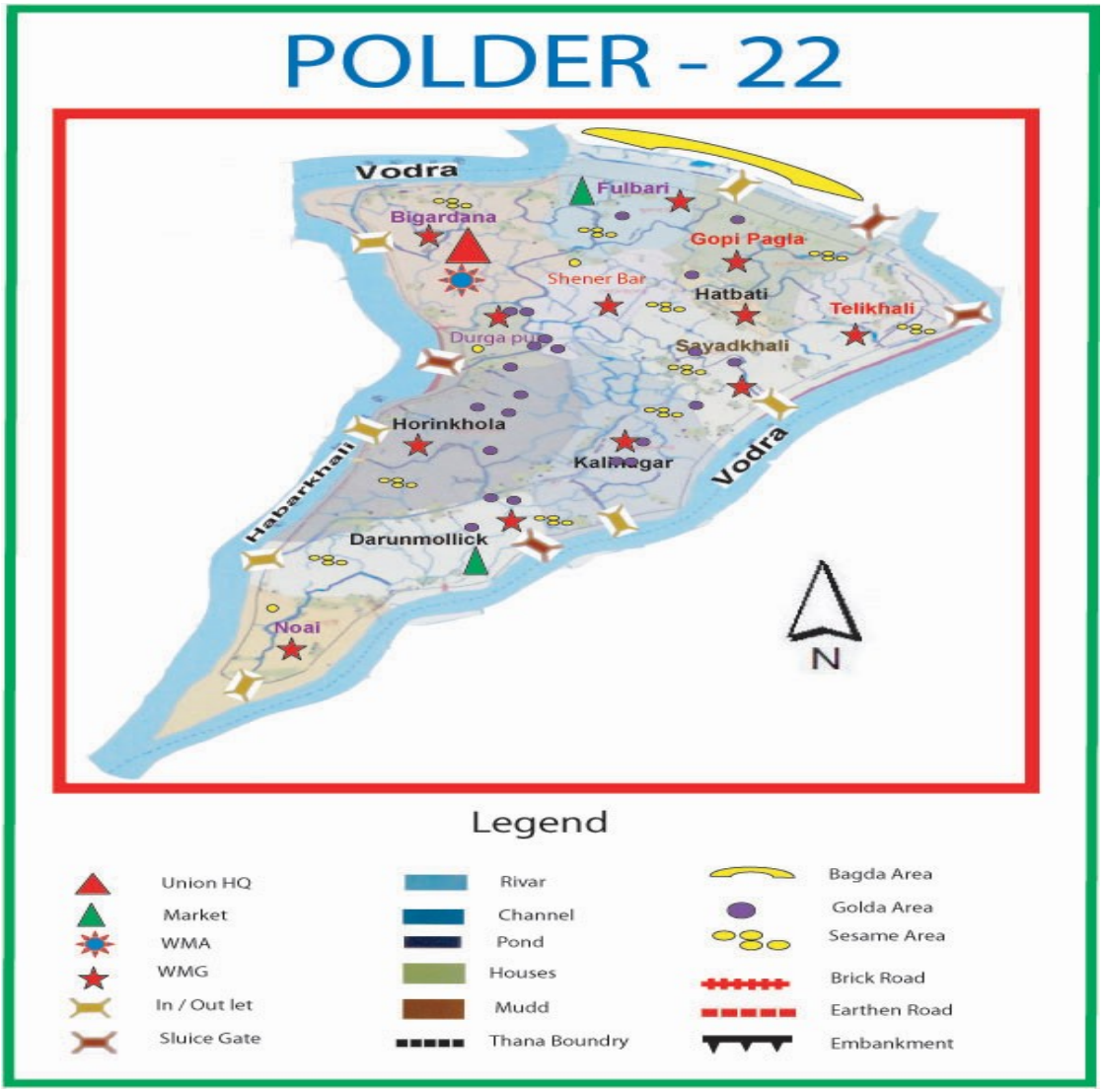
Source: Blue Gold Program Document.

While these have contributed significantly in enhancing food production in the initial decades, they are now gripped in second generation problems, both social and environmental. Major problems are……

- ❑ Siltation of river and Canals
- ❑ Week Drainage
- ❑ Water logging
- ❑ Soil and Water salinity
- ❑ Land use conflict

## 2.2 All Polder in one Map






## 2.3 Map of polPolder 22

# 3 Description of polder 22

## 3.1 Geographical location

Polder 22 is one of nine polders belonging to the District of Khulna under Paikgacha Upazila. Polder 22 is situated in Deluti union. Deluti union has 19 mouza (11 Mouza are within the Polder) which is equal 24 villages and polder 22 contains only 12 villages. It is 12 km from Paikgacha Upazila head quarter, 18 km from Batiyaghata upazila head quarter and 30 km from Khulna divisional Head quarter. The Deluti Union is the only Union in this Polder. The polder north and northwest side is surrounded by Bhadra, Part of Northwest is Mora Bhadra, Northeast and south are Badurgachi and West is by Haborkhali river.

## 3.2 General statistics

A. Area: The polder 22 is about 1630 ha and embankment length is 20 Km.

B. Climate:

Polder 22 is humid during summer and pleasant in winter. Polder 22 has an annual average temperature of 26.3 °C (79.4 °F) and monthly means varying between 12.4 °C (54.3 °F) in January and 34.3 °C (93.7 °F) in May. Annual average rainfall is 1809.4 millimeters (71.2 in). Approximately 87% of the annual average rainfall occurs between May and October.

C. Natural Resource:

Land and water

Total land area is 1630 hectares and among those net cultivable area is 1417 hectares is cultivable in the polder area[Source- BG Program Document]. People drinking rain water and pond water but salinity problem is acute during winter (February to May). Therefore, some villagers purchase pure drinking water from

Gaoghora village. Water suppliers sell water 25 to 30 liter for 30 taka. It depends on distance and road infrastructure.

## D. Human resource:

| Topic | | |
|---|---|---|
| Number of HH | 2054 | As per DAE (2132 as per C-1) |
| Total Ares | 1600 | |
| Cultivable area | 1500 | |
| Literacy Rate | 32.6 | |
| Total Road | 28 km | Earthern-18 km, Brick-7 km, Pucca- 3 km |
| Road density | 0.0105 | Road length per ha |

Source: DAE

## E. Village wise Population:

| Sl.# | Village Name | Population | Average HH No. | Average HH size |
|---|---|---|---|---|
| 1 | Bigordana | 778 | 197.00 | 3.90 |
| 2 | DarunMollik | 937 | 242.00 | 3.90 |
| 3 | Durgapur | 390 | 98.00 | 4.00 |
| 4 | Fulbari | 670 | 184.00 | 3.60 |
| 5 | Gopipagla | 513 | 134.00 | 3.80 |
| 6 | Hatbaria | 549 | 141.00 | 3.90 |
| 7 | Horinkhola | 1353 | 328.00 | 4.10 |
| 8 | Kalinagar | 1029 | 226.00 | 4.50 |
| 9 | Noai | 590 | 143.00 | 4.10 |
| 10 | Sayedkhali | 614 | 161.00 | 3.80 |
| 11 | Senerber | 299 | 78.00 | 3.80 |
| 12 | Telikhali | 722 | 147.00 | 4.90 |
| | | 8444 | 2079.00 | 48.30 |

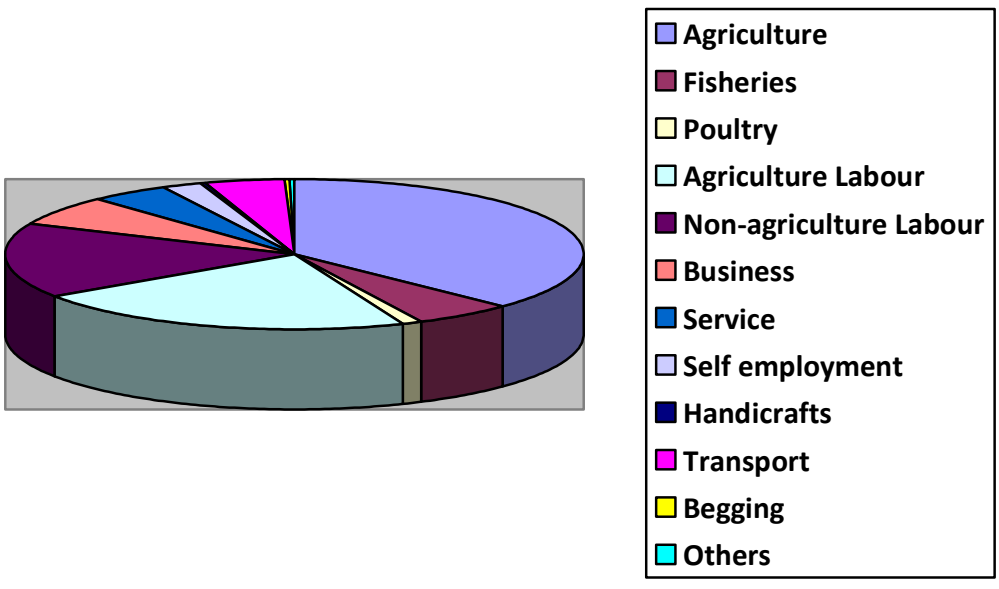
Source: BBS

## F. Occupation:

### HH Main Source of Income

| | | 22 | |
|---|---|---|---|
| | | No. | % |
| Household main income source | Agriculture | 792 | 37.1 |
| | Fisheries | 124 | 5.8 |
| | Poultry | 23 | 1.1 |
| | Agriculture Labour | 458 | 21.5 |
| | Non-agriculture Labour | 344 | 16.1 |
| | Business | 139 | 6.5 |
| | Service | 96 | 4.5 |
| | Self employment | 44 | 2.1 |
| | Handicrafts | 4 | 0.2 |
| | Transport | 95 | 4.5 |
| | Begging | 5 | 0.2 |
| | Others | 8 | 0.4 |
| | Total HH | 2132 | 100% |

Source: Componant-1 HH Survey Report



**G. Fuel using for Cooking:**

| Cooking Fuel | % |
|---|---|
| Wood | 36.5 |
| Kerosene | 0.6 |
| LPG/Gas | 0.4 |
| Straw/ Leaf/ Cowdung | 62.4 |
| Bio gas | 0.1 |
| Total | 100 |

Source: FAO

H. Source of Drinking Water:

| Main source of drinking water | |
|---|---|
| Tap | 1.3 |
| Tube well | 86.1 |
| Pond | 12 |
| River/ Ditch/Canel | 0 |
| Others( Rain Water/ Well/ | 0.6 |
| | 100 |

Source: FAO

I. Sanitation:

| Type of Toilet | |
|---|---|
| Sanitary with Water sil | 30.50% |
| Sanitary without Water sil | 30.07% |
| Non- Sanitary | 36.2 |
| Open Space | 2.6 |

Source: FAO

## J. Average HH Coasting Head in %

| Sl.# | Costing Head | % |
|---|---|---|
| 1 | Food and Beverage | 62.96 |
| 2 | Clothing and Footwear | 6.88 |
| 3 | Gross rent, Fuel & Lighting | 14.69 |
| 4 | Furniture, Household Equipment & Operation | 2.7 |
| 5 | Medical care and health expenses | 2.79 |
| 6 | Transportation & Communication | 2.98 |
| 7 | Education, Recreation & cultural Services | 3.2 |
| 8 | Miscellaneous Goods and Services | 3.8 |
| | Total | 100 |

Source: KII

## K. Market Information:

| Name of the Hat | | Fulbari Hat | Darun Mallik Noai bazar |
|---|---|---|---|
| Foundation Year | | 1997 | 2004 |
| Village | | Fulbari | Darun Mallik |
| Post Office | | Shurkhali | Darun Mallik |
| Union | | Deluti | Deluti |
| Market Type | | Wholesale cum Retail | Primary / Retail |
| Total Market Area ( Decimal) | Govt. Covered | 25 | 0 |
| | Govt. Open | 25 | 0 |
| | Total(A) | 50 | 0 |
| | Pvt. Covered | 20 | 0 |
| | Pvt. Open | 30 | 0 |
| | Total( B) | 50 | 0 |
| | Grand Total (A+B) | 100 | 0 |
| Number of stalls,sheds & Shed area(in SFT) | Shed No. | 2 | 0 |
| | Shed Area | 1000 | 0 |
| | Agri stall | 24 | 20 |
| | Non-agri | 18 | 30 |

Source: DAM & KII

## L. All Markets inside the polder and Outside the Polder

| Sl# | From | To | Distance(Km) | Remarks |
|---|---|---|---|---|
| 1 | Fulbari Bazar | Baro ariya Bazar | 1 | Outside Polder 22 |
| 2 | Fulbari Bazar | Darun Mollick bazaar | 9 | Inside Polder 22 |
| 3 | Fulbar Bazar i | Mailmara bazaar | 10 | Outside Polder 22 |
| 4 | Fulbar Bazar i | Batiyaghata bazaar | 18 | Outside Polder 22 |
| 5 | Fulbari Bazar | Sonadanga bazaar | 30 | Khulna city |
| 6 | Fulbari Bazar | Rupsa bazaar | 33 | Khulna city |
| 7 | Fulbari Bazar | Baro bazar | 34 | Khulna city |

## M. Average HH Picture

| Sl.# | Income source | Large Farmer | Income | Marginal Farmer | Income |
|---|---|---|---|---|---|
| 1 | Land size (Ha) | 4.31 | 10000 | 0.80 | 2000 |
| 2 | Vegetable garden (Dec) | 5 | 1000 | 2 | 400 |
| 3 | Pond size (Dec) | 25 | 6000 | 5 | 200 |
| 4 | Scavenging bird/Poultry farm | 200-300 | 8000 | 4-5 | 200 |
| 5 | Others | | | | 2200 |
| | Total | | 25000 | | 5000 |

Source: KII

## N. Agricultural Machinery:

In Polder 22 there is 42 Power tiller. 24 From Food and Agriculture organization and 18 are private.

In polder area at Fulbari hat there are 5 workshops where light repairing and maintenance services are available. There are some parts or equipments also available for sale.

Usually power tiller light maintenance has done here but major maintenance like engine overhauling has done in Khulna.

3 General information

## 3. A. Agriculture

### a) Input Market Information

| Sl. # | Crop | Number of Input Seller | | | Remarks |
|---|---|---|---|---|---|
| | | Fulbari bazar | DarunMollick bazar | Baro Ariya(Outside Polder) bazar | |
| 1 | Rice | 1 | 0 | 2 | Seed, Fertilizer & Pesticide |
| 2 | Sesame | 1 | 0 | 1 | Seed, Fertilizer & Pesticide |
| 3 | Mungbeen | 1 | 0 | 1 | Seed, Fertilizer & Pesticide |
| 4 | Vegetables | 1 | 0 | 10( Mobile seed seller-08) | Seed, Fertilizer & Pesticide |

Source: KII

### b) Production situation

i) Major Crops (Cereals)

T. Aman: HYV (80-85%), LIV (15-20%) and Aromatic in a minor percentage of land. Varieties grown are HYV (BR-32,33,52,49,23 etc ) LIV (Marij Shail, Zoto Balam , Chap Shail , Kumra goir ,Shada Mota etc) Aromatic ( Benapol , Rani Slute , Chini Kanai etc).

T. Aus: Not grown in Polder.

Boro: grown in negligible area of land with fish. Land is not mentionable.

Spices: Onion, Garlic, Chili, Ginger, Turmeric etc.

Oil Crops: Major Sesame, Mustard, Sunflower etc.

Pulses Crops: Major Mugh, Khesari etc.

Tuber Crops: Potato, Turnip, Radish etc.

Fruits: Water Melon, Banana, Jujube, Papaya etc

ii) Major Crops(Vegetables)

Vegetables: Besides different types winter and summer vegetables are grown in the Polder namely

Winter: Okra, Kohlrabi, Country Bean, Amaranthus, Brinjal, cabbage, Sweet Gourd, String Bean, Bottle Gourd, Cauliflower, Tomato, Spinach, Ridge Gourd, White Gourd, Bitter Gourd, Cucumber, etc

Summer: Elephant Foot, Indian Spinach, Dram stick etc mainly in the homestead.

iii) Major Cropping Pattern

| Sl.# | Cropping Pattern | Total Net Area(ha) | %NCA |
|---|---|---|---|
| 1 | Fallow - Fallow - T-Aman | 538.866 ha | 38.03% |
| 2 | Sesame –Fallow- T-Aman | 634.413 ha | 44.78% |
| 3 | Mung bean- Fallow- T-Aman | 78.542 ha | 5.54% |
| 4 | Sweet gourd –Fallow- T-Aman | 14.048 ha | 0.99% |
| 5 | Watermelon- Fallow- T-Aman | 31.578 ha | 2.22% |
| 6 | Potato- Fallow- T Aman | 113.765 ha | 8.030% |

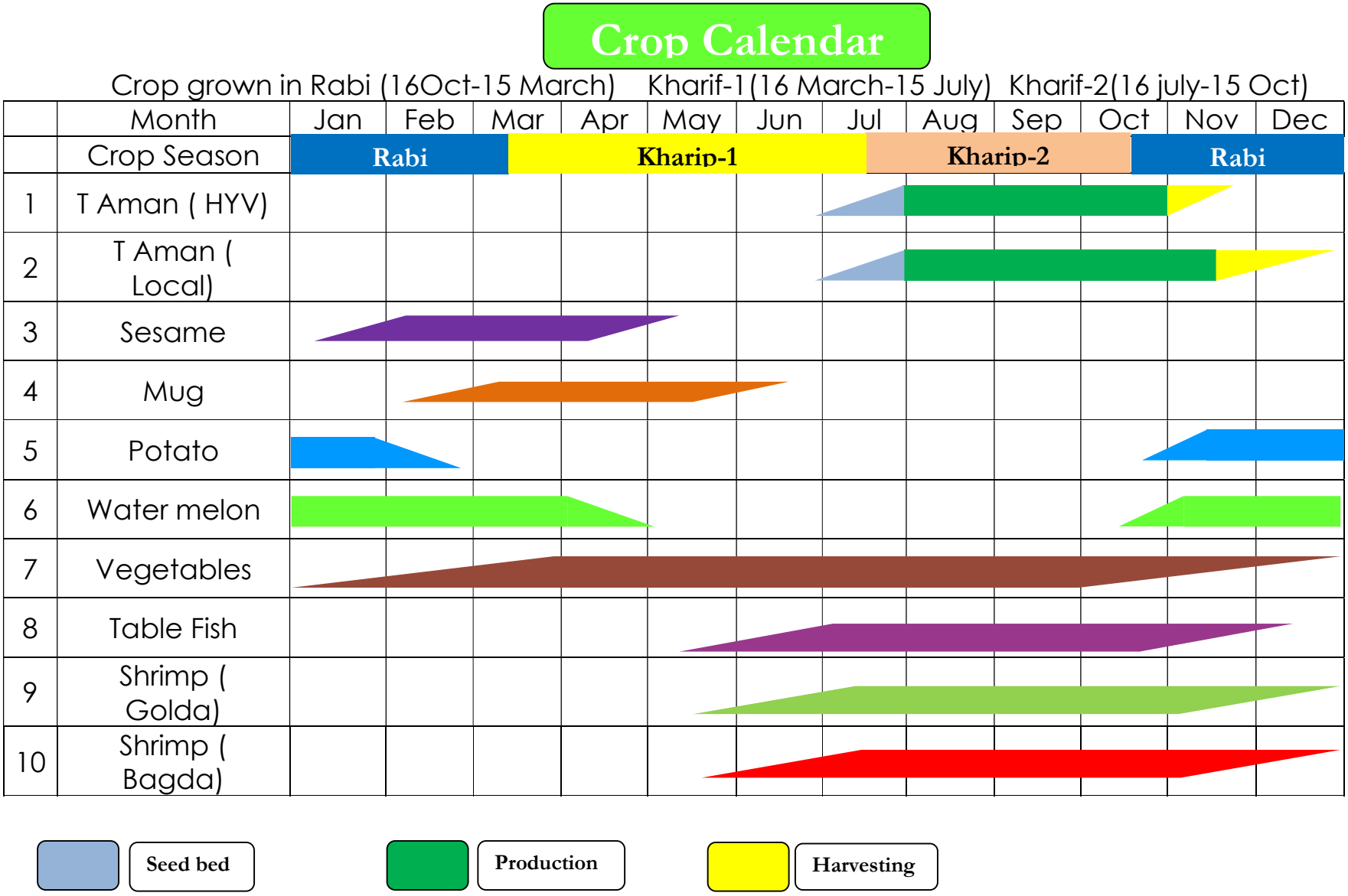
Source: Componant-2 Cropping pattern and Irrigation Water Requirement Report

### iv. Average Land Use Type

| Land Use Type | Average Decimal | Total Decimal |
|---|---|---|
| Household land | 121.5 | |
| Homestead & Fruit Garden | 13.4 | |
| Pond & Ditch | 7.9 | |
| Cultivable land | 100.2 | |

Source: Component -1 HH Survey Report

**v) Crop Calendar**



vi) Farmers Category

| Type | % | Farmers No. |
|---|---|---|
| Land less Farmer(0-0.02ha) | 10.03 | 206 |
| Marginal Farmer(0.02-0.2ha) | 29.99 | 616 |
| Small farmer(0.2-1ha) | 40.02 | 822 |
| Medium Farmer(1-3 ha) | 15 | 308 |
| Large Farmer(<3ha) | 4.97 | 102 |
| | | 2052 |

Source: DAE

vii) Household Income from Agri. Activity

| Sl.# | Source of Income | % | Remarks |
|---|---|---|---|
| 1 | Rice | 30 | |
| 2 | Sesame | 35 | |
| 3 | Vegetables | 18 | |
| 4 | Fish | 10 | |
| 5 | Egg/ Meat | 4 | |
| 6 | Others | 3 | |

Source: KII & FGD

viii) Production Area

1. Field Crops:

| Sl.# | Crop | Area (ac) | Area (ha) | Rabi | Kharif-1 area | Kharif-2 area |
|---|---|---|---|---|---|---|
| 1 | Sesame | 1567 | 609.73 | | 609.73 | - |
| 2 | Mugh | 194.457 | 78.7275 | | 78.727 | - |
| 3 | T. Aman | 2866.09 | 1160.36 | - | - | 1160.36 |
| 4 | Water Melon | 77.906 | 31.5409 | | 31.54 | - |

Source: Componant-2 Cropping pattern and Irrigation Water Requirement Report

2. Vegetables:

| Sl.# | Crop | Area (ac) | Area (ha) | Rabi | Kharif-1 area | Kharif-2 area |
|---|---|---|---|---|---|---|
| 1 | Amaran | 13.361 | 5.40931 | 5.41 | - | - |
| 2 | Bitter Gourd | 3.7 | 1.49 | 1.49 | - | - |
| 3 | Bottle Gourd | 18.02 | 7.297 | 1.747 | 5.55 | - |
| 4 | Cabbage | 6.372 | 2.57976 | 2.58 | - | - |
| 5 | Cauliflower | 5.138 | 2.08016 | 2.08 | - | - |
| 6 | Chili | 10.677 | 4.32073 | 4.16 | 0.16 | - |
| 7 | Country Bean | 1.85 | 0.74899 | 0.75 | - | - |
| 8 | Cucumber | 1.62 | 0.659 | 0.499 | 0.16 | - |
| 9 | Long Y Bean | 4.1 | 1.66117 | 1.331 | 0.33 | - |
| 10 | Oal copi | 32.56 | 13.1849 | 11.5 4 | 1.64 | - |
| 11 | Okra | 14.21 | 5.75423 | 5.75 | 0.33 | 0.16 |
| 12 | Palong | 4.111 | 1.66437 | 1.664 | - | - |
| 13 | Potato | 281.408 | 113.93 | 113.93 | - | - |
| 14 | Pumkin | 21.994 | 8.90445 |  | 8.9 | - |
| 15 | Radish | 7.605 | 3.10607 | 3.106 | - | - |
| 16 | Ridge Gourd | 3.48 | 1.411 | 1.081 | 0.33 | - |
| 17 | Shalgam | 1.644 | 0.66559 | 0.6655 | - | - |
| 18 | Snake Gourd | 0.205 | 0.083 | - | 0.083 | - |
| 19 | Snake Gourd | 0.205 | 0.083 | - | 0.083 | - |
| 20 | Spinach | 3.77 | 1.686 | 1.526 | 0.16 | - |
| 21 | Tomato | 13.977 | 5.6587 | 5.658 | - | - |
| 22 | White Gourd | 1.42 | 0.5764 | 0.1664 | 0.41 | - |

Source: Componant-2 Cropping pattern and Irrigation Water Requirement Report

ix) Average Production and Gap

| Sl.# | Crops | Yield (Ton/ Ha) | | Yield (Gap Ton/Ha) |
|---|---|---|---|---|
| | | Present Yield | Good Farmer Yield | |
| 1 | Rice | 4.790 | 5.5 | 0.71 |
| 2 | Sesame | 0.958 | 1.376 | 0.418 |
| 3 | Mung | 0.958 | 1.376 | 0.418 |
| 4 | Sweet gourd | 14.38 | 20 | 5.62 |
| 5 | Okra | 8.5 | 14 | 5.50 |
| 6 | Egg Plant | 15.9 | 50 | 34.10 |
| 7 | Chili | 1.37 | 4 | 2.63 |
| 8 | Bitter gourd | 9.87 | 20 | 9.56 |
| 9 | Tomato | 9.87 | 60 | 41.06 |

Source: FAO

x) Land Type:

| Sl.# | Land type | % |
|---|---|---|
| 1 | High land | 2 |
| 2 | Medium High Land | 75 |
| 3 | Low land | 15 |
| 4 | Medium Low Land | 8 |

Source: DAE

## c) Output market information

i) Use of Market: There are two market/ haat/ bazaars in the polder area:

1. Fulbari Bazar (Market day: Friday): Main product: Paddy. (Other products as well)

2. Darun Mallik Noai Bazzar (Market day: Monday): All commodities buying and sales-small scale.

Nearest big market outside polder: Baroariya hat.

ii) Presence of Fariya, Bapari and Agent

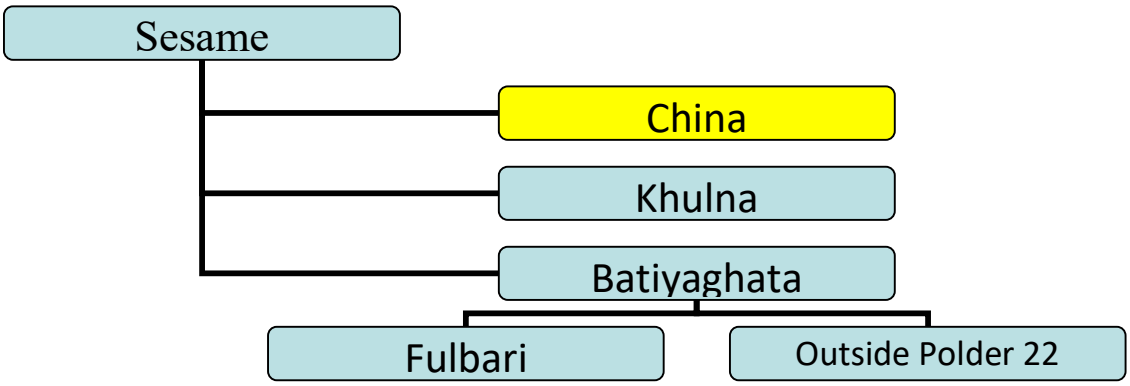
| Sl.# | Crop | Market actors Number | | Remarks |
|---|---|---|---|---|
| | | Fulbari bazar | Darun Mollick bazar | |
| 1 | Rice | 25(8) | 0 | Faria/ Bepari/ Agent |
| 2 | Sesame | 5 | 0 | Faria/ Bepari/ Agent |
| 3 | Vegetables | 12(7) | 2 | Faria/ Bepari |
| 4 | Fish | 12 | 3 | Sub Depot |
| 5 | Poultry | 7(5) | 1 | Faria/ Bepari |

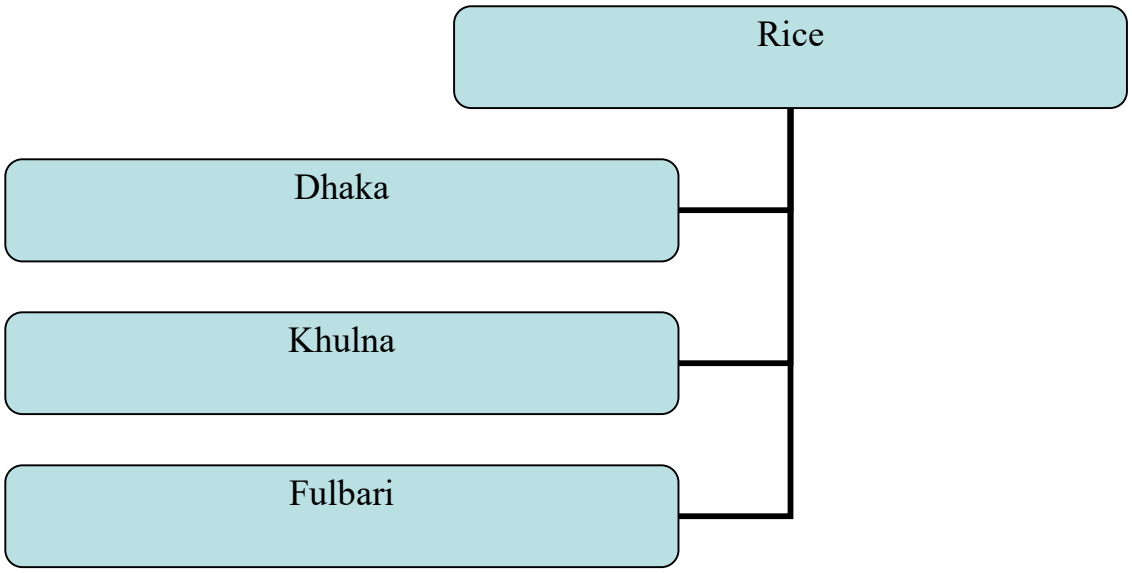
[Numbers in First Bracket are based in Polder area]

iii) Price Difference

| Sl.# | Product | At Fulbari | At Khulna | Gross Margine |
|---|---|---|---|---|
| 1 | Rice | 680 Tk/Mound | 730 Tk/ Mound | 50 Tk/ Mound |
| 2 | Egg | 5.80 Tk/Piece | 6.80 Tk/ Piece | 1 Tk/ Piece |
| 3 | Sesame | 1600 Tk/ Mound | 1750 Tk/ Mound | 150 Tk/ Mound |
| 4 | Drumstick | 40 Tk/ kg | 55 Tk/Kg | 15 Tk/Kg |
| 5 | Sweet gourd | 10 Tk/ kg | 15 Tk/Kg | 5 Tk/Kg |

iv) Market Hierarch






v) Product Sold in Polder markets

| Sl.# | Product | Fulbari bazar | Darunmollick bazar |
|---|---|---|---|
| 1 | Rice | 100% | 0 |
| 2 | Sesame | 15% | 0 |
| 3 | Egg | 30% | 10% |
| 4 | Drum Stick | 50% | 0 |
| 5 | Leafy Vegetables | 80% | 25% |
| 6 | Fish | 25% | 25% |

## 3. B.Livestock & Poultry

Bangladesh is rich in farm animal (cattle, buffalo goat, sheep, horse, pig, chicken, duck, geese & pigeon) genetic resources. The proportion of improved cattle in the country is still found less than 3% and the number of is also very low. Goat, sheep and poultry farm

was established at the district level for producing improved breed and the supply of these to the farm level. The number was found still insignificant. In polder area there is a high degree of inequality for land holdings, but a low degree of inequality for livestock holdings. The distribution of indigenous breed is less unequal than the distribution of improved breeds. There is a possibility of improvement in rural income distribution with an increase in investment for indigenous livestock development. The landless and small farm holdings own the highest percentage of poultry; sheep and goats. While the medium and large farms possess significant percentage of cattle and the improved breeds of poultry. Thus, the investment in small ruminant and poultry species will greatly help generate employment and income for the rural poor and thus improve livelihood.

i) Input Market Information

| Sl.# | Product | Input Seller | | |
|---|---|---|---|---|
| | | Fulbari bazar | DarunMollick bazar | Baro Ariya bazar(Outside Polder) |
| 1 | Poultry Feed | 3 | 0 | 3 |
| 2 | Day Old Check | 3 | 0 | 1 |
| 3 | Medicine | 3 | 1 | 3 |

ii) Production Situation

❑ Poultry

| Sl.# | Poultry Bird | Number | % |
|---|---|---|---|
| 1 | Scavenging bird folk size | 1 | 6.6% |
| 2 | Scavenging bird folk | 2 | 6.8% |

| | | | |
|---|---|---|---|
| | size | | |
| 3 | Scavenging bird folk size | 3 | 6% |
| 4 | Scavenging bird folk size | 4 | 3.8% |
| 5 | Scavenging bird folk size | 5 | 2.6% |
| 6 | Scavenging bird folk size | 6+ | 5.4% |
| 7 | Scavenging bird folk size | None | 68.8% |

Source: Component-1 HH Survey Report

- Cattle:

| Sl.# | No. of Cattle | Number | % |
|---|---|---|---|
| 1 | No. of Cattle | 1 | 3.2% |
| 2 | No. of Cattle | 2 | 4.8% |
| 3 | No. of Cattle | 3 | 3.4% |
| 4 | No. of Cattle | 4 | 1.2% |
| 5 | No. of Cattle | 5 | 1.6% |
| 6 | No. of Cattle | 6+ | 2.4% |
| 7 | No. of Cattle | None | 82.8% |

Source: Component-1 HH Survey

- Commercial Farms information

| Sl. # | Subject | Number | Remarks |
|---|---|---|---|
| 1 | No. Of Commercial Poultry Farmer | 100 | |

| | | |
|---|---|---|
| 2 | Average Egg Production | 300 |
| 4 | Average Scavenging bird Folk size | 5-6 |
| 5 | Paravet | 5 |

Source: KII & FGD

iii) Output Market Information

Marketing channels are composed mainly of the private marketing intermediaries, virtually without any government regulations, who handle the marketing system of livestock and livestock products in Polder area. Many middlemen/traders are involved in the process of livestock marketing. The marketing of livestock and livestock products are characterized by poor and unhygienic market places, unorganized traders, absence of grading, and lack of information, seasonality in demand and price variation. The marketing of livestock products has remained underdeveloped for a long time.

The small holders in polder 22 rear livestock produce livestock products and sell them in the weekly local markets and also district markets and bapari. Milk and egg marketing is mostly carried out in an unorganized manner. Polder dwellers sell their eggs in the weekly local markets and also district markets and bapari from inside and outside polder.

| Sl.# | Product | Market actor | | Remarks |
|---|---|---|---|---|
| | | Fulbari bazar | Darun Mollick bazar | |
| 1. | Egg | 7(5) | 1 | Fariya / Bapari |

**iv) Local Paravet:**

In Polder 22 around 6 Paravet are available. They are very much interest in large ruminant's treatment. But sometimes they also provide poultry vaccination. Poultry farmers usually get vaccination from lead farmers.

But cool chain condition is very poor due to absence of electricity and difficult connectivity from upazila head quarter.

4 Value chain :

Potential Value Chain List for Polder 22

1. Sesame Value Chain
2. Mung been Value Chain
3. Poultry egg Value Chain
4. Scavenging bird egg Value Chain
5. Drum stick Value Chain
6. Rice Value Chain
7. Sweet gourd Value Chain
8. Okra Value Chain
9. Watermelon Value Chain

4.a. VC identification

**Matrix for Value Chain Selection**
**Component-04**

| Criteria → | Indicate market level (Local, District, Regional, National, International) | Growth Potential (32) | | | | | Impact (32) | | | | | | Structure of the Industry (15) | | | | Gender & Employment (17) | | Collective Action (4) | Risk | Total Weighted Value | Rank |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Crop↓ | | Market Size | Unmet market demand | Potential productivity improvement | Expansion of area / capacity | Value adding to raw materials | Current production | Number of households involved | Contribution to HH income and wealth | Short or longer production/harvesting season | Food Security | Nutrition | Forward / backward linkages conducive to market based approach | Existence of service providers | Favorable business environment | Other programme interests | Involvement of women | Employment generation | Collective Action Opportunities | Major risks (No, High, Medium, Low) green, yellow, red | | |
| Til (Sesame) | Inter/National | 5 | 5 | 5 | 5 | 5 | 3 | 5 | 5 | 3 | 3 | 3 | 5 | 3 | 3 | 1 | 3 | 1 | 5 | | 3.42 | 1 |
| Native poultry Egg | Regional | 1 | 3 | 3 | 5 | 0 | 3 | 5 | 3 | 5 | 3 | 5 | 3 | 3 | 3 | 0 | 5 | 3 | 3 | | 3.24 | 2 |
| Poultry (Egg) | Regional | 3 | 5 | 3 | 3 | 0 | 3 | 0 | 3 | 5 | 3 | 5 | 3 | 5 | 5 | 0 | 3 | 3 | 5 | | 3.17 | 3 |
| T - Aman | National | 5 | 1 | 3 | 0 | 1 | 5 | 5 | 3 | 3 | 5 | 1 | 3 | 5 | 3 | 0 | 3 | 5 | 5 | | 3.12 | 4 |
| Drum Stick | Regional | 3 | 5 | 3 | 5 | 0 | 1 | 5 | 3 | 1 | 1 | 5 | 3 | 3 | 3 | 0 | 5 | 0 | 3 | | 2.84 | 5 |
| Mung | Regional | 3 | 5 | 3 | 3 | 3 | 1 | 1 | 3 | 3 | 3 | 3 | 5 | 3 | 3 | 0 | 1 | 3 | 1 | | 2.70 | 6 |
| Golda | District | 3 | 5 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 3 | 3 | 3 | 3 | 3 | 0 | 1 | 3 | | 2.47 | 7 |
| Sweet gourd | District | 1 | 3 | 3 | 3 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 3 | 3 | 3 | 1 | 3 | | 2.40 | 8 |
| Okra | District | 1 | 3 | 3 | 3 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 3 | 3 | 3 | 1 | 3 | | 2.40 | 9 |
| Table Fish | District | 1 | 3 | 3 | 1 | 3 | 3 | 3 | 1 | 3 | 3 | 3 | 2 | 1 | 3 | 3 | 1 | 1 | 3 | | 2.13 | 10 |

| S I N o | Criteria | Weight level maintain criteria (0-5) | **Sesame** | | **Backyard poultry** | |
|---|---|---|---|---|---|---|
| | | | Sc or e | Key information against the criteria | S | Key information against the criteria |
| **Growth Potential (32)** | | | | | | |
| 1 | Market Size 7 | ♣ Local, regional, national, or international level of envisaged end-market has been defined,<br>♣ consider volume, or value of the market to compare, cereals are usually large volumes & values = 5,<br>♣ but scavenging eggs are low volume & value in comparison = 1, | 5 | ♣ Sesame has a potential International market.<br>♣ Exporters yet not fulfill foreign buyer demand. | 1 | ♣ Local and regional market demand.<br>♣ Per house hold volume is around 8 to 10 per week for sale. |
| 2 | Unmet market demand | ♣ is the demand trend increasing, does the market growth by a high %,<br>♣ do you recognize any potential for quick expansion, do buyers clearly seek more than the supply available, than we score this 5,<br>♣ markets who only grow on the basis of population growth get 1, and<br>♣ market demand that is decreasing, some products get out of our diet or are replaced by substitutes =0 | 5 | ♣ Only 50% demand meet up.<br>♣ Buyers seek more than the supply available.<br>♣ Opportunity to increase market demand by improving quality of sesame.<br>♣ India and China are major sesame export country and also Japan. | 3 | ♣ Market growth is always high and backyard poultry egg price is higher than commercial poultry egg.<br>♣ Buyers always seek more than the supply available.<br>♣ Always exist an opportunity to increase size and volume. |
| 3 | Potential productivity improvement | ♣ do we know of accessible technological (broad sense) improvements?<br>♣ If no potential to improve productivity, score =0, | 5 | ♣ Farmers use local seeds but if they use BARI-Til-4 or Black sesame seeds they will get 50% extra production. | 3 | ♣ Medium potential for improve productivity. Production can be increased up to 30%. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | ♣ very limited potential (<10%)=1,<br>♣ Medium potential(10-19%) = 3,<br>♣ High potential to increase productivity (≥20% )=5 | | ♣ Farmers are not enough aware of fertilizer application if they use proper fertilizer application they can get 25% more yield. | | ♣ Producer rarely uses supplementary feed but if they use supplementary feed there is an opportunity to increase productivity. |
| 4 | Expansion of area / capacity=Potential for area expansion | ♣ If no scope to expand, e.g. T. Amman rice score =0,<br>♣ very limited scope (<10%) =1,<br>♣ Medium scope (10-20%)= 3,<br>♣ High potential (≥20% ) e.g. winter crops where cropping intensity is still very low due to infrastructure constraints=5 | 5 | ♣ 50% area under sesame cultivation.<br>♣ Opportunity to increase sesame cultivation land. | 5 | ♣ Around 60 % Household involved in this business. There is a high potential for expand due to low investment and easy to rear |
| 5 | Value adding to raw materials | ♣ the potential for farmers or small or micro enterprises to add value and increase earnings locally would score 5,<br>♣ if it requires a much larger investment by a processor at regional level =3 or even 1,<br>♣ when technically there is no value addition possible =0.<br>♣ If no value addition possible, score =0, very limited chance =1 (<10%), Medium potential (10-19%)= 3, High potential (≥20%)=5 | 5 | ♣ Farmers usually dry sesame on soil floor. If they dry sesame on blue net or Pucca floor they can get 50 to 100 taka more in 40 kg sesame.<br>♣ Price of blue net is easily affordable for farmers.<br>♣ Farmers use water for sesame fermentation due to lack of Knowledge. If they aware right fermentation process they can get more price. | 0 | ♣ Limited opportunity for value adding. |
| Impact (32) | | | | | | |
| 6 | Current producti | ♣ the % of the land presently under | 3 | ♣ Current production only | 3 | ♣ Only 56% HH rear backyard |

| | | | | | | |
|---|---|---|---|---|---|---|
| | on | cultivation of this crop, or<br>♣ the present scale (scavenging versus large broiler farms) or volume of production sets the foundation for the level of impact that can be expected.<br>♣ T. Aman is produced on nearly 100% of the area available =5,<br>♣ a crop that only commands a very small percentage of the area =1 and<br>♣ a crop that still needs to be introduced =0, If a crop is produced on say around 50% of land then score=3 | | 50% land of total polder<br>♣ Opportunity to increase current production. Farmers use two chambered sesame seed variety. If they use 4 chambered sesame seed they can get 50% extra production. | | poultry and there is an opportunity to increase egg production, folk size improvement and no. of House hold. |
| 7 | Number of households involved | ♣ If less than <5% HH Involved, score =0,<br>♣ involvement by (5-20%) =1,<br>♣ by (20-60%)= 3,<br>♣ High potential (>60% )=5 (explanations are similar as above) | 5 | ♣ Around 60% household involve in sesame production.<br>♣ Small and Marginal farmers also cultivate sesame on their lease land. | 5 | ♣ Around 60% household involve in backyard poultry egg production. |
| 8 | Contribution to HH income and wealth | ♣ Consider the present versus potential contribution to HH income (contribution to yearly income as %),<br>♣ score =0 (only loss making produce),<br>♣ very limited potential to contribution (>5%) =1 (a produce which will always be low in volume, and value despite productivity improvements),<br>♣ Medium potential (6-25%)= 3,<br>♣ High potential (>25%)=5, | 3 | ♣ High potential for HH income<br>♣ HH income can be increased more than 25 % | 3 | ♣ High potential for HH income<br>♣ Limited income for per household but it comes regularly. |

| | | | | | | |
|---|---|---|---|---|---|---|
| 9 | Short or longer production/harvesting season | Short peak harvesting window, in combination or not of being perishable or yearlong production with regular income makes a big difference to HH financial situation. A product with a short critical harvesting window, moreover being a perishable product having to be sold rapidly score =0, if short harvesting period but not perishable =1, while a crop with a lengthy harvesting period say milk =3, while the permanent production like betel leaf =5 | 3 | ♣ Sesame is not being perishable and could be store year round and farmers can sell when they want or year round. | 5 | ♣ Year round harvesting period and year round regular income |
| | | ♣ | | ♣ | | ♣ |
| 10 | Food Security | ♣ If no impact on food security as non-food product score =0,<br>♣ a food product already being produced locally in surplus has very limited impact opportunity =1,<br>♣ Medium potential for impact= 3,<br>♣ a food crop which regularly has to be imported to maintain food security in the area, has high potential to impact=5 | 1 | ♣ Sesame mainly export product.<br>♣ Very few people consume sesame oil and its percentage is negligible.<br>♣ But it creates an opportunity on HH incomes.<br>♣ Farmers purchase other products by selling sesame round the year. | 3 | ♣ Regularly production and surplus production. |
| 11 | Nutrition | some product which is needed to ensure proper nutritional food intake, e.g. some micro elements usually in shortage should score high; If no impact possible on nutritional intake (e.g. no | 3 | ♣ Sesame is a nutritious product also but very few people habituated with sesame | 5 | ♣ Egg is a very nutritious food. It is important food for child and women. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | food crop) , score =0, very limited potential =1, Medium potential = 3, High potential =5 e.g. moringa with recognized high nutritional value. | | consumption. | | |
| **Structure of the Industry (15)** | | | | | | |
| 12 | Forward / backward linkages conducive to market based approach | ♣ Consider existence of lead firms, in either inputs, processing or marketing, the suitability of these actors and ease of getting them involved, will determine potential. If no potential for Market linkage or development approach, e.g.<br>♣ due to complete absence score =0,<br>♣ very limited potential =1,<br>♣ Medium potential = 3,<br>♣ High potential =5 | 5 | ♣ Very high potential for linkage with processors.<br>♣ Opportunity to Contract farming with private company and collective sales. | 3 | ♣ Medium potential for linkage with market actors.<br>♣ 3 feed & medicine sellers are available in polder area.<br>♣ 3 local egg collectors are also available in polder area. |
| 13 | Existence of service providers | ♣ Similar to above, existence and performance of public and private service providers to the value chain actors. If no existence for SP, score =0,<br>♣ very limited presence (1/2) =1,<br>♣ Medium presence (2-5)= 3,<br>♣ High existence (>5) =5 | 3 | ♣ One BADC dealer present in Polder area.<br>♣ Also DAE field staff Sub assistant agriculture officer present in Polder area.<br>♣ Local Sesame paikars also available in polder area. | 3 | ♣ 6 paravets are present in polder area but they are mainly interest in large ruminant. But medicines are available in polder area. Farmers often get services (vaccination) from some Lead famers.<br>♣ 3 feed & medicine sellers are available in polder area, embedded services also available by |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | input seller. |
| 14 | Favorable business environment | ♣ Consider relevant issues in the BEE. Absence of constraints or existence of support measures to doing business scores high, the extent of government involvement distorting the market could be negative.<br>♣ If business environment is obstructive in several ways score =0,<br>♣ score higher in accordance with the business environment being more developed (e.g. aquaculture standards are available) and supportive (any subsidies, high on government policy priorities) or not. | 3 | ♣ Farmers can easily sale sesame in Batiyaghata hat( Outside Polder).<br>♣ Farmers can also sale sesame at farm gate.<br>♣ Sometimes Bepari or Processor comes to Nearest Fulbari hat at Polder when bepari and | 3 | ♣ All types of Business enabling environment are available in polder area. All norms, low and traditions are familiar to backyard poultry learning. |
| 15 | Other programme interests | ♣ The extent there is opportunities for coordination, complementary action and synergy with other local programmes.<br>♣ If no NGO/Orgn working in the same sector, score =0,<br>♣ very limited presence (1-2) =1,<br>♣ Medium presence (3-5)= 3,<br>♣ High presence (>5)=5 | 1 | ♣ FAO supply seeds and fertilizer but yet not provide training.<br>♣ FAO intervention only for one time and there is no follow up support available by FAO. | 0 | ♣ No NGO/ Organization working on backyard poultry |
| **Gender & Employment (17)** | | | | | | |
| 16 | Involvement of women | Focus is on the contribution to women empowerment, not just more work while they are already overburdened and only would be to the detriment | 1 | ♣ Women are mainly involve in drying, Cleaning and storage.<br>♣ Women are also involved in harvesting | 5 | ♣ It is manly operating by women, like feeding, housing and egg selling<br>♣ Incomes gets |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | of the family. Aim is to give them for example an opportunity to retain income. If no women involvement potential, score =0, very limited potential =1, Medium potential = 3, High potential =5 | | sesame. | | female directly and they use it as their plan. |
| 17 | Employment generation | Labour intensity of the envisaged intervention (could be area expansion, adding value, productivity increase). Number of employment creation, the type (quality) of employment and opportune timing thereof. If no potential for employment generation, score =0, very limited potential (<5%)=1, Medium potential (5-10%)= 3, High potential (>10%)=5 | 1 | ♣ Usually farmers harvest their sesame by themselves and they hire labor rarely.<br>♣ Only they hire power tiller or tractor for tillage. | 3 | ♣ Women friendly and women can easily operating this business.<br>♣ It needs low investment.<br>♣ Poor and extreme poor people can also participate in this business. |
| **Collective Action(4)** | | | | | | |
| 18 | Collective action opportunities | ♣ Does this product lend itself to Business ideas for cooperatives, on the input or market side, and producer groups benefitting of doing these collectively.<br>♣ If no opportunities for collective action (working in collaboration/ as cooperatives), score =0,<br>♣ very limited potential =1, | 5 | ♣ High opportunity to collect or purchase inputs collectively.<br>♣ High opportunity to contract farming.<br>♣ Also opportunity to sale collectively. | 3 | ♣ Medium opportunity to collective action.<br>♣ Farmers usually sales their egg at farm gate level to local egg collectors. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | ♣ Medium potential = 3,<br>♣ High potential =5 | | | | |
| 19 | Major risks (No, High,Medium, Low) | | | | | |

| SINo | Criteria | Weight level maintain criteria (0-5) | | **Commercial Poultry Egg** | | **Rice** |
|---|---|---|---|---|---|---|
| | | | S | Key information against the criteria | S | Key information against the criteria |
| 1 | Market Size 7 | ♣ Local, regional, national, or international level of envisaged end-market has been defined,<br>♣ consider volume, or value of the market to compare, cereals are usually large volumes & values = 5,<br>♣ but scavenging eggs are low volume & value in comparison = 1, | 3 | ♣ Local and regional market demand.<br>♣ Per farm average production 250 to 300 egg per day. | 5 | ♣ T-Aman has a potential national market.<br>♣ Surplus production of Paddy in Polder 22 |
| 2 | Unmet market demand | ♣ is the demand trend increasing, does the market growth by a high %,<br>♣ do you recognize any potential for quick expansion, do buyers clearly seek more than the supply available, than we score this 5,<br>♣ markets who only grow on the basis of population growth get 1, and<br>♣ market demand that is decreasing, some products get out of our diet or are replaced by | 5 | ♣ Market growth is high and demand is increasing.<br>♣ Polder 22 and Khulna City(Huge consumer) communication is very good and easy transportation system available here. | 1 | ♣ Buyers seek more than the supply available.<br>♣ Opportunity to increase market demand by improving quality of Rice. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | substitutes =0 | | | | |
| 3 | Potential productivity improvement | ♣ do we know of accessible technological (broad sense) improvements?<br>♣ If no potential to improve productivity, score =0,<br>♣ very limited potential (<10%)=1,<br>♣ Medium potential(10-19%) = 3,<br>♣ High potential to increase productivity (≥20% )=5 | 3 | ♣ Medium potential for improve productivity. Production can be increased up to 20% | 3 | ♣ Farmers use HYV and Local seeds but if they use certified BADC seeds they will get 15% extra production.<br>♣ Farmers are not enough aware of fertilizer application if they use proper fertilizer application they can get 5% more yield. |
| 4 | Expansion of area / capacity=Potential for area expansion | ♣ If no scope to expand, e.g. T. Amman rice score =0,<br>♣ very limited scope (<10%) =1,<br>♣ Medium scope (10-20%)= 3,<br>♣ High potential (≥20% ) e.g. winter crops where cropping intensity is still very low due to infrastructure constraints=5 | 3 | ♣ High potential for expand.<br>♣ Need investment but services are available in Polder area. | 0 | ♣ 100% area under T-Aman cultivation. |
| 5 | Value adding to raw materials | ♣ the potential for farmers or small or micro enterprises to add value and increase earnings locally would score 5,<br>♣ if it requires a much larger investment by a processor at regional level =3 or even 1,<br>♣ when technically there is no value addition possible =0.<br>♣ If no value addition possible, score =0, very limited chance =1 (<10%), Medium | 0 | ♣ Limited opportunity for value adding. | 1 | ♣ Limited opportunity for value adding.<br>♣ Seed production a good idea for value addition. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | potential (10-19%)= 3, High potential (≥20%)=5 | | | | |
| 6 | Current production | ♣ the % of the land presently under cultivation of this crop, or<br>♣ the present scale (scavenging versus large broiler farms) or volume of production sets the foundation for the level of impact that can be expected.<br>♣ T. Aman is produced on nearly 100% of the area available =5,<br>♣ a crop that only commands a very small percentage of the area =1 and<br>♣ a crop that still needs to be introduced =0, If a crop is produced on say around 50% of land then score=3 | 3 | ♣ Around 100 HH rear commercial poultry and there is an opportunity to increase house hold and No. of Poultry. | 5 | ♣ Current production 100% land of total polder<br>♣ Opportunity to increase current production. |
| 7 | Number of households involved | ♣ If less than <5% HH Involved, score =0,<br>♣ involvement by (5-20%) =1,<br>♣ by (20-60%)= 3,<br>♣ High potential (>60% )=5 (explanations are similar as above) | 0 | ♣ Around 100 household involve in egg production. | 5 | ♣ Around 95% household involve in sesame production. |
| 8 | Contribution to HH income and wealth | ♣ Consider the present versus potential contribution to HH income (contribution to yearly income as %),<br>♣ score =0 (only loss making produce),<br>♣ very limited potential to contribution (>5%) =1 (a produce which will always be low in volume, and value despite productivity improvements), | 3 | ♣ High potential for HH income<br>♣ It can be a main income source of a house hold | 3 | ♣ Mai source of HH income<br>♣ HH income can be increased more than 10 % |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | ♣ Medium potential (6-25%)= 3,<br>♣ High potential (>25%)=5, | | | | |
| 9 | Short or longer production/harvesting season | Short peak harvesting window, in combination or not of being perishable or yearlong production with regular income makes a big difference to HH financial situation. A product with a short critical harvesting window, moreover being a perishable product having to be sold rapidly score =0, if short harvesting period but not perishable =1, while a crop with a lengthy harvesting period say milk =3, while the permanent production like betel leaf =5 | 5 | ♣ Year round harvesting period and year round regular income | 3 | ♣ Long harvesting period. |
| 10 | Food Security | ♣ If no impact on food security as non-food product score =0,<br>♣ a food product already being produced locally in surplus has very limited impact opportunity =1,<br>♣ Medium potential for impact= 3,<br>♣ a food crop which regularly has to be imported to maintain food security in the area, has high potential to impact=5 | 3 | ♣ Regularly production and surplus production | 5 | ♣ Rice is mainly for consumption and main food of polder dwellers. |
| 11 | Nutrition | some product which is needed to ensure proper nutritional food intake, e.g. some micro elements usually in shortage should score | 5 | ♣ Egg is a very nutritious food. It is important food for child and women. | 0 | ♣ Rice is a main food of polder dwellers.<br>♣ Limited nutritious food. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | high; If no impact possible on nutritional intake (e.g. no food crop) , score =0, very limited potential =1, Medium potential = 3, High potential =5 e.g. moringa with recognized high nutritional value. | | | | |
| 12 | Forward / backward linkages conducive to market based approach | ♣ Consider existence of lead firms, in either inputs, processing or marketing, the suitability of these actors and ease of getting them involved, will determine potential. If no potential for Market linkage or development approach, e.g.<br>♣ due to complete absence score =0,<br>♣ very limited potential =1,<br>♣ Medium potential = 3,<br>♣ High potential =5 | 3 | ♣ High potential for linkage with market actors. All types of input companies' services are available in polder area. | 3 | ♣ High potential for linkage with processors.<br>♣ Opportunity to Contract farming with BADC and collective sales. |
| 13 | Existence of service providers | ♣ Similar to above, existence and performance of public and private service providers to the value chain actors. If no existence for SP, score =0,<br>♣ very limited presence (1/2) =1,<br>♣ Medium presence (2-5)= 3,<br>♣ High existence (>5) =5 | 5 | ♣ All medicines are available in polder area. And vaccination managed by farmers themselves from Khulna city or Paikgacha. | 5 | ♣ One BADC dealer present in Polder area.<br>♣ Also DAE field staff Sub assistant agriculture officer present in Polder area.<br>♣ Local Rice paikars also available in polder area. |
| 14 | Favorable business environment | ♣ Consider relevant issues in the BEE. Absence of constraints or existence of support measures to doing business scores high, the extent of government involvement distorting the market could be | 5 | ♣ All types of Business enabling environment are available in polder area. All norms, low and tradions are familiar to backyard poultry | 3 | ♣ Farmers can easily sale Paddy in Fulbari hat.<br>♣ Farmers can also sale Paddy at farm gate.<br>♣ Sometimes Bepari or |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | negative.<br>♣ If business environment is obstructive in several ways score =0,<br>♣ score higher in accordance with the business environment being more developed (e.g. aquaculture standards are available) and supportive (any subsidies, high on government policy priorities) or not. | | learning. | | Processor comes to Nearest Fulbari hat at Polder. |
| 15 | Other programme interests | ♣ The extent there is opportunities for coordination, complementary action and synergy with other local programmes.<br>♣ If no NGO/Orgn working in the same sector, score =0,<br>♣ very limited presence (1-2) =1,<br>♣ Medium presence (3-5)= 3,<br>♣ High presence (>5)=5 | 0 | ♣ No NGO/ Organization working on backyard poultry | 0 | ♣ No NGO/ Organization working on T-Aman |
| 16 | Involvement of women | Focus is on the contribution to women empowerment, not just more work while they are already overburdened and only would be to the detriment of the family. Aim is to give them for example an opportunity to retain income. If no women involvement potential, score =0, very limited potential =1, Medium potential = 3, High potential =5 | 3 | ♣ It is manly operating by women, like feeding, housing and egg selling | 3 | ♣ Women are mainly involve in drying, Cleaning and storage.<br>♣ Women also involved in Seed storage. |

| | | | | | | |
|---|---|---|---|---|---|---|
| 17 | Employment generation | Labour intensity of the envisaged intervention (could be area expansion, adding value, productivity increase). Number of employment creation, the type (quality) of employment and opportune timing thereof. If no potential for employment generation, score =0, very limited potential (<5%)=1, Medium potential (5-10%)= 3, High potential (>10%)=5 | 3 | ♣ Women friendly and women can easily operating this business and low investment. | 5 | ♣ Usually farmers harvest their paddy by themselves and they also hire labor.<br>♣ They also hire power tiller or tractor for tillage.<br>♣ During paddy cultivation labor demand increases. |
| 18 | Collective action opportunities | ♣ Does this product lend itself to Business ideas for cooperatives, on the input or market side, and producer groups benefitting of doing these collectively.<br>♣ If no opportunities for collective action (working in collaboration/ as cooperatives), score =0,<br>♣ very limited potential =1,<br>♣ Medium potential = 3,<br>♣ High potential =5 | 5 | ♣ Medium opportunity to collective action. Farmers generally sales their egg at Fulbari bazaar , some farmers at Khulna baro bazaar. | 5 | ♣ High opportunity to collect or purchase inputs collectively.<br>♣ Also opportunity to sale collectively. |
| 19 | Major risks (No, High,Medium, Low) | | | | | |

| SI | Criteria | Weight level maintain criteria (0-5) | | **Drum Stick** | | **Mung** |
|---|---|---|---|---|---|---|

| No | | | S | Key information against the criteria | S | Key information against the criteria |
|---|---|---|---|---|---|---|
| 1 | Market Size 7 | ♣ Local, regional, national, or international level of envisaged end-market has been defined,<br>♣ consider volume, or value of the market to compare, cereals are usually large volumes & values = 5,<br>♣ but scavenging eggs are low volume & value in comparison = 1, | 3 | ♣ Local and regional market demand. | 3 | ♣ Mung has a potential national market.<br>♣ Surplus production of Mung in Polder 22 |
| 2 | Unmet market demand | ♣ is the demand trend increasing, does the market growth by a high %,<br>♣ do you recognize any potential for quick expansion, do buyers clearly seek more than the supply available, than we score this 5,<br>♣ markets who only grow on the basis of population growth get 1, and<br>♣ market demand that is decreasing, some products get out of our diet or are replaced by substitutes =0 | 5 | ♣ Market growth is high and demand is increasing. | 5 | ♣ Buyers seek more than the supply available.<br>♣ Opportunity to increase market demand by improving quality of Mung |
| 3 | Potential productivity improvement | ♣ Do we know of accessible technological (broad sense) improvements?<br>♣ If no potential to improve productivity, score =0,<br>♣ very limited potential (<10%)=1,<br>♣ Medium potential(10-19%) = 3,<br>♣ High potential to increase productivity | 3 | ♣ Potential for improve productivity. Production can be increased up to 50% | 3 | ♣ Farmers use own seeds and Local seeds but if they use certified BADC seeds they will get 15% extra production.<br>♣ Farmers are not enough aware of fertilizer application if they use proper |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | (≥20% )=5 | | | | fertilizer application they can get more yield. |
| 4 | Expansion of area / capacity=Potential for area expansion | ♣ If no scope to expand, e.g. T. Amman rice score =0,<br>♣ very limited scope (<10%) =1,<br>♣ Medium scope (10-20%)= 3,<br>♣ High potential (≥20% ) e.g. winter crops where cropping intensity is still very low due to infrastructure constraints=5 | 3 | ♣ High potential for expand.<br>♣ Need limited or no investment. | 3 | ♣ 8 % area under Mung cultivation. |
| 5 | Value adding to raw materials | ♣ the potential for farmers or small or micro enterprises to add value and increase earnings locally would score 5,<br>♣ if it requires a much larger investment by a processor at regional level =3 or even 1,<br>♣ when technically there is no value addition possible =0.<br>♣ If no value addition possible, score =0, very limited chance =1 (<10%), Medium potential (10-19%)= 3, High potential (≥20%)=5 | 0 | ♣ Limited opportunity for value adding. | 3 | ♣ Opportunity for value adding. |
| 6 | Current production | ♣ the % of the land presently under cultivation of this crop, or<br>♣ the present scale (scavenging versus large broiler farms) or volume of production sets the foundation for the level of impact that can be expected.<br>♣ T. Aman is produced on | 1 | ♣ Around 80% HH has Drum stick plant and there is an opportunity to increase No. of Plant.<br>♣ But per household production average production around 40 kg. | 1 | ♣ Current production 8% land of total polder<br>♣ Opportunity to increase current production. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | nearly 100% of the area available =5,<br>♣ a crop that only commands a very small percentage of the area =1 and<br>♣ a crop that still needs to be introduced =0, If a crop is produced on say around 50% of land then score=3 | | | | |
| 7 | Number of households involved | ♣ If less than <5% HH Involved, score =0,<br>♣ involvement by (5-20%) =1,<br>♣ by (20-60%)= 3,<br>♣ High potential (>60% )=5 (explanations are similar as above) | 5 | ♣ Around 100 household involve in egg production. | 1 | ♣ Around 10 % household involve in Mung production. |
| 8 | Contribution to HH income and wealth | ♣ Consider the present versus potential contribution to HH income (contribution to yearly income as %),<br>♣ score =0 (only loss making produce),<br>♣ very limited potential to contribution (>5%) =1 (a produce which will always be low in volume, and value despite productivity improvements),<br>♣ Medium potential (6-25%)= 3,<br>♣ High potential (>25%)=5, | 3 | ♣ High potential for HH income | 3 | ♣ Mung is a cash crop<br>♣ HH income can be increased more than 10 % |
| 9 | Short or longer production/harvesting season | Short peak harvesting window, in combination or not of being perishable or yearlong production with regular income makes a big difference to HH financial situation. A product with a short critical harvesting window, | 1 | ♣ Short harvesting period.<br>♣ Only 30 days sesame are available in polder area. | 3 | ♣ Long harvesting period. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | moreover being a perishable product having to be sold rapidly score =0, if short harvesting period but not perishable =1, while a crop with a lengthy harvesting period say milk =3, while the permanent production like betel leaf =5 | | | | |
| | | ♣ | | ♣ | | ♣ |
| 10 | Food Security | ♣ If no impact on food security as non-food product score =0,<br>♣ a food product already being produced locally in surplus has very limited impact opportunity =1,<br>♣ Medium potential for impact= 3,<br>♣ a food crop which regularly has to be imported to maintain food security in the area, has high potential to impact=5 | 3 | ♣ Surplus production | 3 | ♣ Mung been has a contribution on HH food security. Farmers cultivate mung as cash crop. |
| 11 | Nutrition | some product which is needed to ensure proper nutritional food intake, e.g. some micro elements usually in shortage should score high; If no impact possible on nutritional intake (e.g. no food crop) , score =0, very limited potential =1, Medium potential = 3, High potential =5 e.g. moringa with recognized high nutritional value. | 5 | ♣ Muringa is a very nutritious food. It is important food for child and women. | 3 | ♣ Mung is medium nutritious food. |
| 12 | Forward / backwar | ♣ Consider existence of lead firms, in either inputs, processing or marketing, the suitability | 3 | ♣ Potential for linkage with market actors. | 5 | ♣ High potential for linkage with processors. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | d linkages conducive to market based approach | of these actors and ease of getting them involved, will determine potential. If no potential for Market linkage or development approach, e.g.<br>♣ due to complete absence score =0,<br>♣ very limited potential =1,<br>♣ Medium potential = 3,<br>♣ High potential =5 | | | | |
| 13 | Existence of service providers | ♣ <u>Similar to above, existence and performance of public and private service providers to the value chain actors.</u> If no existence for SP, score =0,<br>♣ very limited presence (1/2) =1,<br>♣ Medium presence (2-5)= 3,<br>♣ High existence (>5) =5 | 3 | ♣ DAE plays an important role on Moringa expansion.<br>♣ 3-5 Moringa collector present in polder area. | 3 | ♣ One BADC dealer present in Polder area.<br>♣ Also DAE field staff Sub assistant agriculture officer present in Polder area. |
| 14 | Favorable business environment | ♣ Consider relevant issues in the BEE. Absence of constraints or existence of support measures to doing business scores high, the extent of government involvement distorting the market could be negative.<br>♣ If business environment is obstructive in several ways score =0,<br>♣ score higher in accordance with the business environment being more developed (e.g. aquaculture standards are available) and supportive (any subsidies, high on government policy | 3 | ♣ All types of Business enabling environment are available in polder area. All norms, low and tradions are familiar to backyard poultry learning. | 3 | ♣ All types of Business enabling environment are available in polder area. All norms, low and tradions are familiar to backyard poultry learning.. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | priorities) or not. | | | | |
| 15 | Other programme interests | ♣ The extent there is opportunities for coordination, complementary action and synergy with other local programmes.<br>♣ If no NGO/Orgn working in the same sector, score =0,<br>♣ very limited presence (1-2) =1,<br>♣ Medium presence (3-5)= 3,<br>♣ High presence (>5)=5 | 0 | ♣ No NGO/ Organization working on backyard poultry | 0 | ♣ No NGO/ Organization working on T-Aman |
| 16 | Involvement of women | Focus is on the contribution to women empowerment, not just more work while they are already overburdened and only would be to the detriment of the family. Aim is to give them for example an opportunity to retain income. If no women involvement potential, score =0, very limited potential =1, Medium potential = 3, High potential =5 | 5 | ♣ It is manly operating by women, like feeding, housing and egg selling | 3 | ♣ Women are mainly involved in collection, drying, Cleaning and storage.<br>♣ Women also involved in Seed storage. |
| 17 | Employment generation | Labour intensity of the envisaged intervention (could be area expansion, adding value, productivity increase). Number of employment creation, the type (quality) of employment and opportune timing thereof. If no potential for employment generation, score =0, very limited | 1 | ♣ Women friendly and women can easily operating this business and low investment. | 3 | ♣ Usually women harvest their mung by themselves and they also hire labor. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | potential (<5%)=1, Medium potential (5-10%)= 3, High potential (>10%)=5 | | | | |
| 18 | Collective action opportunities | ♣ Does this product lend itself to Business ideas for cooperatives, on the input or market side, and producer groups benefitting of doing these collectively.<br>♣ If no opportunities for collective action (working in collaboration/ as cooperatives), score =0,<br>♣ very limited potential =1,<br>♣ Medium potential = 3,<br>♣ High potential =5 | 3 | ♣ Medium opportunity to collective action. Farmers generally sales their mung at Fulbari bazaar or farm gate, some farmers at Khulna Sonadanga arot. | 1 | ♣ Opportunity to collect or purchase inputs collectively.<br>♣ Also opportunity to sale collectively. |
| 19 | Major risks (No, High,Medium, Low) | | | | | |

## 4.b. VC analysis

## Sesame VC

Sesame is a cash crop( 90 to 100days crop) in polder 22. Farmers usually produce Brown (Red) Sesame in Polder 22. But some farmers also produce Black Sesame also. Farmers usually BARI Till-2 and now BARI Til-3 and BARI-4 are also popular. BARI Til-4 is high yielding verity. Sesame grown February to May on summer session. It needs light irrigation. During summer sweet water is very precious both for irrigation and also for drinking. For these reason farmers can`t cultivate other crops. Even farmers also avoid T-Aus for harvesting problems and also land preparation problems for T-Aman.

Sunflower, Maize and other field crops need more irrigation and production cost is higher than sesame. So farmers chose easy option like-sesame cultivation.

The Opportunity:

- Tremendous export potential (China & Japan).
- Present production can only meet 25% of the demand.
- Opportunity to increase production by introducing different varieties (Black Sesame, BARI -3, 4) and opportunity for horizontal expansion.
- Farmers can earn Tk 200 more by cultivating Black Sesame instead of Brown sesame per mound.
- Soil salinity tolerant crop.
- Easy to sell round the year.
- Main Cash crop and easy to store.
- Less cost intensive.

The Challenges:

- Poor drainage system and water logging one of the major constrain.
- Limited irrigation facilities.
- Farmers often use their own seeds, for using own seed for long times, seeds are
  suffering (inbreeding depression).
- Lack of quality seeds availability.
- Lack of Knowledge on Improved production technology , Post harvest technologies (Grading
  and Packaging).

## Rice VC

Rice mean T-Aman( Transplanting Aman) is main crop in Polder 22. Around 100% area under T-Aman cultivation. Farmers usually use high yielding verity like BR-23, BR-28 and BR-29. Farmers also use local variety like- Ghunsi/ Ranifelot/Pattnai balam/ kachra Vutay felot. Local varieties are low yielding but water logging resistance. They are mainly deep water paddy. T-Aman production season June to December. During this season always heavy rainfall occurs. Due to heavy rainfall and temporary water logging (1-2 days) no other crops can be cultivated in polder area field. And also ensuring food for round the year, farmers produce T-Aman.

Opportunity:

- High market demand in national market.
- Main food in Bangladesh.
- Market actors are available.
- High demand of By-product.

Constrains:

- Farmers usually use their own seeds which is creating inbreeding depression.
- Lack of knowledge and technologies particularly about the use of balanced fertilizer.
- Irrigation and drainage problems
- Pest and disease management problems
- Highly dependent on rain water.
- Unavailability of quality inputs.
- Lack of drying facilities.

## Scavenging bird Egg VC

Scavenging bird (Local duck and hen) are the main sources of protein for polder dwellers. Around 60% house hold has folk (folk size 6-10). There is available water body and land for rearing Scavenging bird. It needs small space for rear in house. And it cost is low. Polder dwellers mainly eat eggs and they also sales some egg also. They also eat Scavenging bird's meat also. This is very popular in polder area because women can earn money directly by selling eggs at farm gate level.

**Opportunity:**

- High demand of meat and egg.
- Easy to rear and women friendly.
- Comparatively more Disease resistant than commercial birds.
- Low investment.
- Poor people can easily participate in this business.

**Constrains:**

- Lack of services for disease control and prevention.

- Malnutrition due to under feeding high cost of feed and lack of quality feed.
- Inadequate knowledge on Improve Production Technologies.
- Week linkage with Department of Livestock
- Natural calamities and intrusion of salinity.

## Poultry Egg VC

Layer egg production is a potential industry in polder 22. Around 100 House hold has layer farm and their main income source from egg selling. Due to easy connectivity from polder to nearest big markets at Khulna, layer industry grows very quickly. All types of inputs and services what a producer needs are available here. But drinking water for layer are light costly for farmers. Layer farm owners always buy water from mobile water supplier, who carries out water from outside the polder.

Opportunity:

- High demand of Egg round the year.
- Nearby high demand zone.
- Existence of production cluster.
- Available Day old Chick Company and feed company retailer.
- Support services are available
- Feeds and Day Old Chicks also available in Credit.

Problems:

- Lack of services for disease control and prevention.
- Inadequate knowledge on Improve Production Technologies.
- Week linkage with Department of Livestock
- Natural calamities and intrusion of salinity.
- High price of poultry feed

- High price of pure drinking water for Poultry bird due to salinity problem in polder area.
- Unavailability of Electricity

## Drum stick VC

Drum stick is an important vegetable in polder area. It grows all over the polder. In every house hold has one or two drum stick plant. It is easy to cultivate and harvesting season on March to April. A mature plant can produce 50 to 80 kg. It is a nutritious vegetable. It has medicinal quality. It leaf is also nutritious but polder dwellers only eat its fruit.

Opportunity:

- High demand in season.
- High nutrition and medicinal value.
- Scope to increase number of trees.
- Production cost near about zero.
- Propagation can be easily done by its cuttings.
- Fellow and roadside land can be utilized.
- Long shelf life.
- Perennial crop.

Constrains:

- Short duration vegetables only One month selling period.
- Cannot tolerate water logging.
- Low price at farm gate level.
-

## Sweet gourd VC

Opportunity:

- Tremendous unmet demand of Vegetables in Khulna district.
- Opportunity to introduce new varieties and new vegetables.

- Exist huge land
- High value of vegetables.
- Easy to sell at local and district market round the year.
- Easy market connectivity

Constrains:

- Poor drainage and irrigation system in Polder area.
- Salinity problem in winter season.
- Unavailability of renown quality vegetables seed like Lal Teer , Metal, A.R Malik, United etc.
- Lack of Knowledge on Improved production technology of vegetables.
- Numbers of input sellers are very poor and embedded service are not always available and sometimes did not fulfill farmer's requirement.
- Lac of knowledge on Post harvest technologies. Grading and Transport, packaging.
- Low ability to investment on vegetables production.
- Unavailability of micro nutrient
- Weak market linkage

## Okra VC

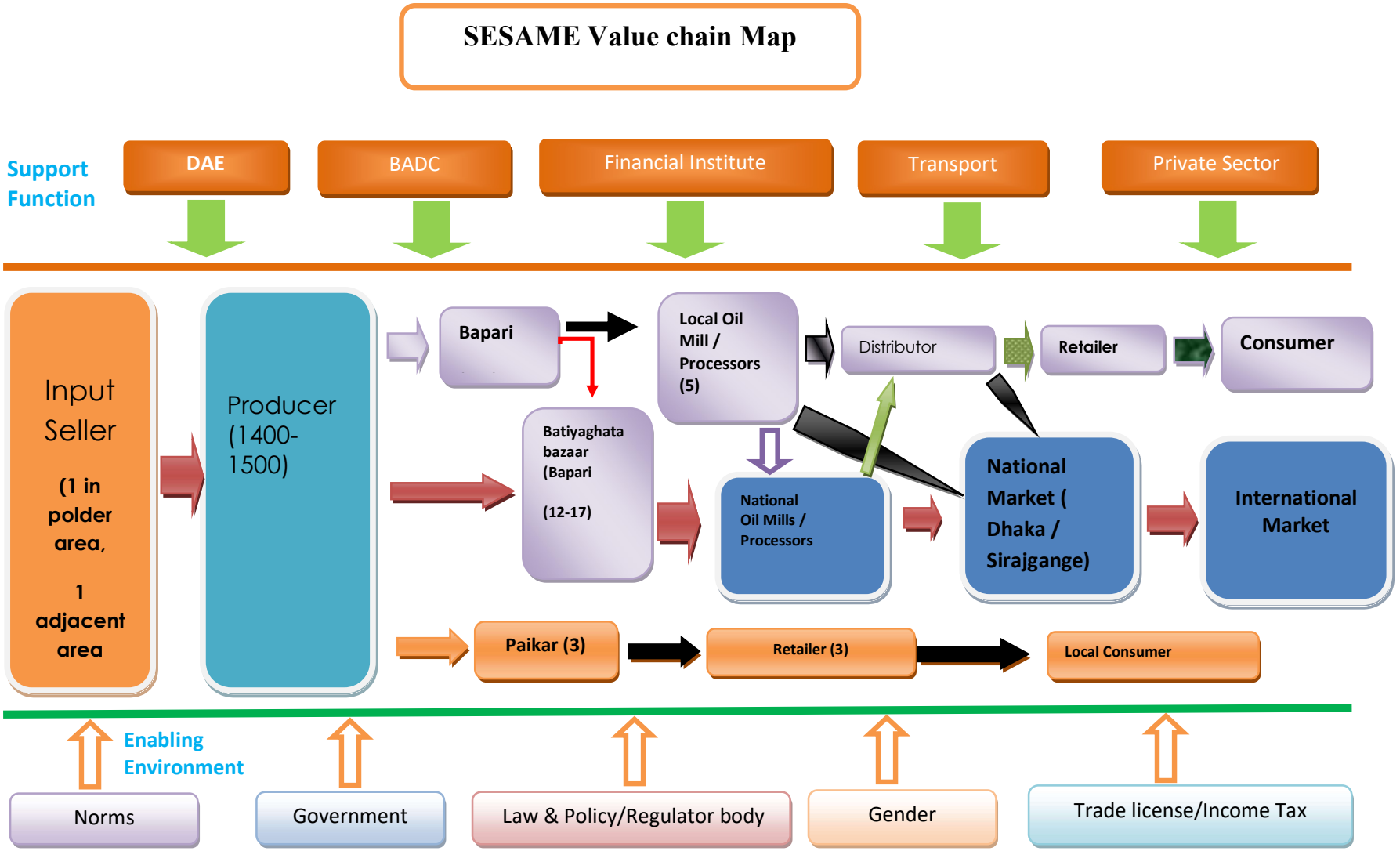
Opportunity:

- Tremendous unmet demand of Vegetables in Khulna district.
- Opportunity to introduce new varieties and new vegetables.
- Exist huge land
- High value of vegetables.
- Easy to sell at local and district market round the year.
- Easy market connectivity

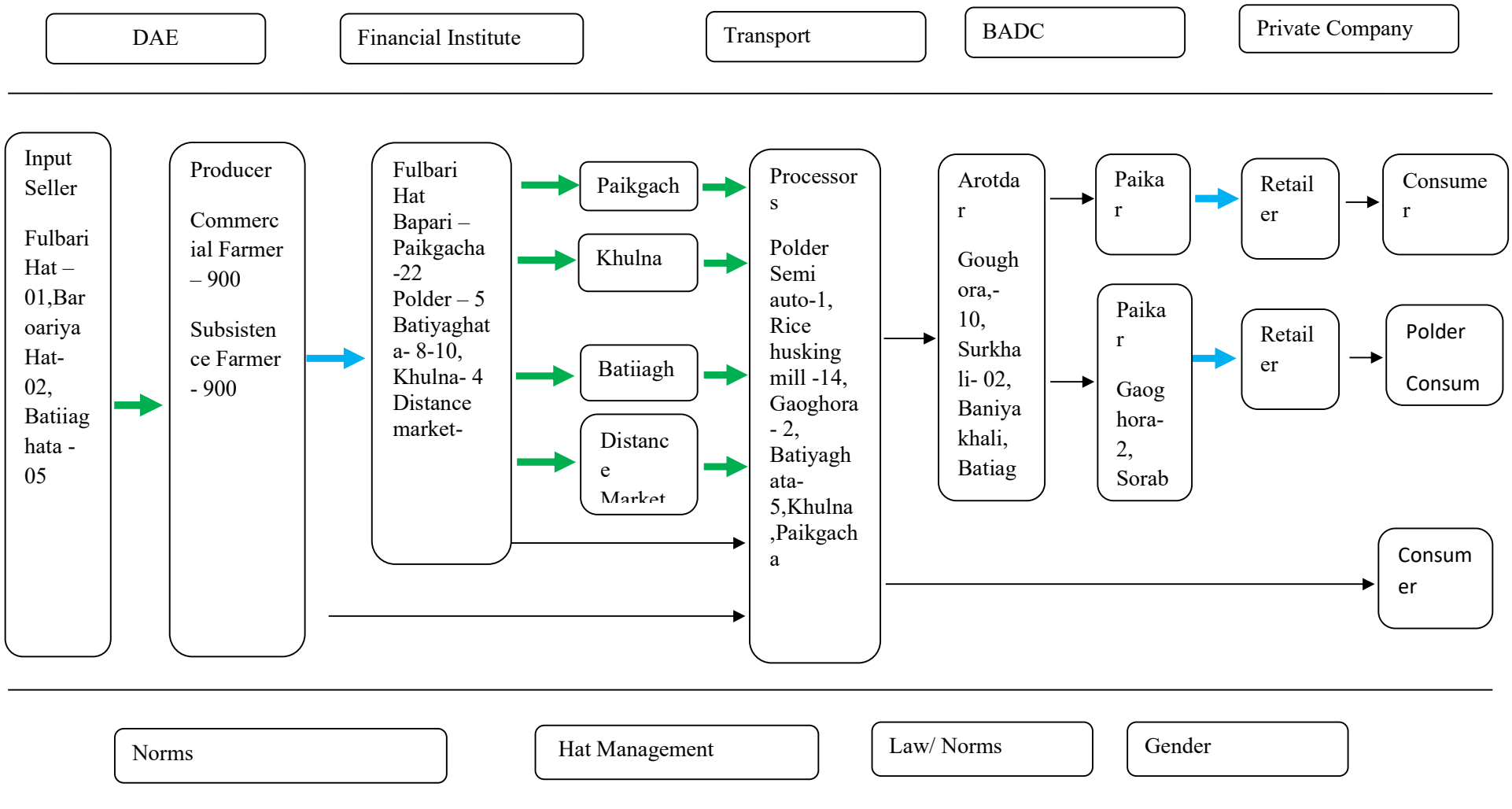
Constrains:

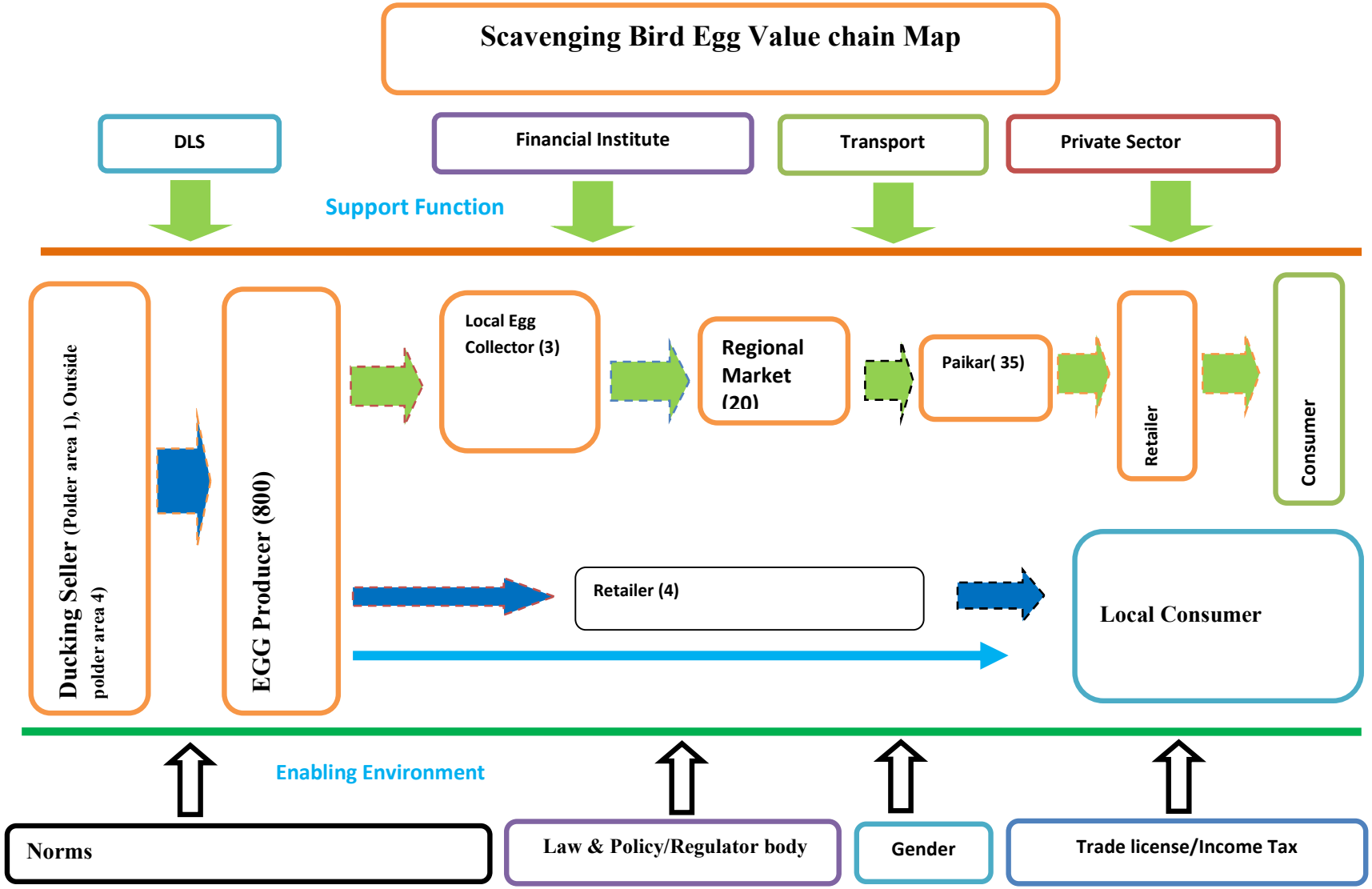
- Poor drainage and irrigation system in Polder area.
- Salinity problem in winter season.
- Unavailability of renown quality vegetables seed like Lal Teer , Metal, A.R Malik, United etc.
- Lack of Knowledge on Improved production technology of vegetables.
- Numbers of input sellers are very poor and embedded service are not always available and sometimes did not fulfill farmer's requirement.
- Lac of knowledge on Post harvest technologies. Grading and Transport, packaging.
- Low ability to investment on vegetables production.
- Unavailability of micro nutrient
- Weak market linkage

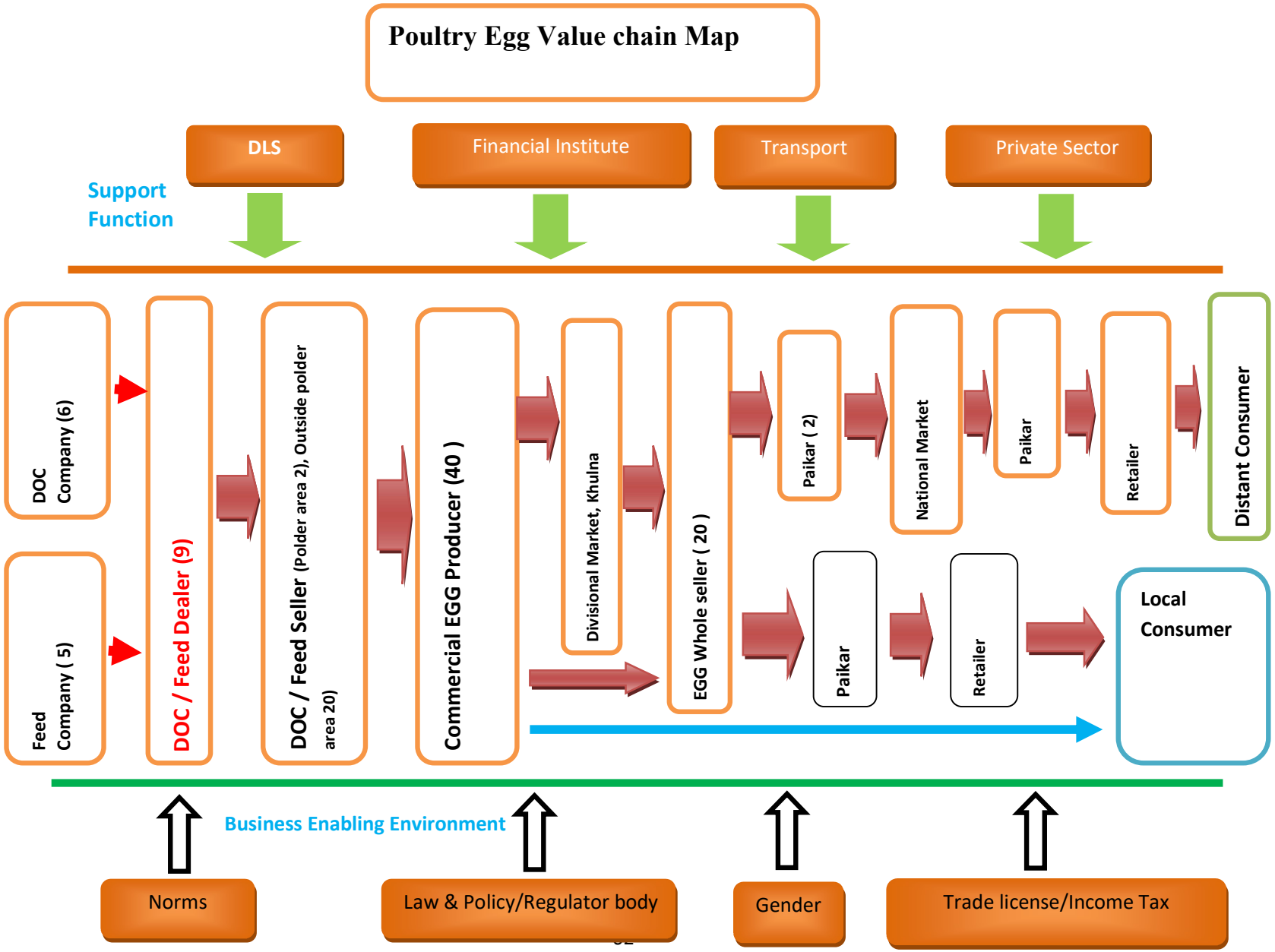
4.c. Potential VC map: For Polder 22 Potential VC are



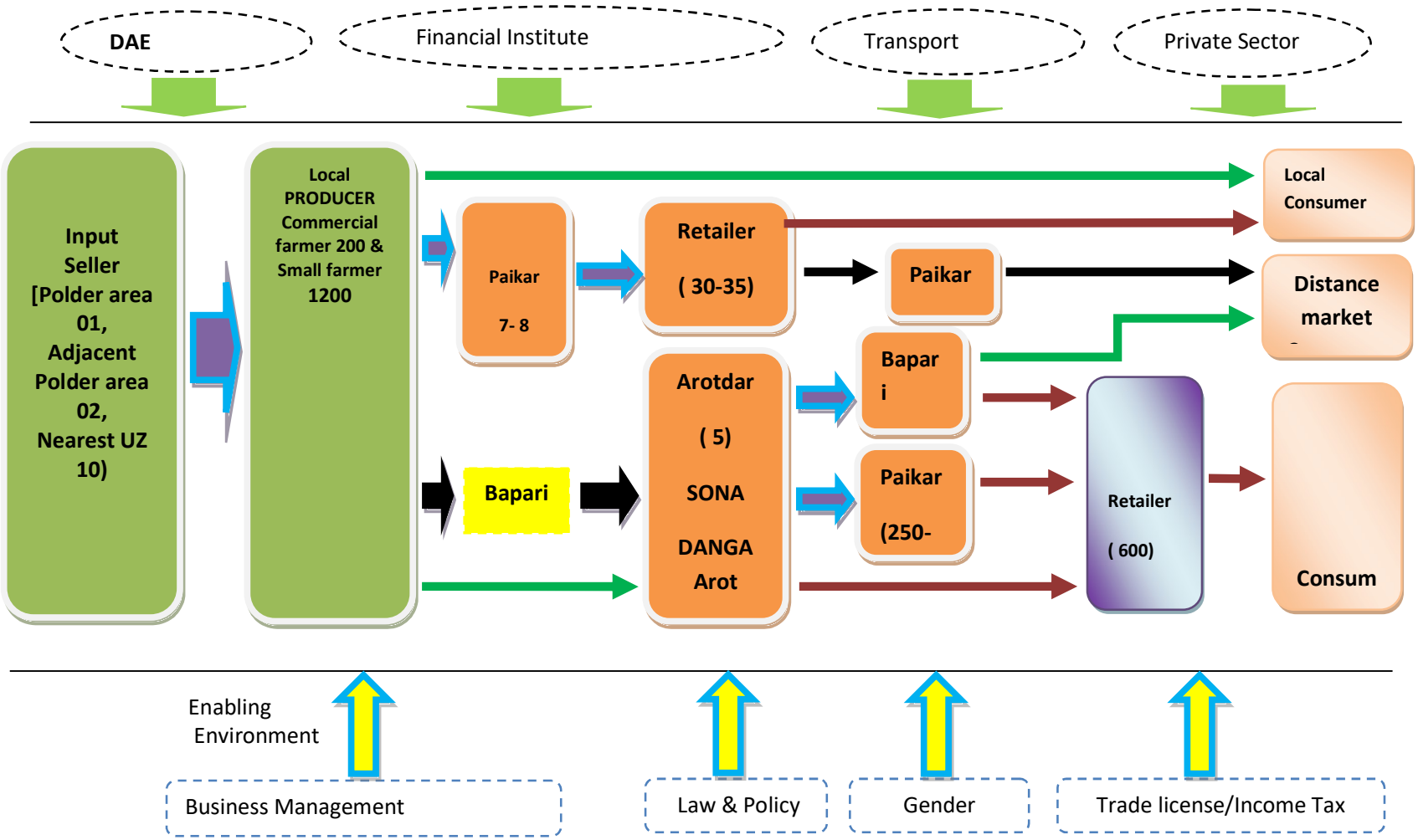
# Rice Value Chain Map

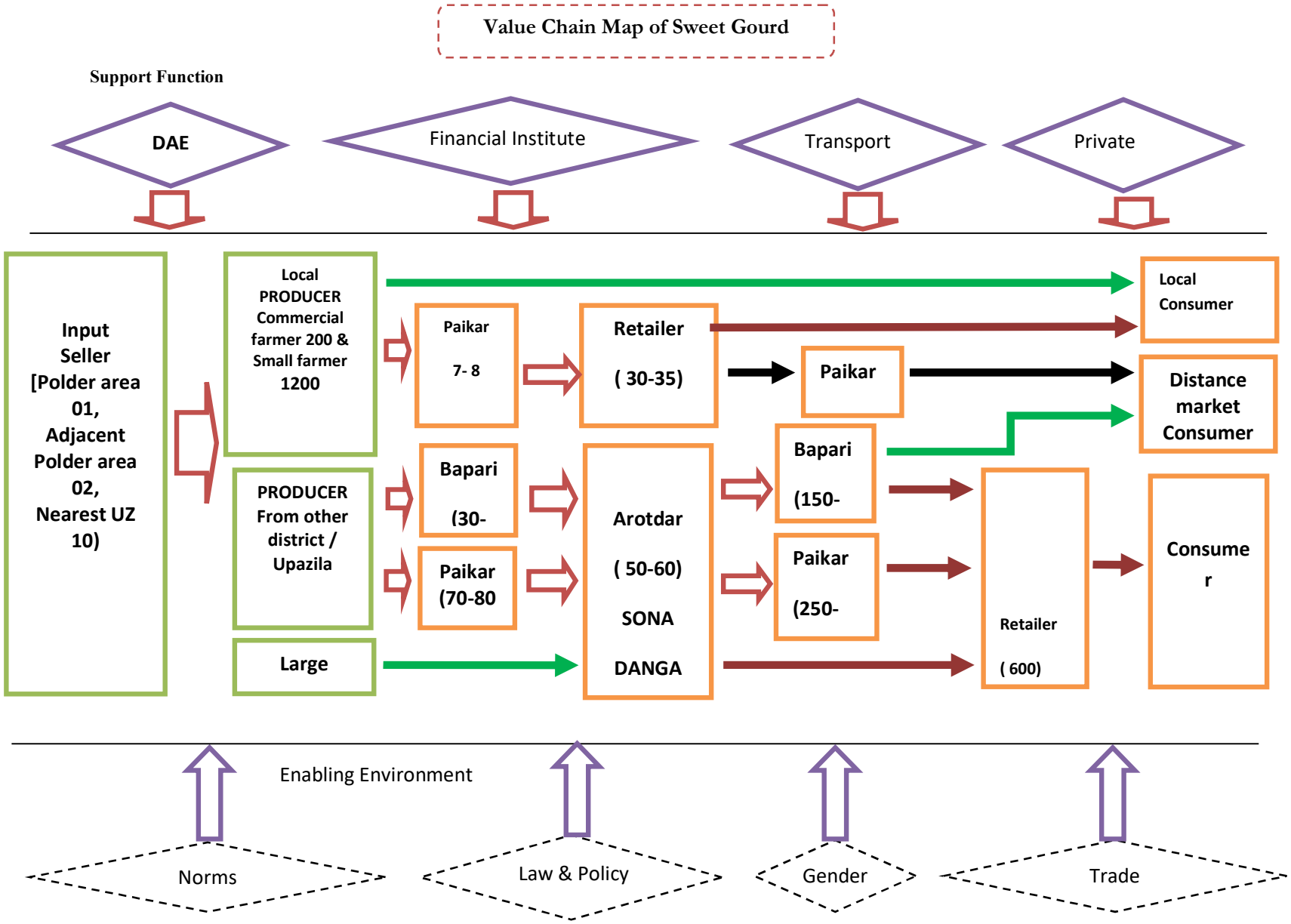


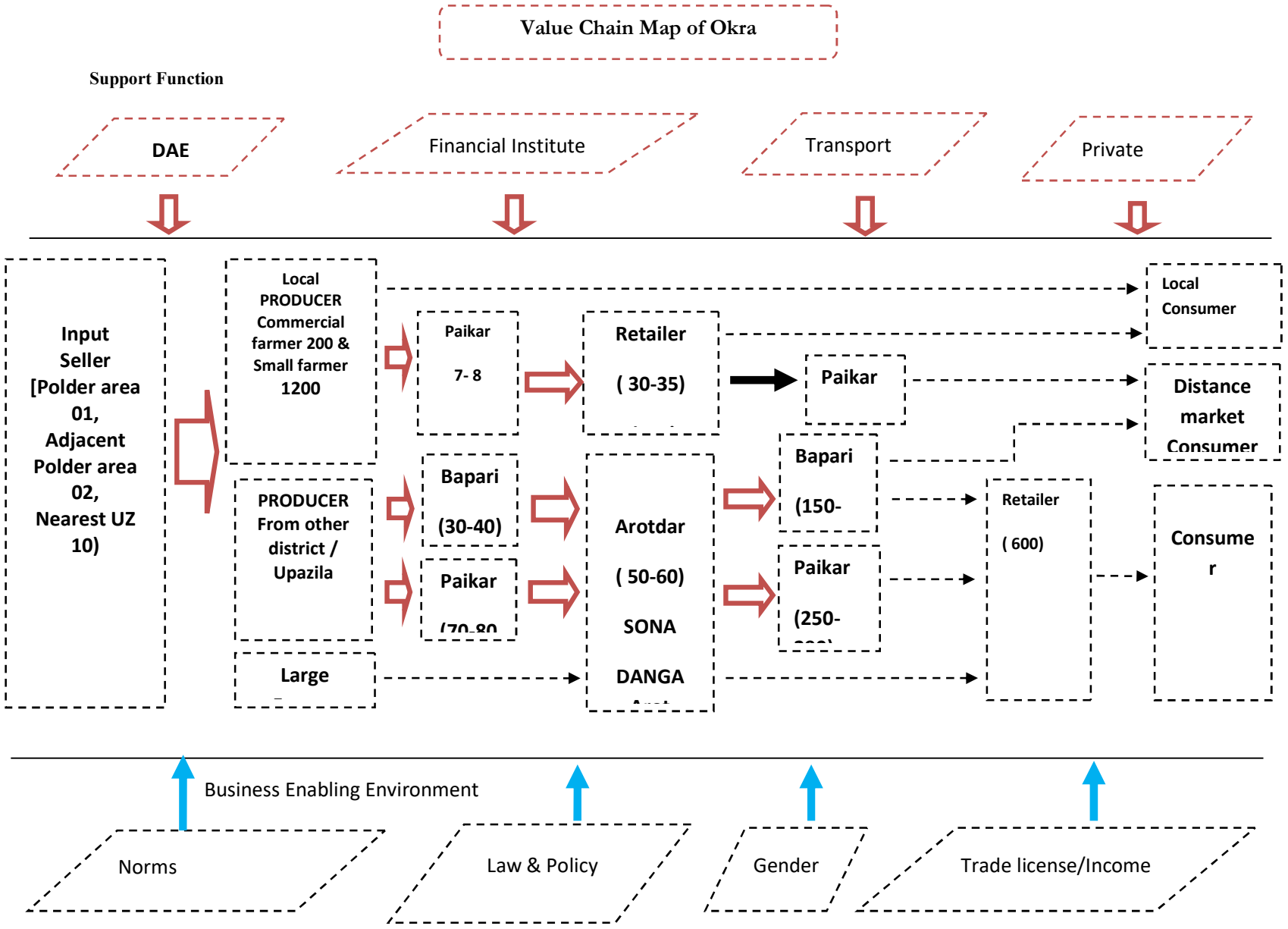

Scavenging Bird Egg Value chain Map
DLS
Financial Institute
Transport
Private Sector
Support Function
Ducking Seller (Polder area 1), Outside polder area 4)
EGG Producer (800)
Local Egg Collector (3)
Regional Market (20)
Paikar( 35)
Retailer
Consumer
Retailer (4)
Local Consumer
Enabling Environment
Norms
Law & Policy/Regulator body
Gender
Trade license/Income Tax


Poultry Egg Value chain Map
DLS
Financial Institute
Transport
Private Sector
Support Function
DOC Company (6)
Feed Company ( 5)
DOC / Feed Dealer (9)
DOC / Feed Seller (Polder area 2), Outside polder area 20)
Commercial EGG Producer (40 )
Divisional Market, Khulna
EGG Whole seller ( 20 )
Paikar ( 2)
National Market
Paikar
Retailer
Distant Consumer
Paikar
Retailer
Local Consumer
Business Enabling Environment
Norms
Law & Policy/Regulator body
Gender
Trade license/Income Tax

# Value Chain Map of Moringa Oleifera (Drum Stick)




Value Chain Map of Sweet Gourd
Support Function
DAE
Financial Institute
Transport
Private
Input Seller [Polder area 01, Adjacent Polder area 02, Nearest UZ 10)
Local PRODUCER Commercial farmer 200 & Small farmer 1200
PRODUCER From other district / Upazila
Large
Paikar 7- 8
Bapari (30-
Paikar (70-80
Retailer ( 30-35)
Arotdar ( 50-60) SONA DANGA
Paikar
Bapari (150-
Paikar (250-
Retailer ( 600)
Local Consumer
Distance market Consumer
Consume r
Enabling Environment
Norms
Law & Policy
Gender
Trade


Value Chain Map of Okra
Support Function
DAE
Financial Institute
Transport
Private
Input Seller [Polder area 01, Adjacent Polder area 02, Nearest UZ 10)
Local PRODUCER Commercial farmer 200 & Small farmer 1200
PRODUCER From other district / Upazila
Large
Paikar 7- 8
Bapari (30-40)
Paikar (70-80
Retailer ( 30-35)
Arotdar ( 50-60) SONA DANGA
Paikar
Bapari (150-
Paikar (250-
Retailer ( 600)
Local Consumer
Distance market Consumer
Consume r
Business Enabling Environment
Norms
Law & Policy
Gender
Trade license/Income

5 SWOT analysis of polder (agriculture, livestock and aquaculture)

| Strength | Weakness |
|---|---|
| Unmet demand of Sesame, Poultry egg, Vegetables<br>Easy connectivity to big markets.<br>Many Service Providers are present nearby the polder like - arotder, bepari, Paiker and Commission agents etc.<br>Private actors like seed company, feed company, exporter , processor are also available nearby polder area have shown interest to work with us.<br>Resilience capacity of polder dwellers are high.<br>Presence of MFI`s | Poor drainage and irrigation system.<br>Inadequate knowledge on improve production technology on Rice, Sesame, Poultry rearing, different vegetables.<br>Lack of quality inputs in polder area.<br>Lack of market information and weak market system.<br>Dependency on different relief or input support programs. |
| **Opportunity** | **Threat** |
| Opportunity to increase production, productivity and area coverage.<br>Opportunities to introduce new crop, improve varieties and new techniques.<br>Opportunity to linking with market actors and market systems to ensure better price.<br>Opportunity on collective actions.<br>Presence of WMGs and income from assets.<br>Savings by WMG members for investing in new business. | Disaster porn area.<br>Salinity problem during winter season<br>Landless and marginal HH % are high so adoption of new technologies and practices will be challenging. |

6 Connectivity

a) Mode and Cost for Transportation

| Vehicle type | From | To | Rent/ per person | For goods(40-50 Kg) |
|---|---|---|---|---|
| Nosimon/ Human holler | Fulbari | Darun mollik ghat | 15 | 15 |
| Motor cycle | | | 35 | 35 |
| Boat | | | 0 | |
| Horse puller | | | | |
| Van | | | 30 | 30 |
| Nosimon/ Human holler | Fulbari | Telikhali ghat | 10 | 10 |
| Motor cycle | | | 15 | |
| Boat | | | 0 | |
| Horse Cart | | | | |
| Van | | | 10 | |
| Nosimon/ Human holler | Fulbari bazaar | Darun mollik School | 15 | 15 |
| Motor cycle | | | 30 | 30 |
| Boat | | | 0 | |
| Horse Cart | | | | |
| Van | | | 30 | 30 |
| Mahindra | Fulbari | Khulna | 45 | |
| Motor Cycle | | | 65 | |
| Mahindra | Fulbari | Batiyag hata | 30 | |
| Motor Cycle | | | 40 | |
| Nosimon/ Human holler | | | 25 | |
| Boat | Darunmollik ghat | Fulbari bazaar | | 10 |
| Boat | Darunmollik ghat | Sholda na | 12 | 12 |
| Boat | Darunmollik ghat | Deluty | 4 | |
| Boat | Baroariya ghat | Paikga cha | 35 | |
| Boat | Baroariya ghat | Baroari ya bazar | 3 | 3 |

6.b. Mobile Coverage

All Mobile network coverage are available here-

- Grameen Phone
- Robi
- Airtel
- Banglalink
- City cell
- Telitalk

Around 85 % HH use mobile phone

6.c. Market Information

- ❑ People contact with Paikar ,Arotdar through Mobile Phone and collect product price.
- ❑ People when visit markets then meet with Local market actors and collect product price.
- ❑ Farmers also ask their neighbors who visit market earlier about different product prices.
- ❑ Farmers also discuses with their relatives about product prices.

6.d. E- Money transaction

In Polder area 3 B-Kash transaction centers are available. One Govt. Post office also has E-Money transaction facilities.

| Unit | Incoming | Outgoing | Remarks |
|---|---|---|---|
| Daily | Tk 12500 | Tk 6000 | |
| Monthly | Tk 375000 | Tk 180000 | |
| Yearly | Tk 500000 | Tk 160000 | |

7 Access to finance

| Sl.# | Source of Finance | Male% | Femalw% | Remarks |
|---|---|---|---|---|
| 1 | WMG | 75 | 25 | |
| 2 | NGO | 0 | 100 | |
| 3 | Local MFI | 60 | 40 | |

8 Gender

Criterion VC selection:

- ❖ Number of HH involved
- ❖ Women friendly
- ❖ Women labour based
- ❖ Increase women income
- ❖ Increase women contribution in production and decision making
- ❖ Increase women sales power
- ❖ Increase savings in MFI

8.1 Role of Man & Women in agriculture

At homestead:

- Seed bed preparation
- Fencing
- Seed preservation
- Seed sorting and seed processing for germination
- Seed sowing and seedling collection
- Intercultural operation
- Harvesting, fertilization, irigation, pesticide application
- Marketing

Livestock:

- Hatching arrangement for poultry
- Feeding cattle/poultry
- Rearing and Vaccination
- Goat rearing

Fish:

- Feeding
- Pond cleaning
- Harvesting

Field crop:

- Seedling collection
- Weeding
- Harvesting
- Seed sorting, storing and processing
- Transportation
- Threshing

Men's roles in agriculture:

- Ploughing and related work
- Seed collection, sowing and transplantation and related work
- Intercultural operation
- Harvesting and threshing and related work
- Sales and Marketing related work
- Pond preparation, fish cultivation, harvesting and sales related job
- Finger ling collection, preservation
- Catching fish, transportation, storage, sales
- Poultry farm operation related all work
- Feed , fertilizer, pesticide and medicine collection and use related job

8.2 Potential IGA for Women

- ❑ Poultry rearing, bird and Egg selling
- ❑ Drumstick selling
- ❑ Home stead vegetable production, collection and selling
- ❑ Small Grocery shop operating

9 Collective Action Issue

- Opportunity for Collective action
  - Rice-seed collection/ tillage/irrigation/ technology transfer/drying/storage/marketing
  - Sesame-seed collection/drying/storage/processing/marketing
  - Moringa -Roadside plantation/management/grading/marketing
  - Poultry Egg- service receiving/ egg collection/marketing
  - Sweet gourd- collection/storage/transportation/marketing
- <u>Benefit of collective Storage/drying/Marketing</u>
  - Tillage and irrigation can reduce cost.
  - Input purchase can ensure quality and reduce cost
  - Intercultural operation leads to higher production.
  - Easy to ensure support services
  - Collective storage for rice can ensure better price
  - Collective drying facility can be helpful for polder dwellers to reduce wastage and create opportunity to store for selling in favorable time
  - Drying facility helps them in seed preservation and timely threshing
  - Dry floor will be helpful for Sesame as it is harvested in rainy season, less sun will be required. Moisture problem will be reduced. Plastic net can be used.

- <u>Benefit of collective Storage/drying/Marketing</u>
  - Reduce transportation cost.
  - Attract the market actors and service providers (Egg collectors, retailers, vaccinators, etc)

- Collective effort in production, harvesting, grading and marketing can ensure high price for all agriculture product including Moringa.

- Benefit of collective Storage/drying/Marketing
  - Most of polder people drying sesame on soil floor, So that they get price less than others who dried sesame on blue net.
  - Collective effort is possible in packaging vegetables in plastic bags and transporting by mini truck or Nosimon.

10 Available Institutional Support

| Sl.# | Support Institute Name | Number | Remarks |
|---|---|---|---|
| 1 | Community Clinic | 1 | |
| 2 | High School | 3 | 2 High School( Co-education) and 1 Girls High school |
| 3 | Primary School | 8 | |
| 4 | Madrasa | 1 | |
| 5 | College | 1 | |
| 6 | Bank | 0 | |
| 7 | Post Office | 1 | Darun Mollick |
| 8 | Micro Credit Organization | 10 | ASA, BRAC, Grameen Bank, Fulbari bazaar Somobay sommitte, Dew Society, Dihi bura, Prodipon, Uttoron etc. |
| 9 | B-Kash | 3 | Fulbari bazaar,<br>Darul mollik |
| 10 | Deep Tubewell | 1 | Yet not started properly |
| 11 | Tubewell | 12 | |

11 . Different Actors From Polder 22

| Sl.# | Name | Business Name | Village | Mobile No. |
|---|---|---|---|---|
| 1 | Taposh Halder | Paddy Paikar | Fulbari | 01756 601383 |
| 2 | Siboprodo Mondal | Paddy Paikar | Telikhali | |
| 3 | Alek Sheikh | Paddy Paikar | Kalinagar | |
| 4 | Prodip | Egg Collector | Darun Mollick | |
| 5 | Md. Aslam | Egg Collector | Roypur | 01935 250979 |
| 6 | Nitai Sarder | Egg Collector | Gopi Pagla | 01770 533163 |
| 7 | Milon Golder Liton | Mini Pickup owner | | |
| 8 | Maikel Boiragi | Paravet | Bigordana | 01925 377410<br>01734 086879 |
| 9 | Subir Molick | Paravet | | |
| 10 | Mahabub Moral | Paravet | Soyedkhali | |
| 11 | Jibon | Paravet | | |
| 12 | Biswogeet Golder | Paravet | | 01916 676750 |
| 13 | Mr. Sujit Kumer Mondal | Paravet | | 01920 098085 |
| 14 | Tonmoy Golondaj | Poultry Feed Seller | Fulbari | 01911 153301 |
| 15 | Amreto Thikadar | Poultry Feed | Fulbari | 01720 002669 |
| 16 | Mr. Chinmoy Ray | Poultry Feed | | |
| 17 | Prosanto Baswass | Hat Lease owner | Fulbari | 01925 869715 |
| 18 | Subroto Roy | Horse Cart driver | Kalinagar | 01730 996207 |
| 19 | Md. Nasir Mollah | Rice Processor | Sayedkhali | |
| 20 | Nironjon Halder | Sesame Paiker | Fulbari | 01756 601383 |
| 21 | Punenda Sarker Roy | Seed & Fertilizer Seller | Kalinagor | 01732717873 |
| 22 | Samol Kanti Roy | Private Power Tiller Operator | Gopi Pagla | 01936 038988 |
| 23 | Shushanto Roy | Private Power Tiller Operator | Gopi Pagla | 01918 061395 |

| Sl.# | Name | Business Name | Village | Mobile No. |
|---|---|---|---|---|
| 24 | Sonjeeb Joyaddar | Mechanic | Fulbari bazaar | 01712 460589 |
| 25 | Nasir Molla | Mechanic | Fulbari bazaar | 01718 051453 |
| 26 | Abu Hossain | Mechanic | Fulbari bazaar | 01915 626027 |

12 Conclusion :

13 . Glossary:

| | |
|---|---|
| Actor / participant: | Smallholder, input supplier and output market players directly participating the value chain |
| Arotdar: | Service provider to Bepari and Pikers in wholesale markets. Facilitates the buy/sell process. May provide purchase negotiation assistance, storage space, selling space, short term and seasonal credit, and arrange truck transport of goods purchased by Bepari to markets |
| Bepari: | Key wholesaler in the supply chain. Moves goods between markets buying in source markets and selling in destination markets. Exerts the main influence on price earned by farmers |
| Business service: | Service that is sustainable through private sector transactions and that improves the performance of the value chain, its access to markets, and its ability to compete |
| Competitiveness: | The ability of a firm or value chain to achieve or maintain an edge over market rivals |
| Consumer: | User or buyer of service products offered by business service providers |
| Cost effectiveness: | The impact of a program intervention compared to its cost. A program is cost-effective if the ratio of benefits to costs is high |
| Demand: | The quantity and type of goods or services that buyers wish to purchase at any conceivable price |
| Donor: | The funding agency that pays for development activities |
| Enabling environment: | Provision of law, rules, policies, procedures favorable for the value chain to operate and grow |
| Facilitator: | International or local institutions, usually funded by governments or donors, that aim to expand |

| | |
|---|---|
| | and improve a value chain by enhancing capacity of smallholders and integrating them into quality input supply system and high value output markets |
| Governance: | Description of the dynamic distribution of power, learning, and benefits among participants in a value chain |
| Impact: | Sometimes called "effectiveness", this is the effect a service has on the SE client performance (i.e., that which can be attributed to the service itself, not to outside factors), or it is the broader economic and/or social effect of the intervention |
| Intervention: | The temporary, facilitative mechanism by which donors and facilitators try to effect change (typically a project or a program) |
| Market development based: | Activities that try to make the interaction between demand and supply more effective |
| Market transaction: | The exchange between demand and supply is at full market price (the price at which suppliers are prepared to sell and consumers are prepared to buy, in an unsubsidized situation) |
| Market: | A set of arrangements by which buyers and sellers are in contact to exchange goods or services—the interaction of demand and supply |

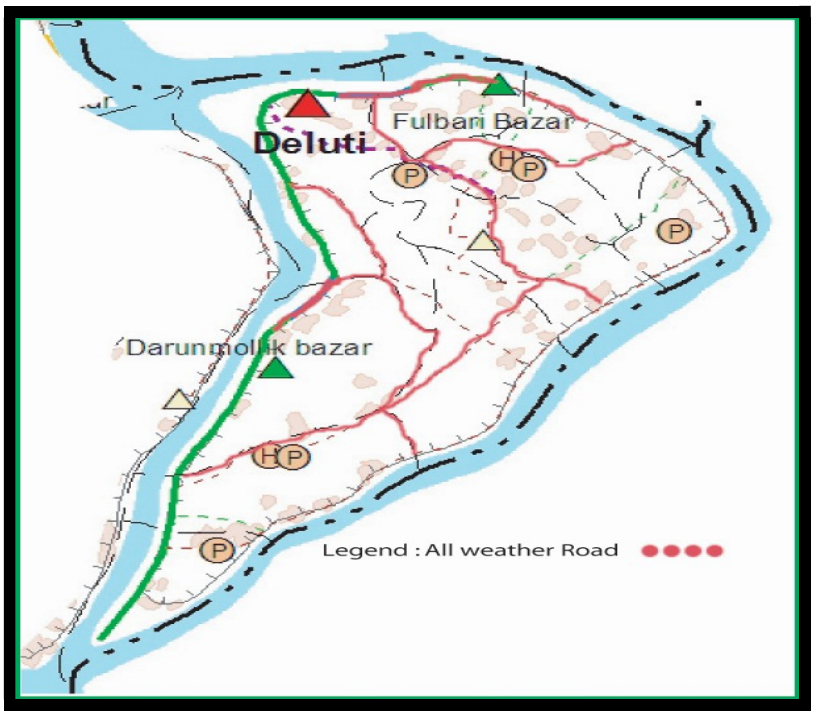
# 14. Annex: Some Picture

## 1. Polder 22 villages

2. Markets


Khalishpur
27/1
28/1
Sonadanga
KHULNA Sadar
27/2
28/2
26
29
Batiaghata
31
Fulbariya bazar
22
Darul Mollik bazar
31
N

3. All weather Road




4. Land use Map by Ministry of Land