# Blue Gold Program

# Technical Note 03

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# Technical Note 03

Benchmark Survey Report
Mung Bean-MFS

September 2015

Blue Gold Program

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# Issue and revision record

| Revision | Date | Originator | Checker | Approver | Description |
|---|---|---|---|---|---|
| Technical Note 03 | 14/09/15 | A.S.M. Shahidul Haque;<br>Tanvir Islam;<br>Md. Shaifullah;<br>Md. Rabiul Amin;<br>Karel T'Jonck | Guy Jones | Guy Jones | Final Draft of Technical Note 03 |

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| | |
|---|---|
| MFS | Market Oriented Farmer Field School |
| PG | Producer Group |
| PF | Producer Group Facilitator |
| ODK | Open Data Kit |

# 1. Introduction

Market Oriented Farmer Field School (MFS) is a new and innovative approach that has been designed jointly by the Food Security and Agricultural Production and Business Development components of the Blue Gold program. It is hoped that MFS will facilitate behavioural change of participating farmers[1] and help them to look beyond increasing production towards the productivity and profitability of farm production while considering the involved risks. MFS seeks to facilitate market linkages and therefore, enhances the farmers' understanding of the market system and the expansion of their network of market actors for inputs, technology, market information and finance. Blue Gold has been conducting 20 MFSs on Mung bean in polder 43/2D & 43/2F of the Patuakhali area.

A benchmark survey was designed to record Mung bean MFS farmers' status when initiating MFS activities. The findings of the survey provide specific insights about the characteristics of the Mung MFS farmers and key indicators related to production practice and market orientation. The outcomes help design interventions and steer field level activities. Over time, on seasonal basis, the results of progress survey data will record the change of farmers' behaviours and practices.

## 1.1 Background

The benchmark survey was planned for 500 selected Mung farmers in polders 43/2D & 43/2F where the MFS was first introduced. Collecting basic information was important for future outcome measurement. The MFS farmers were grouped in 20 MFSs located in separate catchments inside the selected polders. Each MFS with 25 producer farmers forms a PG (Producer Group). One PF (Producer Group Facilitator) facilitated 4 PGs (each PG forming one MFS) with 100 producer farmers. The benchmark was designed to collect information from these PG members on their present production practice and market orientations.

## 1.2 Objectives of the Survey

The objective of the benchmark survey can be summarized as:

- Collect personal information from PG farmers
- Define farmers' present production technology (input use, cultivation practices, harvesting and post harvesting practices etc)
- Introduce and define the farmers' crop budget (recording of expenses related to buying inputs, hiring labour, producing and marketing the crop, gross margin revenue and income)
- Assess farmers' level of market orientation
- Gauge the extend of business development and employment creation

[1] When we refer to farmers we consider both male and female farmers.

# 2. Survey Approach & Methodology

## 2.1 Approach

The benchmark survey was undertaken by interviewing each participating farmer individually at their household. A questionnaire was developed for this purpose. It contained both open- and close ended questions with single- or multiple answer options. The questionnaire was developed and converted in Open Data Kit (ODK) format. The form (xlm) was loaded in TABS. The PFs conducted interviews and recorded all the answers in TABs. The completed xlm forms were then checked and sent to the central server. The accumulated information was downloaded from the server in Excel files for analysis.

### 2.1.1 Primary Data Collection Tools

Data collected by using TABs with ODK software in xlm form.

### 2.1.2 Sample Size

500 farmers (100% of population of 500 farmers) grouped in 20 PGs; each has 25 members, under 20 MFSs and living in polders 43/2F & 43/2D.

## 2.2 Training of Enumerators (PFs) and pre-testing

A two day long training was conducted with PFs on collecting benchmark information using TABs with xlm forms. All the questions and the objectives behind these were explained to PFs to enable proper understanding by the PFs and to ensure appropriate information collection.

PFs were also taken to the field to conduct mock interviews with farmers. Based on feedback from the PFs on questionnaire and field trials, any necessary further adaptations were made. Herewith the form was finalized and subsequently installed on TABs for conducting the interviews with the farmers.

## 2.3 Benchmark Survey Process

Each of the PFs conducted the benchmark survey of the 100 farmers in the 4 MFS under their responsibility. They visited each farmer's house to conduct the interview sessions and recorded their answers. Five PFs conducted the benchmark survey of 500 farmers (total population). The whole process was completed over a period of 3-4 weeks simultaneously with the first MFS sessions.

## 2.4 Data Entry/Cleaning/Processing

After recording information and data in TABs, the concerned PFs handed over the TABs to the concerned BDCs. The BDCs transferred the completed forms from these TABs, to the central server at Dhaka office online. The accumulated data was then downloaded from the server to the laptop of BDC for cleaning. The BDCs checked for any mistakes in the data collection process. Thereafter the accumulated data in Excel format was analysed (sum, average, count) using simple formula to represent the overall situation of 500 farmers on different indicators.

## 2.5 Report Writing

Based on the analysis in Excel form, the benchmark report was prepared to make the survey results broadly accessible.

## 2.6 Limitation

This was the first attempt to conduct an MFS benchmark by using TABs with ODK software in xml form. It was a new experience for all, particularly for PFs, most of whom were not even familiar with the use of TABs. As also MFS was new to them, it was a challenge to understand the questionnaire, its objectives and to record the answers from the farmers. While not having been introduced to the concept of a crop budget yet, it was also a challenge for the farmers to recollect crop budget related information for last year's crop. Less teething problems than could be expected appeared due the great job done by the PFs and as a result the data quality is generally good. A technical problem did occur when transferring data online, and initially some date were lost. As a result, the analysis was undertaken with 494 forms to ensure the overall accuracy of information. Lessons learned have been identified and will help with further improving the data quality of future surveys.

# 3. Farmer Profile

## 3.1 Sample Population

Data analysis was done for 494 farmers (out of 500) with high level of accuracy and confidence level. Each farmer, the PG or MFS they belong to, the relevant WMG and the district is identified and can be sorted upon.

## 3.2 Age of the participants

Average age of the farmers in the benchmark was found to be 44.6 years. Of the total number of farmers, the oldest was 60 years and the youngest was 18 years.

| | Benchmark | |
|---|---|---|
| **Age** | **Year** | |
| **Maximum age** | **60** | |
| **Minimum age** | **18** | |
| **Average age** | **44.6** | |
| **Median** | **45** | |

## 3.3 Education

- 7% of the farmers are 'illiterate', while 18% only 'can sign'. These 25% farmers have to be supported by their educated family members or fellow producer group members to prepare crop budgets. They need to be closely supported by RFs and PFs.
- 45% of the surveyed farmers have 'up to primary' level of education. These farmers should be able to grasp simple calculations and keep record of their expenses and income. Some support from PF and RF is required.
- 20% have 'secondary' level education. 10% of the farmers had 'college and above' level education. These 30% can grasp record keeping and calculations and are in a position to help others.

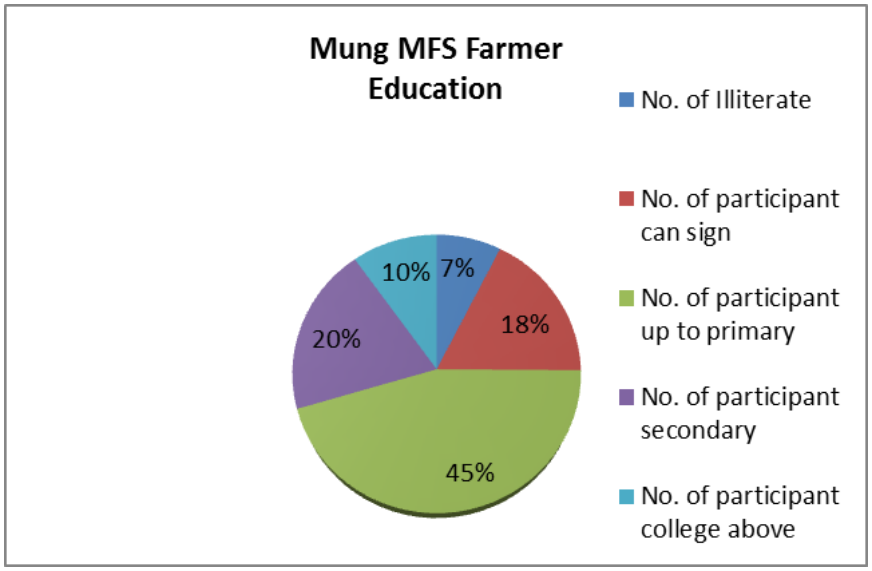



**Figure 1: Mung MFS Farmer Education**

| | Benchmark | |
|---|---|---|
| **Education** | **Number** | **%** |
| **Illiterate** | 37 | 7 |
| **Can sign** | 87 | 18 |
| **Up to primary** | 224 | 45 |
| **Secondary** | 97 | 20 |
| **College and above** | 49 | 10 |

## 3.4 Gender

88% of participating farmers were male and 12% were female[2].

| | Benchmark | |
|---|---|---|
| **Gender** | **Number** | **%** |
| **Male** | 437 | 88 |
| **Female** | 57 | 12 |

## 3.5 WMG Membership

It was found that 68% of all MFS members were also a member of WMGs while 32% were not WMG members at the time of survey.

| | Benchmark | |
|---|---|---|
| **WMG membership** | **Number** | **%** |
| **Yes** | 335 | 68 |
| **No** | 159 | 32 |

## 3.6 Land

### 3.6.1 Land ownership

The result shows that total land owned by the surveyed farmers was 111,370 decimal or 451 hectare. On average a farmer owns 225.45 decimal of land[3] or 0.91 ha. Of this total land ownership, 93,392

[2]These female farmers are in charge of Mung cultivation as de facto household heads (maybe due to illness of husband, absence of husbands or absence of any male member of the HH or being the producer by choice)

decimal or 83% was suitable for field crops. This corresponds with an average of 189.05 decimal per farmer or 0.76 ha. Meanwhile farmers, last year, cultivated Mung bean on 50,719 decimal of land or 205 ha, which is on average 102.67 decimal per farmer or 0.41 ha. So it seems that only 54% of the field crop land was being used for Mung bean cultivation. The remaining 46% of land remained fallow or was used for other crops.

| | Benchmark | |
|---|---|---|
| **Land Ownership** | **Decimal** | **Hectare** |
| Total land owned | 111,370 | 451 |
| Avg. Per farmer | 225.45 | 0.91 |
| Land for field crop | 93,392 | 378.10 |
| Avg. Farmer land for field crop | 189.05 | 0.76 |
| Mung cultivation land | 50,719 | 205 |
| Avg. Farmer Mung cultivation land | 102.67 | 0.41 |
| **Individual Farmer Land Ownership** | **Decimal** | **Hectare** |
| Highest | 1480 | 5.99 |
| Lowest | 20 | 0.08 |
| Median | 180 | 0.73 |
| **Land Ownership Type** | **Number** | **%** |
| Own land | 444 | 92.4 |
| Leased land | 31 | 7.4 |
| Sharecropping land | 19 | 4.6 |

Land ownership varies substantially among surveyed farmers. The maximum land holding by a farmer is 1,470 decimal and the smallest land holding by a farmer is only 20 decimal. The median of land ownership across the surveyed farmers is 180 decimal.

Of the land used for mung bean cultivation nearly 92.4% is own land, 7.4% (31 farmers) is leased and 4.6% (19 farmers) is based on sharecropping. The total exceeds 100%. It is probably due to the fact that some farmers can cultivate Mung on both own and lease hold land and can engage in sharecropping on other land (maybe in other combinations as well ) at the same time.

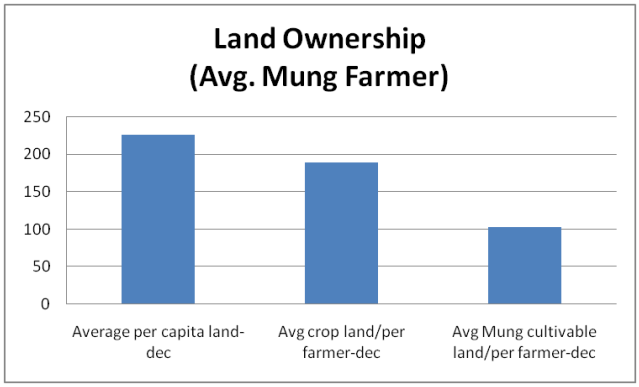



**Figure 2: Land Ownership (Avg. Mung Farmer)**

### 3.6.2 Land Type

17% of farmers reported that they cultivated Mung bean on high land, 68% on medium land and 16% on low land. Clearly Mung bean cultivation covers mostly medium land due to the moisture situation at the time of tilling and sowing. At polder level, most land is considered medium with some low land and very little high land. High lands are covered with different types of vegetable, chilli, groundnuts , sweet potato etc. Low lands remain mostly fallow.

[3]To put this in perspective: PG members generally come from amongst the 29% of the HH who own more than 1 acre of land, and to the 15% and 30% of HH who respectively assessed themselves as having a food surplus or not having a food deficit (source HH survey 2014).

| | Benchmark | |
|---|---|---|
| **Land Type** | **Decimal** | **%** |
| **High** | 8622 | 17 |
| **Medium** | 34489 | 68 |
| **Low** | 8115 | 16 |

## 3.7 Farming Assets

At least 14 farmers (of the total of 482) had Power tillers (2.9%), while 6 farmers or 1.2% had irrigation pumps (LLP) and 11% of farmers had harvesting sheet. Meanwhile, 80% of the farmers confirmed that they do not possess any of the farming assets listed in the questionnaire. However 6% have said that they actually have 'other' farming assets not listed in the questionnaire (most probably small farming tools).

| | Benchmark | |
|---|---|---|
| **Farming Assets** | **Number** | **%** |
| **Power tiller** | 8 | 2.9 |
| **Irrigation pump** | 6 | 1 |
| **Harvesting sheet** | 54 | 11 |
| **None of them** | 387 | 80 |
| **Others** | 29 | 6 |

# 4. Production Practice

## 4.1 Land Preparation

### 4.1.1 Land Condition Last Year at Mid-January

When enquired about the land condition in terms of ready or not at the Middle of January, considered to be the optimal time for Mung sowing, none considered the land 'still flooded', but 2.6% said that the 'previous crop was not harvested' yet, while 64.2% answered that the land was 'ready to plough' and 33.2 % recalled that the land was actually 'ready to sow' middle of January last year. Conditions generally allowed the 2014 season to start in the optimal period.

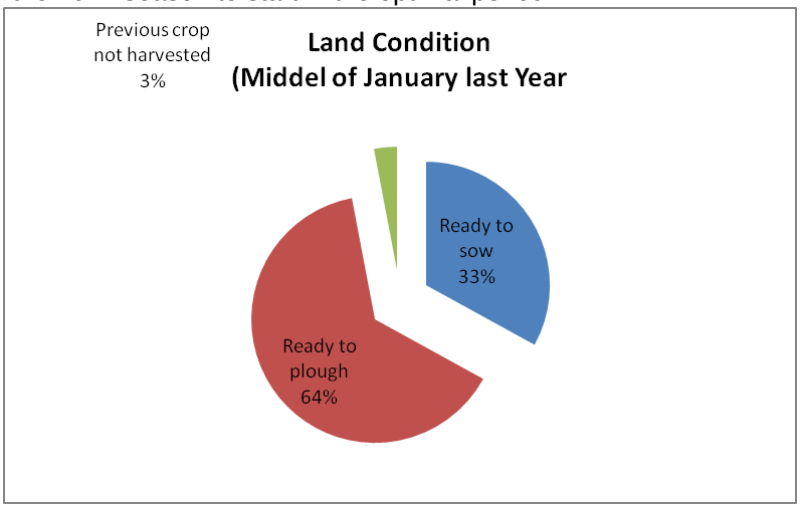



**Figure 3: Land Condition (Middle of January Last Year)**

| | Benchmark | |
|---|---|---|
| **Land condition-Mid January** | **Number** | **%** |
| **Land still flooded** | 0 | 0 |
| **Previous crop not harvested** | 13 | 2.6 |
| **Ready to plough** | 317 | 64.2 |
| **Ready to sow** | 164 | 33.2 |

### 4.1.2 Tillage and Sowing Date (Last year by MFS farmers)

Farmers generally sow seed after first tillage (first pass) or at the time of second tillage (second pass) to take advantage of soil moisture. In some cases farmers might just have to wait for one/two days before the second pass. The soil dries up very quickly in the region. Thus tillage date and sowing date is the same for nearly all farmers and survey results for tillage date and sowing dates are presented at once.

Out of 490 farmers, only 5% of farmers had tilled & sowed their land before Jan 20$^{th}$ (starting from January 5$^{th}$, the ideal sowing time), while 19% of the farmers tilled & sowed their land after January 20$^{th}$ but before January 31$^{s}$. The bulk of the surveyed farmers, 46% performed tillage and sowing for Mung bean within the period of February 1$^{st}$ to February 10$^{th}$. Moreover, 22% farmers tilled & sowed

land between the period of February 10th and 20th. Another 7% farmers had completed tillage & sowing between February 20th and 28th. Only 1% of the farmers have claimed to have tilled & sowed their Mung land in the first week of March.

So, it seems that farmers were tilling & sowing land from the beginning of January to the first week of March. Despite the fact that the land of most farmers was ready 95% of the surveyed farmers did not perform tillage and sowing within the optimal period from 5 to 20th of January. This might be related to mechanisation and needs to be further investigated.

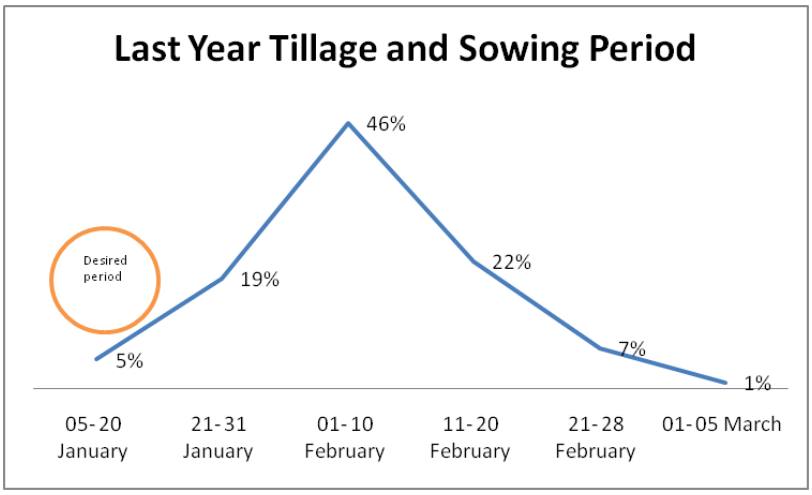



**Figure 4: Last Year Tillage and sowing Period**

| | Benchmark | |
|---|---|---|
| **Tillage and sowing Time** | **Number** | **%** |
| **05-20 January** | 26 | 5 |
| **21-28 January** | 93 | 19 |
| **1-10 February** | 228 | 46 |
| **11-20 February** | 109 | 22 |
| **21-28 February** | 32 | 7 |
| **01-05 March** | 4 | 1 |

### 4.1.3 Tillage services

All farmers till their land and usually use hired tillage services for land preparation as only few farmers (2.9%) have their own tillers. Called upon tillage services to prepare 50,719 decimal of land amounted to Tk. 1,224,713. On average each farmer spent Tk. 2,479 for tillage purpose. Average per farmer per acre tillage charge is Tk. 2,415.

| | Benchmark | |
|---|---|---|
| Tillage Service Cost | **Taka** | **%** |
| **Total Tillage Cost** | 1,224,713 | |
| **Hired Tillage cost** | 1,189,276 | 97 |
| **Own Tillage cost** | 35,437 | 3 |
| **Average Tillage cost per farmer** | 2,479 | |
| **Tillage cost per acre** | 2,415 | |

## 4.2 Seed Utilisation

### 4.2.1 Seed Varieties

97% of the respondent farmers (481 farmers) have confirmed that they used a local variety of Mung seed last year. Only 2% farmers (8 farmers) had used Bari 6 seed and this along using local varieties. Use of other high yielding varieties was even less significant (only 2 farmers had used Bari 5 seed and one used some Bari 5 seed along with local variety. Only 2 farmers had used HYV varieties other than a BARI variety e.g. from BINA. This leaves a huge potential for promoting HYV seeds among farmers and have an impact on income generation.

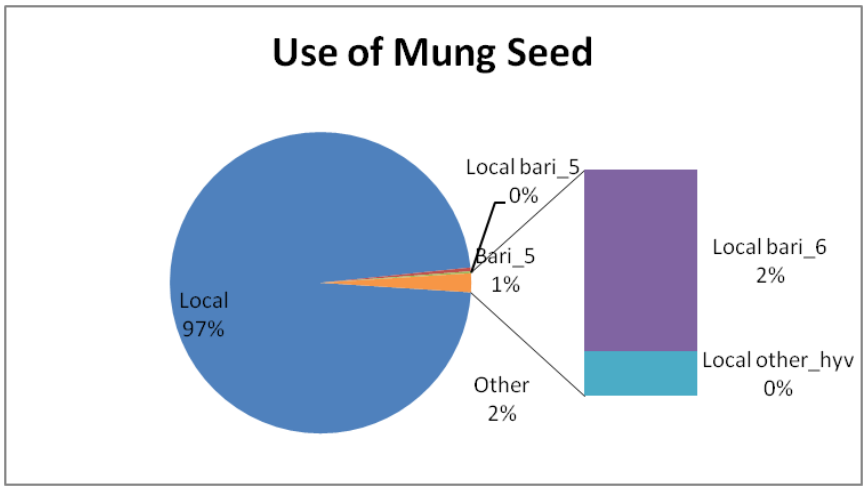



**Figure 5: Use of Mung Seed**

### 4.2.2 Seeding Methods

When asked about the seeding methods they applied last year, 98% of the farmers said that they had broadcasted seed, while only 6 farmers (1.2%) had tried line sowing with broadcasting on a trial basis and only 3 farmers (0.6%) had practiced line sowing last year. There is a big opportunity to influence the seeding method and encourage farmers to switch from just broadcasting to line sowing to improve productivity.

| | Benchmark | |
|---|---|---|
| **Seed Type** | **Number** | **%** |
| **Local** | 481 | 97 |
| **Bari 6** | 0 | 0 |
| **Local and Bari 6** | 8 | 02 |

| | Benchmark | |
|---|---|---|
| Seeding Method | **Number** | **%** |
| **Broadcast** | 485 | 98 |
| **Broadcast and line** | 6 | 1.2 |
| **Line** | 3 | 0.6 |

### 4.2.3 Seed source and use

MFS farmers have used 3,877 kg of seed valued at Tk. 359,965. Average price for used seed is Tk. 92.85. Mung farmers use 7.64 kg of seed per acre of land which is lower than BARI prescribed rate of 12 Kg per acre.

476 (98%) farmers have used their own seed, preserved from last year's crop. They used 3,773 kg of Mung seed with average price of Tk. 89.27 per kg with a total value of Tk. 350,005. Only one farmer collected two kg of seed from an NGO valued at Tk. 200. Seed worth only Tk. 9,760 (102 kg) was purchased from markets by 17 farmers.

| | Benchmark | |
|---|---|---|
| **Seed Use** | **Number** | **Taka** |
| **Total Seed Cost** | 494 | 359,965 |
| **Seed cost-own** | 476 | 350,005 |
| **Seed cost-purchased** | 17 | 9,760 |
| **Seed cost-NGO per kg-Tk** | 1 | 200 |
| **Average seed cost per kg-Tk.** | | 92.85 |
| **Average seed use per acre-kg** | | 7.64 |

## 4.3 Irrigation

### 4.3.1 Availability of Water for Irrigation

When asked if water was available nearby the field when needed, 69% agreed that there was a source of water nearby but 31% did not have water sources close enough to field.

| | Benchmark | |
|---|---|---|
| **Availability of water for irrigation** | **Number** | **%** |
| **Yes** | 343 | 69 |
| **No** | 151 | 31 |

### 4.3.2 Irrigation water utilisation

None of the surveyed farmers irrigated their Mung bean field while water was perceived to be available to two thirds amongst them.

| | Benchmark | |
|---|---|---|
| **Irrigation water utilization** | **Number** | **%** |
| **Yes** | 0 | 0 |
| **No** | 494 | 100 |

## 4.4 Fertiliser utilisation

98% of the surveyed farmers indicated that they did not use fertilizer for growing Mung.

| | Benchmark | |
|---|---|---|
| **Fertilizer use** | **Number** | **%** |
| **Yes (%)** | 11 | 2 |
| **No (%)** | 483 | 98 |
| Fertilizer Type | **Number** | **Kg** |
| **Urea** | 9 | 290 |
| **TSP** | 7 | 247 |
| **MoP** | 7 | 162 |

The 2% of farmers that used fertilizer together only used 699 kg. That is broken down as follows: Only 9 farmers used 290kgs of Urea (average per farmer 31.36 kg whereas BARI prescribed dosage is 16kg per acre), followed by 7 farmers used 247 kg of TSP (average per farmer 34.36 kg whereas BARI prescribed dosage is 40 kg per acre) and 7 farmers used 162 kg of MoP (average per farmer 22.55 kg which is more than BARI prescription of 15kg per acre) alongside a very nominal quantity of other fertilizers.

| | Benchmark | |
|---|---|---|
| **Fertilizer Use Rate** | **Average Farmer (Acre)** | **BARI prescription (Acre)** |
| **Urea-kg** | 31.36 | 16 |
| **TSP-kg** | 34.36 | 40 |
| **MoP-kg** | 22.55 | 15 |
| **Borax-kg** | 0 | 3 |

The benchmark survey shows the 2% MFS farmers combined have spent Tk. 14,948 for fertilizer purchase. On average, the farmers who actually used fertilizer for Mung cultivation spent Tk. 1,399 on fertilizer. 23% of total amount spent on fertilizer was used for purchasing TSP, 19% for Urea and 8% for MoP.

## 4.5 Source and use of Chemicals

A total of 454 farmers have used pesticides, one farmer used fungicide and no farmer used herbicide for Mung cultivation. Farmers spent Tk. 378,216 on chemicals (Tk. 378,016 on insecticide use). On average each farmer spent Tk. 833 on insecticide for mung cultivation. Only fungicide worth Tk. 200 was spent by one farmer. On average Tk. 746 was used per acre for chemicals.

| | Benchmark | |
|---|---|---|
| **Chemical Use** | **Number** | **%** |
| **Pesticide** | 454 | 92% |
| **Fungicide** | 2 | 0 |
| **Herbicide** | 0 | 0 |

When asked about the location from where they purchase pesticides, 92% farmers purchase the required pesticides from local providers (input sellers in local markets), 4% purchase from regional input shops (can be situated at upazila level markets) and 3% claim that they collect pesticides from both the local provider and regional markets.

| | Benchmark | |
|---|---|---|
| **Location of Chemical purchase** | **Number** | **%** |
| **Local provider** | 431 | 92 |
| **Regional market** | 20 | 4 |
| **Local provider regional market** | 15 | 3 |

## 4.6 Weeding

Only 1 farmer has been weeding once and one other has claimed to have been weeding twice.

| | Benchmark | |
|---|---|---|
| **Weeding** | **Number** | **%** |
| **Yes** | 0 | 0 |
| **No** | 494 | 100 |

## 4.7 Labour

Farmers incur labour cost for land preparation, sowing, weeding, harvesting and drying. A total of Tk. 977,245 was spent by farmers for hiring labour to cultivate Mung, which is on average Tk. 1,978 per farmer (on average Tk. 1,927 per acre). On the other hand farmers used own labour valued at Tk. 465,431 for Mung production which is on average Tk. 942 per farmer (Tk. 918 per acre).

- Farmers have to employ both hired labour and own labour at the time of land preparation. Farmers incur Tk. 215 for hired labour to prepare land per acre. At the same time own labour can be valued at Tk. 193 per acre of land.
- Sowing is mostly done by own labour. Farmers spent limited time in broadcasting seeds. The own labour value for sowing one acre of land is estimated at Tk. 33.
- Own weeding labour cost was calculated at Tk. 5.93 per acre.

- Harvesting of Mung is labour intensive. Farmers had to engage both hired and own labour at the time of harvesting. Expenses estimated to harvest one acre of land by hired labour is Tk. 1,646 and own labour is Tk. 646.
- Drying labour cost of Mung produced in one acre of land is Tk. 66 for hired labour and Tk. 40 for own labour.

| | Benchmark | |
|---|---|---|
| Labour Cost | **Hired Labour (Tk.)** | **Own Labour (Tk.)** |
| **Land preparation** | 108,800 | 97,700 |
| **Sowing** | 0 | 16,858 |
| **Weeding** | 0 | 3,008 |
| **Irrigation** | 0 | 0 |
| **Harvesting** | 835,095 | 327,715 |
| **Drying** | 33,350 | 20,150 |
| **Crushing** | 0 | |
| **Cleaning** | 0 | |
| Total | **977,245** | **465,431** |

A total of 3,257 man days of hired labour was needed (considering a labour rate of Tk. 300 per day) for cultivating Mung by MFS farmers. An additional 1551 own man days were utilized for the same cultivation (only considered if there was an opportunity cost for the farmer and family members).

- Farmers used a total of 363 man days of hired labour service along with 326 man days of labour for land preparation.
- Sowing is mostly done by own labour. Farmers spent 56 man days of own labour for sowing.
- 10 man days of own labour was utilized for weeding.
- Harvesting of Mung is labour intensive. Farmers had to engage both hired and own labour at the time of harvesting. Hired man days are calculated at 2,784 and own labour is 1,092 man days.
- Drying of Mung also requires both hired and own labour. A total of 111 man days of hired labour and additional 67 man days of own labour requires for Mung cultivation.

| | Benchmark | |
|---|---|---|
| **Labour Days** | **Hired Labour (Man day)** | **Own Labour (Man Day)** |
| **Land preparation** | 363 | 326 |
| **Sowing** | 0 | 56 |
| **Weeding** | 0 | 10 |
| **Irrigation** | 0 | |
| **Harvesting** | 2,784 | 1,092 |
| **Drying** | 111 | 67 |
| **Crushing** | 0 | 0 |
| **Cleaning** | 0 | 0 |
| Total | **3,257** | **1,551** |

# 5. Marketing Behaviour

## 5.1 Post-harvesting practice

14% of the farmers already used plastic nets for drying (or post harvesting) Mung seeds.

| | Benchmark | |
|---|---|---|
| **Use of Plastic net as post-harvest Practice** | **Number** | **%** |
| **Yes** | 69 | 14 |
| **No** | 425 | 86 |

## 5.2 Sales volumes and gross income

Total production last year as reported by farmers is 116,836 kg (116.84 MT) which is on average 0.23 MT per acre. Average sales price for locally produced Mung last year was estimated to be Tk. 80[4] per kg (on average Tk. 80,000 per MT). Revenue or income per farmer from one acre of land is Tk. 18,920 and a farmer can make a profit of Tk. 10,608 by selling his Mung produce.

| | Benchmark | |
|---|---|---|
| **Production & Sales** | **MT** | **Taka** |
| **Quantity sales** | 116.84 | |
| **Average per farmer sales** | 0.24 | |
| **Average production per acre** | 0.23 | |
| **Average sales price per MT** | | 80,000 |
| **Average income per acre** | | 18,429 |
| **Average net profit per acre** | | 10,332 |

## 5.3 Perception on last Year's Production

With an average production of 230 kg or 5.9 maunds per acre, about 89% of the farmers thought that they had an 'average' harvest last year. Only 2.4 % of the farmers referred to last year's harvest as 'poor', while the rest of the farmers, 8.5% considered last year's harvest as 'good'.

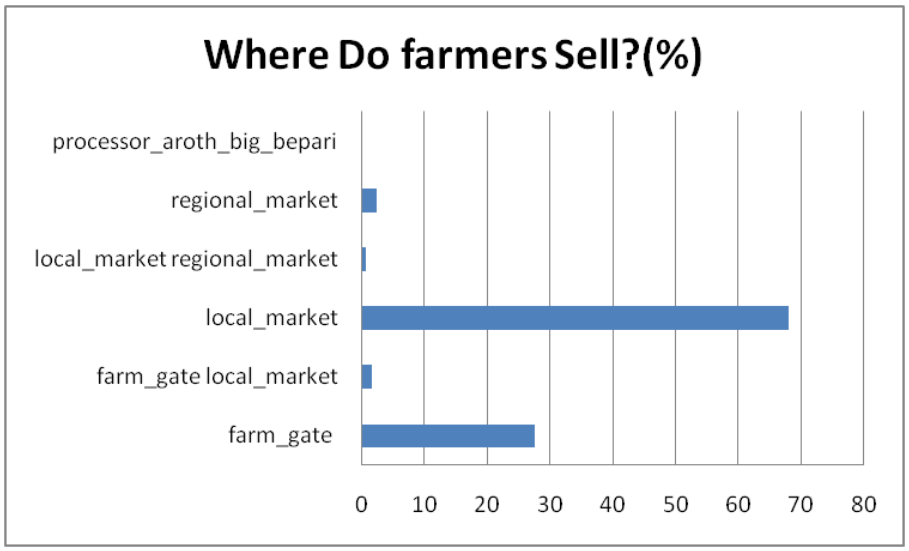
| | Benchmark | |
|---|---|---|
| **Perception about production** | **Number** | **%** |
| **Poor** | 12 | 2.4 |
| **Average** | 440 | 89 |
| **Good** | 42 | 8.5 |

## 5.4 Sales Point

When enquired about the transaction point of their produce, only 2% of the farmers claim to have sold at the regional market, 68% said they sold at the local market, and 28% of the farmers indicated that they sold at farm gate.

[4] Last year Mung Bean price was high. Tk. 80 per kg was considered as an average price for Mung farmers under Mung MFS.

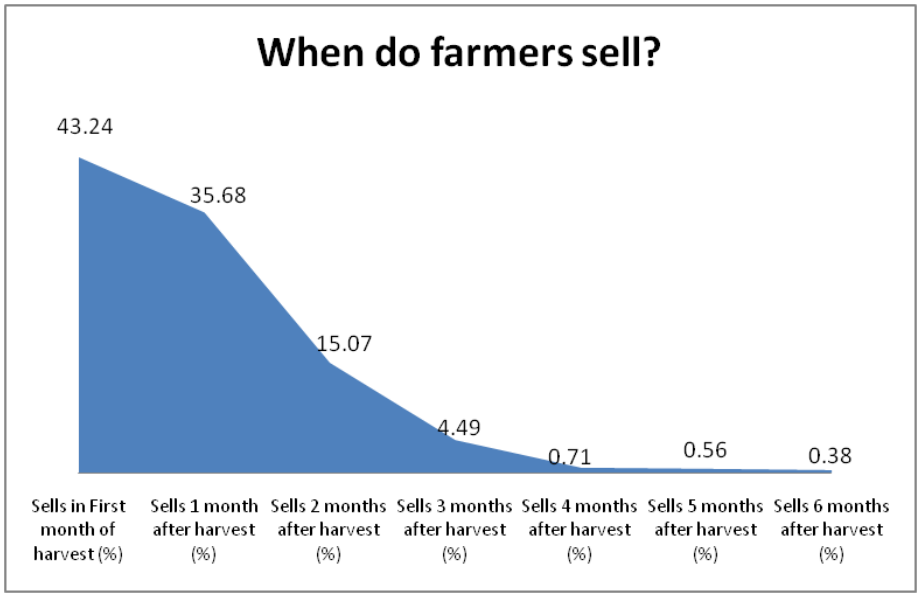
Another 2% of the farmers sold their product at both farm gate and local market, while 1% farmer sold at both the local and regional market.




| | Benchmark | |
|---|---|---|
| **Sales Point** | **Number** | **%** |
| Farm gate | **136** | **28** |
| Local market | **336** | **68** |
| Regional market | **11** | **2** |
| Farm gate and local market | **8** | **2** |
| Local and regional market | **3** | **1** |
| Processor arot bepari | **0** | **0** |

## 5.5 When do farmers sell?

The survey results show that 43.24% of the produce is sold by the farmers just after the harvest (i.e. in the month of harvest), 35.68% of produce is sold within one month after harvesting, 15.07% of the product is sold within two months and the rest of the produce (5-7%) is sold after 3 months and more.



| | Benchmark | |
|---|---|---|
| Sales Time | **Number** | **%** |
| **First month** | 340 | 43.24 |
| **Second month** | 336 | 35.68 |
| **Third month** | 212 | 15.07 |
| **Fourth month** | 82 | 4.49 |
| **Fifth month** | 18 | 0.71 |
| **Sixth month** | 8 | 0.56 |

## 5.6 Use of transportation

When asked if they use transportation for marketing mung bean, 58.7 % of farmers answered 'yes'. Of the farmers who used transportation for marketing, 81% use a 'nosimon' (locally manufactured engine driven cart), while 18% uses rickshaw vans.

| | Benchmark | |
|---|---|---|
| **Use of Transportation for Sales** | **Number** | **%** |
| **Yes** | 290 | 58.7 |
| **No** | 204 | 41 |
| **Transportation Type** | Number | % |
| **Nosimon** | 231 | 81 |
| **Rickshaw** | 53 | 18 |

# 6. Support

## 6.1 Collective Action

None of the respondents indicated to have been engaged in any systematically organised collective action.

| | Benchmark | |
|---|---|---|
| **Collective Action** | **Number** | **%** |
| **Yes** | 0 | 0 |
| **No** | 494 | 100 |

## 6.2 Advice received (on Seed, Fertilizer & Pesticide)

When asked if they received any advice regarding the use of seed, fertilizer and pesticide, almost all farmers indicated they did not get any advice on the use of seed or fertilizer. Only 2 farmers responded to have taken advice on seed, 4 farmers on the use of fertilizer and 10 farmers on the use of pesticides.

Out of the total of 494 farmers only 4 (0.80%) have recalled receiving support from the extension department.

| | Benchmark | |
|---|---|---|
| **Advice Received** | **Number** | **%** |
| **Yes** | 4 | 0 |
| **No** | 490 | 100 |

# 7. Financial Management

## 7.1 Loan Status

Farmers usually do not take a loan for their Mung cultivation. Only 1% of the farmers (only 4) reported that they had taken a loan for Mung cultivation.

Of the 4 loan recipients, two took a loan from MFIs that were not listed in our questionnaire. One took a loan from ASA, the total loan amount was Tk. 3,000 and the weekly instalment amount was Tk. 100 to be repaid in 46 weeks. Another farmer took a loan from a Dadon (local money lender), the loan amount was Tk. 3,000 with 70% interest.

| | Benchmark | |
|---|---|---|
| **Loan Received** | Number | % |
| **Yes** | 4 | 0 |
| **No** | 490 | 100 |

## 7.2 Record keeping by farmers

Farmers do not keep any formal record about their incurred costs related with Mung cultivation. Only 1 out of 494 farmers claimed to keep any formal record of expenses. The person keeps his records in a small diary. Farmers are not used to keep track of their expenses. There is scope to motivate farmers to keep records of their expenses in production process and income from sales. It is vital to change farmers' record keeping behaviour in order to transform them into business minded farmers.

| | Benchmark | |
|---|---|---|
| **Record Keeping** | **Number** | **%** |
| **Yes** | 1 | 0 |
| **No** | 493 | 100 |
| **Method of Record Keeping** | | |
| **Dairy** | 0 | 0 |
| **Notebook** | 1 | 0 |

# 8. Crop Budgets of Pg (MFS) Farmers

The benchmark survey attempted to record farmers' crop budget. We sought to record last year's Mung cultivation expenditure and revenue. Detailed information related to farmers' inputs and output was recorded from memory, as virtually none had records.

## 8.1 Economic impact of the 20 producer groups

A summary of 494 surveyed farmer's crop budget (the amount spent on purchasing inputs, utilizing external and own labour, and other relevant costs related with processing, marketing, transportation and labour opportunity cost as well as land leasing cost is presented in the table below:

## Crop Budget of MFS Farmer Under Mung-MFS

| Expense Head | Unit | Quantity | Unit Cost (Tk.) | Total Cost (Tk) | G. Total (TK) |
|---|---|---|---|---|---|
| ***Acreage under Mung Bean -MFS*** | Decimal | 50,719 | | | |
| ***Land preparation Charges*** | Decimal | 50,719 | 24 | | **1,224,713** |
| Tillage service Hired | No. of farmer | 461 | 2,580 | 1,189,276 | |
| Tillage service- own | No. of farmer | 18 | 1,969 | 35,437 | |
| ***Seed*** | | | | | **359,965** |
| Seed -Own | Kg | 3,773 | 93 | 350,005 | |
| Seed -NGO | Kg | 2 | 100 | 200 | |
| Seed-Purchase | Kg | 102 | 96 | 9,760 | |
| ***Fertilizer purchase*** | | | | | **14,948** |
| Urea | kg | 290 | 19 | 5,520 | |
| TSP | kg | 247 | 28 | 6,930 | |
| MoP | kg | 162 | 15 | 2,498 | |
| ***Pesticide*** | | | | | **378,216** |
| Insecticide purchase | No. of farmer | 454 | 833 | 378,016 | |
| Fungicide purchase | No. of farmer | 1 | 200 | 200 | |
| Herbicide | | | | - | |
| ***Irrigation*** | | | | | |
| Irrigation expenses | | | | - | |
| ***Labour Cost Production (Hired Labour)*** | | | | | **943,895** |
| Land Preparation-hired labour | Day | 363 | 300 | 108,800 | |
| weeding labour | Day | | | - | |
| irrigation labour | Day | | | - | |
| Harvesting -labour | Day | 2,784 | 300 | 835,095 | |
| ***Packaging cost*** | | | | | |
| Packaging cost | Tk. | | | - | |
| ***Transportation & Sales cost*** | | | | | **99,024** |
| Transportation cost | No. of farmer | 187 | 253 | 47,355 | |
| Sales cost | No. of farmer | 328 | 158 | 51,669 | |
| ***Labour Cost Marketing (hired labour)*** | | | | | **33,350** |
| Loading & unloading | Tk. | | | - | |
| Drying-Labour | Tk. | 111 | 300 | 33,350 | |
| Cleaning | Tk. | | | - | |
| **Total Variable Cost** | Tk. | | | | **3,054,111** |
| **Revenue** (volume x sales price) | | 116,836 | 80 | | **9,346,880** |
| **Gross Margin** | Tk | | | | **6,292,769** |
| ***Land Related Expenses*** | | | | | **351,284** |
| Land lease cost | No. of farmer | 21 | 12,915 | 271,209 | |
| Sharecropping charge | No. of farmer | 16 | 5,005 | 80,075 | |
| ***Depreciation*** | | | | | **185,500** |
| Depreciation cost-powertiller | No. of farmer | 18 | 9,333 | 168,000 | |
| Depreciation cost- irrigation pump | No. of farmer | 7 | 2,357 | 16,500 | |
| Depreciation cost- storage pot | No. of farmer | 1 | 1,000 | 1,000 | |
| ***Maintenance*** | | | | | **50,300** |
| Maintenance cost | No. of farmer | 10 | 5,030 | 50,300 | |
| ***Own Labour*** *(opportunity cost)* | | | | | **465,431** |
| Land preparation -own labour | Day | 326 | 300 | 97,700 | |
| Sowing-own labour | Day | 56 | 300 | 16,858 | |
| weeding-own labour | Day | 10 | 300 | 3,008 | |
| Harvesting -own labour | Day | 1,092 | 300 | 327,715 | |
| Drying-own Labour | Day | 67 | 300 | 20,150 | |
| **Total Fixed Cost** | Tk | | | | **1,052,515** |
| **Profit** | Tk | | | | **5,240,254** |
| **Return on Investment (ROI) %** | | | | | 127.60 |
| | | | | | |

On a total of 50,719 decimal or 205.30 ha, the 494 farmers involved in the MFS programme have generated revenue of Tk. 9,346,880 by producing and trading 116.84 MT of mung bean.

This resulted in a gross margin[5] of Tk. 6,292,769 and a (net) profit of Tk. 5,240,254. Their total expenditure, representing a demand for services and goods in the market, comes to Tk. 3,054,111. It constitutes the following elements: They bought and used inputs to a total value of Tk. 753,129. They procured tillage, transportation and maintenance services to a total value of Tk. 1,374,037 and hired labour for a value of Tk. 977,245. Total employment of 4,808 labour days - consists of 3,257 labour days hired along with 1,551 labour days from the household. The latter representing a value of Tk. 465,431. Ensuring access to land cost them Tk. 351,285.

Key trading volumes are: 116.84 MT of mung bean, 3.8 tons of seed, and 0.7 ton of fertiliser.

## 8.2 Average crop budget per farmer and per acre

From the compiled crop budget for all MFS farmers, two different summaries were derived. The first is per farmer covered by the benchmark survey, and the second per 100 decimal or acre. The results provide information related to the farmers' input use behaviour and profit potential per household and per acre. A compiled summary of individual farmer's crop budget along with the per acre cost (the amount spent on purchasing inputs, utilizing labours, other relevant costs related with processing, marketing, transportation and even opportunity cost as well as land leasing cost) is given in the table below.

[5] The gross margin comes close to what the farmers bring home in cash from selling their produce and subtracting their cash expenditure. The profit takes consideration of own labour costs (through opportunity cost), depreciation on machinery, but also land lease and sharecropping expenses.

## Crop Budget of MFS Average Farmer Under Mung-MFS

| Expense Head | Unit | Quantity | Unit Cost (Tk.) | Total Cost (Tk) | MFS farmers G. Total Cost (TK) | Average Farmer Cost (Tk) | Average Total Cost per Farmer (Tk) | Average Total Cost per Farmer (Tk) |
|---|---|---|---|---|---|---|---|---|
| ***Acreage under Mung Bean -M*** | Decimal | 50,719 | | | | | **102.67** | **100** |
| ***Land preparation Charges*** | Decimal | 50,719 | 24 | | **1,224,713** | 24 | **2,479** | **2,415** |
| Tillage service Hired | No. of farmer | 461 | 2,580 | 1,189,276 | | 2,407 | | |
| Tillage service- own | No. of farmer | 18 | 1,969 | 35,437 | | 72 | | |
| ***Seed*** | | | | | **359,965** | | **729** | **710** |
| Seed -Own | Kg | 3,773 | 93 | 350,005 | | 709 | | |
| Seed -NGO | Kg | 2 | 100 | 200 | | 0 | | |
| Seed-Purchase | Kg | 102 | 96 | 9,760 | | 20 | | |
| ***Fertilizer purchase*** | | | | | **14,948** | | **30** | **29** |
| Urea | kg | 290 | 19 | 5,520 | | 11 | | |
| TSP | kg | 247 | 28 | 6,930 | | 14 | | |
| MoP | kg | 162 | 15 | 2,498 | | 5 | | |
| ***Pesticide*** | | | | | **378,216** | | **766** | **746** |
| Insecticide purchase | No. of farmer | 454 | 833 | 378,016 | | 765 | | |
| Fungicide purchase | No. of farmer | 1 | 200 | 200 | | 0 | | |
| Herbicide | | | | - | | | | |
| ***Irrigation*** | | | | | | | | |
| Irrigation expenses | | | | - | | | | |
| ***Labour Cost Production (Hired Labour)*** | | | | | **943,895** | | **1,911** | **1,861** |
| Land Preparation-hired labour | Day | 363 | 300 | 108,800 | | 220 | | |
| weeding labour | Day | | | - | | | | |
| irrigation labour | Day | | | - | | | | |
| Harvesting -labour | Day | 2,784 | 300 | 835,095 | | 1,690 | | |
| ***Packaging cost*** | | | | | | | | |
| Packaging cost | Tk. | | | - | | | | |
| ***Transportation & Sales cost*** | | | | | **99,024** | | **200** | **195** |
| Transportation cost | No. of farmer | 187 | 253 | 47,355 | | 96 | | |
| Sales cost | No. of farmer | 328 | 158 | 51,669 | | 105 | | |
| ***Labour Cost Marketing (Hired Labour)*** | | | | | **33,350** | | **68** | **66** |
| Loading & unloading | Tk. | | | - | | | | |
| Drying-Labour | Tk. | 111 | 300 | 33,350 | | 68 | | |
| Cleaning | Tk. | | | - | | | | |
| **Total Variable Cost** | Tk. | | | | **3,054,111** | | **6,182** | **6,022** |
| **Revenue** (volume x sales price) | | 116,836 | 80 | | **9,346,880** | | **18,921** | **18,429** |
| **Gross Margin** | Tk | | | | **6,292,769** | | **12,738** | **12,407** |
| ***Land Related Expenses*** | | | | | **351,284** | | **711** | **693** |
| Land lease cost | No. of farmer | 21 | 12,915 | 271,209 | | 549 | | |
| Sharecropping charge | No. of farmer | 16 | 5,005 | 80,075 | | 162 | | |
| ***Depreciation*** | | | | | **185,500** | | **376** | **366** |
| Depreciation cost-powertiller | No. of farmer | 18 | 9,333 | 168,000 | | 340 | | |
| Depreciation cost- irrigation pun | No. of farmer | 7 | 2,357 | 16,500 | | 33 | | |
| Depreciation cost- storage pot | No. of farmer | 1 | 1,000 | 1,000 | | 2 | | |
| ***Maintenance*** | | | | | **50,300** | | **102** | **99** |
| Maintenance cost | No. of farmer | 10 | 5,030 | 50,300 | | 102 | | |
| ***Own Labour*** *(opportunity cost)* | | | | | **465,431** | | **942** | **918** |
| Land preparation -own labour | Day | 326 | 300 | 97,700 | | 198 | | |
| Sowing-own labour | Day | 56 | 300 | 16,858 | | 34 | | |
| weeding-own labour | Day | 10 | 300 | 3,008 | | 6 | | |
| Harvesting -own labour | Day | 1,092 | 300 | 327,715 | | 663 | | |
| Drying-own Labour | Day | 67 | 300 | 20,150 | | 41 | | - |
| **Total Fixed Cost** | Tk | | | | **1,052,515** | | **2,131** | **2,075** |
| **Profit** | Tk | | | | **5,240,254** | | **10,608** | **10,332** |
| **Return on Investment (ROI) %** | | | | | **127.60** | | **127.60** | **127.60** |
| | | | | | | | | |

The average land under mung cultivation last year by an individual farmer belonging to a PG was 102.67 decimal or an equivalent of 0.42 hectare. All available data were converted to a 100 decimal basis (1 acre) to facilitate comparisons. Overall variable cost amounted to Tk. 6,022 per acre, including tillage cost of Tk. 2,415, inputs for Tk. 1,485 (seed for Tk. 710, fertilizer for Tk. 29 and pesticides for Tk. 746) and hired labour for Tk. 1927.

Farmers usually use a local variety of Mung seed. This local variety is comparatively smaller than the BAR- 6 variety. The recommendation for BARI-6 seeding rate is 12-14 kg per acre. But on average farmer's seed use rate in the survey is found to be 7.64 kg per acre. Considering farmers practice of broadcasting and seed size, this rate may not be as low as it seems but remains to be assessed somewhat more closely. Generally farmers are not habituated to use fertilizer. The few farmers who do use fertilizer on their land are using more urea fertilizer though, 31.36 kg per acre, than the recommended dosage of 16 kg per acre. Meanwhile, their use of TSP (34.36 kg) is close to the recommended dosage of 40 kg per acre and their use of MoP is again higher than the recommended dosage, namely 22.55 kg against 15 kg.

The BARI-6 cultivation manual does not include information on the required labour or other production related input costs. As labour requirements depend on land condition, weather situation, farmer's ability and demand supply situation, the input can vary. From the survey it appears that 6 hired and 3 own labour days are required per acre of cultivation.

Other inputs like irrigation are heavily depended on the moisture conditions. BARI recommends irrigation just before sowing, 25-30 days after sowing and at the time of flowering if the land is dry. Generally mung farmers do not irrigate leaving room for improvement. Use of chemicals, particularly pesticides depends on pest attacks which are closely related to weather conditions like high temperature and humidity. The use of chemicals should be judicious only to control loss and according to need, there is no standard BARI recommendation for it.

Land preparation and hired labour are presently the highest costs in the cultivation of mung. Together they make up more than 70% of variable production costs.

MFS farmers could yield 230.36 kg of mung bean per acre that resulted in revenue of Tk. 18,429 and a Gross margin of Tk. 12,407 considering a sales price of Tk. 80 per kg. The net profit per acre is calculated at Tk. 10,332 (deducting land use and other cost). The resulting ROI on one acre of mung bean is 127.60%.

# Annex 1. Polder Maps (43/2D & 43/2F)

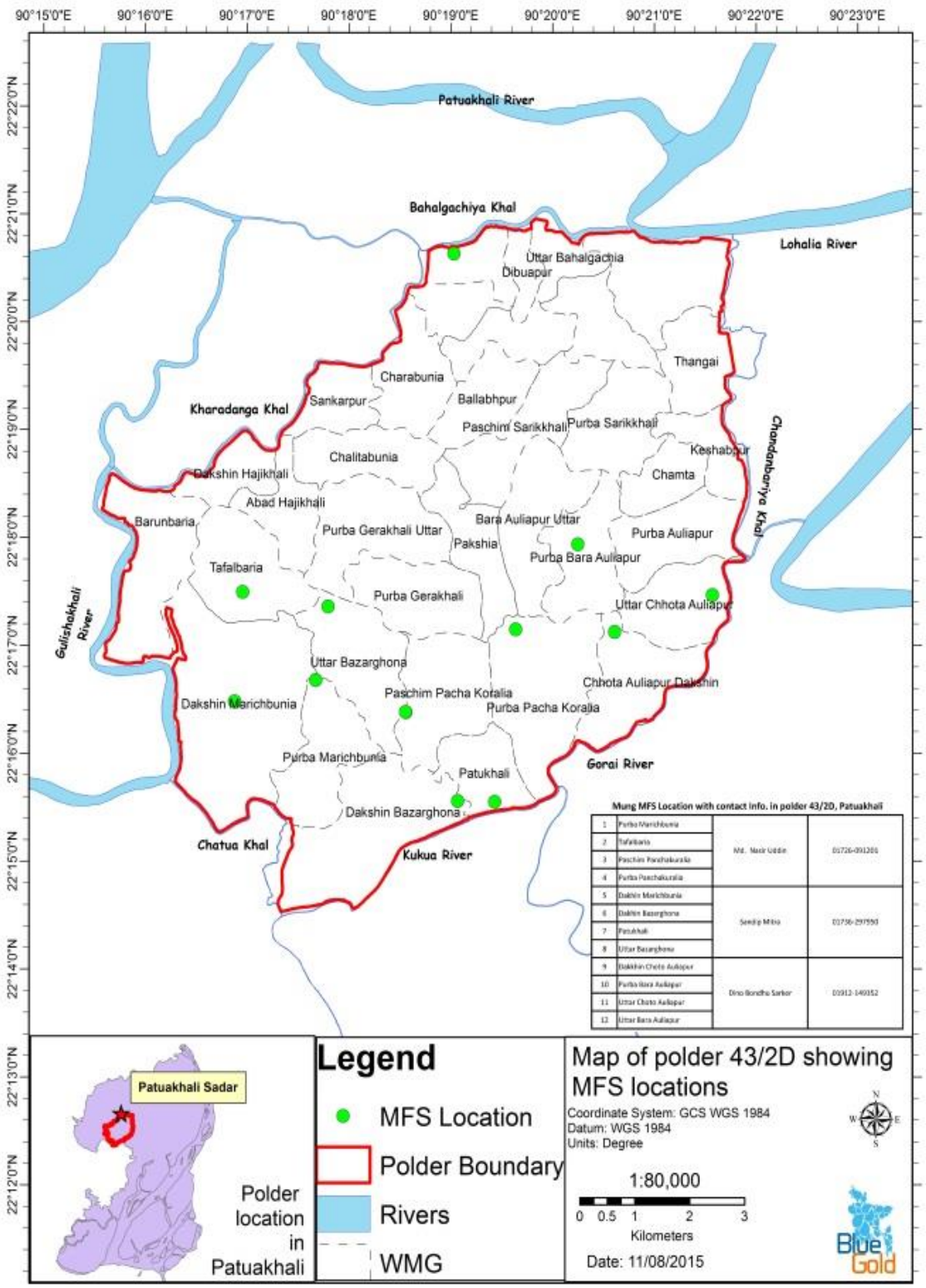



**Figure 6: Map of Polder 43/2D showing MFS Locations**

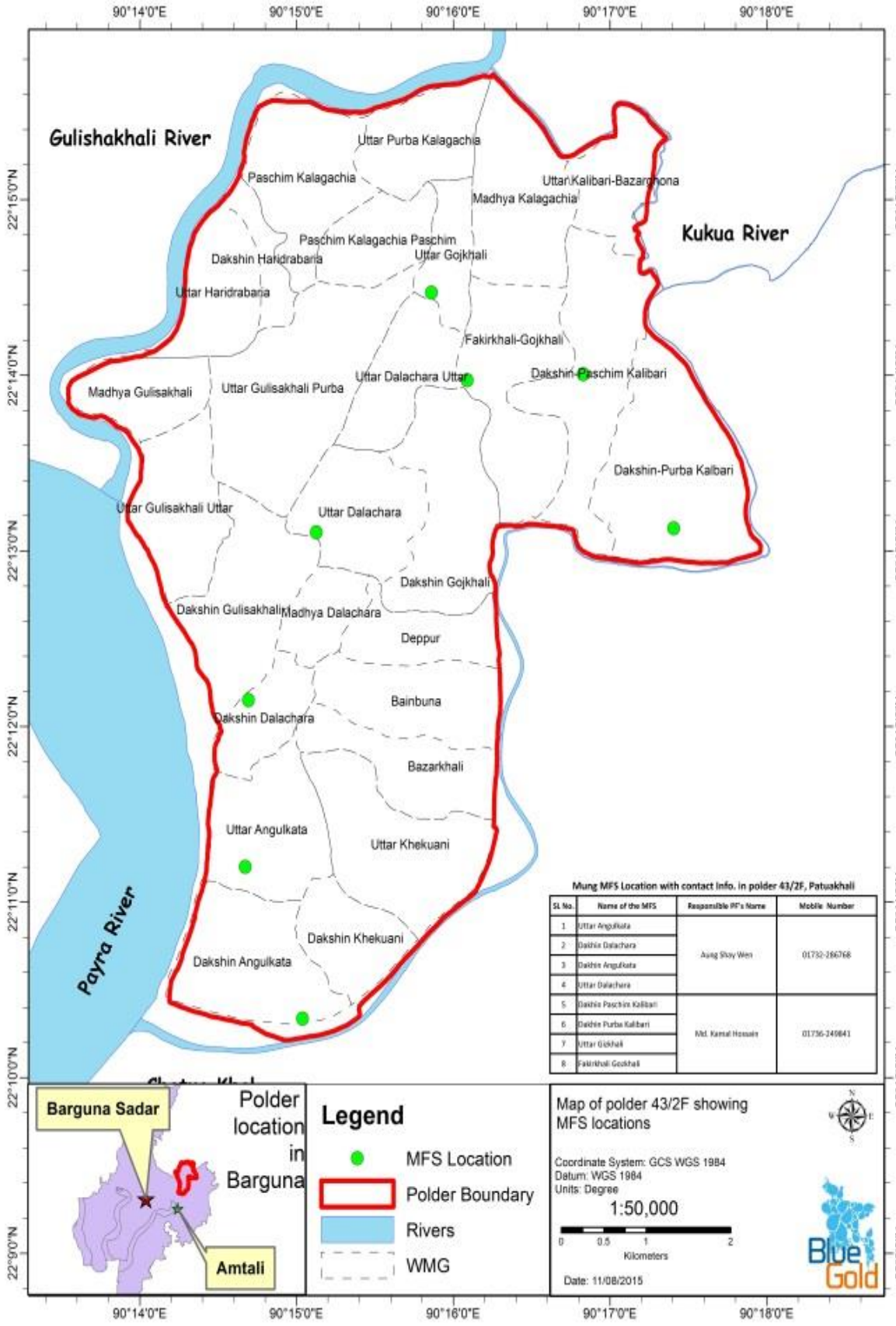



**Figure 7: Map of polder 43/2F Showing MFS Locations**

# Annex 2. Summary Of Benchmark Information

| | Benchmark | |
|---|---|---|
| **Name of Category** | **Year** | |
| Maximum age | 60 | |
| Minimum age | 18 | |
| Average age | 44.6 | |
| Median | 45 | |
| **Education** | **Number** | **%** |
| Illiterate | 37 | 7 |
| Can sign | 87 | 18 |
| Up to primary | 224 | 45 |
| Secondary | 97 | 20 |
| College and above | 49 | 10 |
| **Gender** | **Number** | **%** |
| Male | 437 | 88 |
| Female | 57 | 12 |
| **WMG membership** | **Number** | **%** |
| Yes | 335 | 68 |
| No | 159 | 32 |
| **Land Ownership** | **Decimal** | **Hectare** |
| Total land owned | 111,370 | 451 |
| Avg. Per farmer | 225.45 | 0.91 |
| Land for field crop | 93,392 | 378.10 |
| Avg. Farmer land for field crop | 189.05 | 0.76 |
| Mung cultivation land | 50,719 | 205 |
| Avg. Farmer Mung cultivation land | 102.67 | 0.41 |
| **Individual Farmer Land Ownership** | **Decimal** | **Hectare** |
| Highest | 1480 | 5.99 |
| Lowest | 20 | 0.08 |
| Median | 180 | 0.73 |
| **Land Ownership Type** | **Number** | **%** |
| Own land | 444 | 92.4 |
| Leased land | 31 | 7.4 |
| Sharecropping land | 19 | 4.6 |
| **Land Type** | **Decimal** | **%** |
| **High** | 8622 | 17 |
| **Medium** | 34489 | 68 |
| **Low** | 8115 | 16 |
| **Farming Assets** | **Number** | **%** |
| Power tiller | 8 | 2.9 |
| Irrigation pump | 6 | 1 |
| Harvesting sheet | 54 | 11 |
| None of them | 387 | 80 |
| Others | 29 | 6 |
| **Land condition-Mid January** | **Number** | **%** |
| Land still flooded | 0 | 0 |
| Previous crop not harvested | 13 | 2.6 |
| Ready to plough | 317 | 64.2 |
| Ready to sow | 164 | 33.2 |

| Tillage and sowing Time | Number | % |
|---|---|---|
| 05-20 January | 26 | 5 |
| 21-28 January | 93 | 19 |
| 01-10 February | 228 | 46 |
| 11-20 February | 109 | 22 |
| 21-28 February | 32 | 7 |
| 01-05 March | 4 | 1 |
| **Tillage Service Cost** | **Taka** | **%** |
| Total Tillage Cost | 1,224,713 | |
| Hired Tillage cost | 1,189,276 | 97 |
| Own Tillage cost | 35,437 | 3 |
| Average Tillage cost per farmer | 2,479 | |
| Tillage cost per acre | 2,415 | |
| **Seed Type** | **Number** | **%** |
| Local | 481 | 97 |
| Bari 6 | 0 | 0 |
| Local and Bari 6 | 8 | 02 |
| **Seeding Method** | **Number** | **%** |
| Broadcast | 485 | 98 |
| Broadcast and line | 6 | 1.2 |
| Line | 3 | 0.6 |
| **Seed Use** | **Number** | **Taka** |
| Total Seed Cost | 494 | 359,965 |
| Seed cost-own | 476 | 350,005 |
| Seed cost-purchased | 17 | 9,760 |
| Seed cost-NGO | 1 | 200 |
| Average seed cost per kg-Tk. | | 92.85 |
| Average seed use per acre-kg | | 7.64 |
| **Availability of water for irrigation** | **Number** | **%** |
| Yes | 343 | 69 |
| No | 151 | 31 |
| **Irrigation water utilization** | **Number** | **%** |
| Yes | 0 | 0 |
| No | 494 | 100 |
| **Fertilizer use** | **Number** | **%** |
| Yes (%) | 11 | 2 |
| No(%) | 483 | 98 |
| **Fertilizer Type** | **Number** | **Kg** |
| Urea | 9 | 290 |
| TSP | 7 | 247 |
| MoP | 7 | 162 |
| **Fertilizer Use Rate** | **Average Farmer** | **BARI prescription** |
| Urea-kg | 31.36 | 16 |
| TSP-kg | 34.36 | 40 |
| MoP-kg | 22.55 | 15 |
| Borax-kg | 0 | 3 |
| **Chemical Use** | **Number** | **%** |
| Pesticide | 454 | 92% |
| Fungicide | 2 | 0 |
| Herbicide | 0 | 0 |
| **Location of Chemical purchase** | **Number** | **%** |
| Local provider | 431 | 92 |
| Regional market | 20 | 4 |

| | | |
|---|---|---|
| Local provider regional market | 15 | 3 |
| **Weeding** | **Number** | **%** |
| Yes | 0 | 0 |
| No | 494 | 100 |
| **Labour Cost** | **Hired Labour** | **Own Labour** |
| Land preparation-own (Tk.) | 108,800 | 97,700 |
| Sowing (Tk.) | 0 | 16,858 |
| Weeding (Tk). | 0 | 3,008 |
| Irrigation(Tk.) | 0 | 0 |
| Harvesting (Tk.) | 835,095 | 327,715 |
| Drying (Tk.) | 33,350 | 20,150 |
| Crushing (Tk.) | 0 | |
| Cleaning (Tk.) | 0 | |
| Total | 977,245 | 465,431 |
| **Labour Days** | **Hired Labour** | **Own Labour** |
| Land preparation | 363 | 326 |
| Sowing | 0 | 56 |
| Weeding | 0 | 10 |
| Irrigation | 0 | |
| Harvesting | 2,784 | 1,092 |
| Drying | 111 | 67 |
| Crushing | 0 | 0 |
| Cleaning | 0 | 0 |
| Total | 3,257 | 1,551 |
| **Use of Plastic net as postharvest Practice** | **Number** | **%** |
| Yes | 69 | 14 |
| No | 425 | 86 |
| Production & Sales | | |
| Quantity sales -MT | 116.84 | |
| Average per farmer sales-MT | 0.24 | |
| Average production per acre-MT | 0.23 | |
| Average sales price –Tk./MT | 80,000 | |
| Average income per acre –(Tk.) | 18,429 | |
| Average net profit per acre-Tk. | 10,332 | |
| **Perception about production** | **Number** | **%** |
| Poor | 12 | 2.4 |
| Average | 440 | 89 |
| Good | 42 | 8.5 |
| **Sales Point** | **Number** | **%** |
| Farm gate | 136 | 28 |
| Local market | 336 | 68 |
| Regional market | 11 | 2 |
| Farm gate and local market | 8 | 2 |
| Local and regional market | 3 | 1 |
| Processor arot bepari | 0 | 0 |
| **Sales Time** | **Number** | **%** |
| First month | 340 | 43.24 |
| Second month | 336 | 35.68 |
| Third month | 212 | 15.07 |
| Fourth month | 82 | 4.49 |
| Fifth month | 18 | 0.71 |
| Sixth month | 8 | 0.56 |
| **Use of Transportation for Sales** | **Number** | **%** |

| | | |
|---|---|---|
| Yes | 290 | 58.7 |
| No | 204 | 41 |
| **Transportation Type** | **Number** | **%** |
| Nosimon | 231 | 81 |
| Rickshaw | 53 | 18 |
| **Collective Action** | **Number** | **%** |
| Yes | 0 | 0 |
| No | 494 | 100 |
| **Advice Received** | **Number** | **%** |
| Yes | 4 | 0 |
| No | 490 | 100 |
| **Loan Received** | **Number** | **%** |
| Yes | 4 | 0 |
| No | 490 | 100 |