A Rapid Assessment of Gender in Agriculture of Bangladesh

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A Rapid Assessment of Gender in Agriculture of Bangladesh

Summary

Despite the fact that the literature convincingly demonstrates the need for addressing gender issues in agriculture, not only for achieving equity and well-being but also for improved productivity and overall development, the interventions designed rarely take note of this. This rapid gender assessment in agriculture of Bangladesh aims at supporting “Expansion of the Cereal Systems Initiative for South Asia” (CSISA) project to formulate a strategy and plan for achieving gender equity. This assessment focused on main agricultural activities in the studied villages, which included mainly cereals (rice, wheat and maize), fish, vegetables and poultry production. The assessment employed qualitative research methods. Data were collected through sixteen Key Informant Interviews, sixteen Focus Group Discussion, thirty-five In-depth Interviews and Participatory Learning and Analysis exercises such as Seasonal Calendar, Mobility Map, Spider Diagram exploring Decision Making and Impact Tree. Data were collected between February and March 2011 from eight villages in different agro-ecological zones of Bangladesh.

Study findings show that in general, gender divide is particularly prominent when men’s and women’s activities are compared. Thus, in contrast to men, women are more: 1) involved in home-based agricultural activities; 2) in charge of small-scale vegetable, poultry and livestock production; 3) engaged in production of perishable, but often nutrition dense foods; and 4) involved in production for own consumption rather than for the market. Women are usually not involved at all in marketing of agricultural products. This gender division of labor is exercised through enforcement of traditional gender roles; gender norms of restricted mobility and purdah; separate spheres for women and men to function and through linking women’s observance of such norms to honor of individual woman, her husband and the family.

However, interaction of such gender norms with other factors, e.g., socioeconomic status and religion, and variation in how individuals, families and communities negotiate and practice these norms opens up opportunities for interventions. Thus, traditional norms are much relaxed in case of landless, small and marginalized farm households, where women are relatively more engaged in agriculture and even in field-based activities. Gender norms and practices also vary by geographic regions. Therefore, women from Thakurgaon (north-west of the country) are much more involved and visible in agriculture, whereas women from Noakhali (south-east of the country) are least involved in agriculture. Women, generally do not own productive assets such as land or pond. Most of them are not covered by extension work. They have limited access to information regarding agriculture and little decision making power.

Introduction of new agricultural technology is regarded, in general, as highly favorable. It is acknowledged to improve household income, food security, nutrition and general well-being both of men and women. Technological enhancement of post harvest operations, however, usually reduces involvement of women in agriculture replacing their work by men particularly in non-marginalized farm households. Although this increases time for household chores and leisure for women from these households, this may also contribute to devaluation
of women, who already have a low status relative to men in the rural society. In marginalized farm households and landless households, technology increases efficiency and involvement of women in agriculture.

This gender assessment suggests that: 1) landless, small and marginalized farm households have relatively flexible gender norms and this group would be more responsive to interventions addressing gender in agriculture than medium and large farm households; 2) it would be much more efficient to target groups of women rather than individual women; 3) women need to be linked to market chain and need to be enabled to access and control own income; 4) Extension services need to be gender friendly in targeting farmers and in designing the services taking into account women’s needs; and 4) new technology introduced in agriculture needs to carefully consider who, when, where and how the technology will be used and what implications would it bear on gender.

The study puts forward the following general recommendations: 1) Target small and marginal farm households; 2) Make extension services more gender sensitive by focusing, specially on areas of agriculture, where women are involved and on women’s needs; training of extension workers on gender; recruitment of female extension workers; active engagement with women; considering convenience of women in mix of sex in training, training venue and timing; 3) Work through government and NGOs; 3) Develop financial literacy of women and link women with market through mobile phones; 4) Incorporate gender consideration in development of new agricultural technology. The study generates as well some village specific recommendations.
1. Introduction

Agriculture is underperforming in many developing countries, and one of the key reasons is that women do not have equal access to the resources and opportunities they need to be more productive (FAO, 2011). Women play a critical, but often under-recognized, role and face greater constraints than men in pursuing agriculture. Several empirical studies have found that redistributing assets between men and women in the household has the potential for increasing productivity (Udry 1996). The literature shows that male farmers achieve yields 20-30 percent higher than those of female farmers. However, in the majority of studies these differences in yields were due to differences in input levels. As shown by FAO (2011) closing the input gap on the agricultural land held by women would, assuming a gender yield gap of 20-30 percent, lead to an increase in agricultural output in the developing countries for which data are available by an average of 2.5 to 4 percent.

Moreover, evidence from Africa, Asia and Latin America consistently shows that families benefit when women have greater status and power within the household. When women have more influence over economic decisions, their families allocate more income to food, health, education, children's clothing and children's nutrition — investments that contribute to enhancement of well-being and development in the long-run. Social safety net programs in many countries now target women specifically for these reasons.

As argued by Meinzen-Dick and Quisumbing (2010) food needs of the future population would not be met or productivity translating into improved welfare for the poor would not occur unless gender is taken into account seriously in agricultural research and development. Paying attention to gender is not only ideology but a matter of development effectiveness (FAO, 2011; Meinzen-Dick and Quisumbing, 2010). An analysis conducted by FAO confirms that the Millennium Development Goals on gender equality (MDG 3) and poverty and food security (MDG 1) are mutually reinforcing. FAO concludes that gender equality is good for agriculture, food security and society; and policies can make a difference.

Gender differences matter in agricultural production in various farming systems all over the world, including Bangladesh, where the ownership and management of farms and natural resources by men and women are often defined by culturally specific gender norms. In Bangladesh, women’s disproportionate share in asset poverty is due to socio-cultural norms that restrict access to, ownership and control of natural, physical and financial resources. Thus, rural Bangladeshi women own only 8% of all productive assets (Quisumbing and Maluccio, 2000).

Male and female space is differentiated in rural Bangladesh by the institution of purdah, which confines women’s legitimate sphere of activities to the boundaries of the homestead, and serves both to obscure the value of the labor they perform and to restrict their access to mainstream employment opportunities. Women’s reproductive role is deemed as subsidiary and negligible. Moreover, women’s contribution to the creation of market value remains socially invisible because of their absence at the point at which their value is realized (Cain, Khanam, and Nahar, 1979; Kabeer, 1988; Adnan [date unknown]; Amin, 1995).
Women farmers are also characterized by social exclusion and marginalization from social and government welfare services and safety nets, and from decision-making in household, institutional and governance structures that relate to livelihoods, resource management and functioning of markets. Women's involvement in community-based agricultural resource management is often minimal due to customary power relations, as well as time and mobility constraints related to domestic tasks and reputation. Gender differences are obvious in the staffing and conducting of agricultural research and extension, with most agricultural scientists and extension agents being male. Extension work also needs to take into account different needs and preferences of women.

Some positive changes taking place over time in gender in Bangladesh bear implications for agriculture as well. Over the years an increase in the role of women in agriculture has been observed. However, most of this increase is attributable to small, marginalized farm and landless households. A study by Stafilios-Rothschild and Mahmud (1989) lends support to this by showing that women worked as wage laborers, mostly in agriculture in 25% of male headed households and 40% of female headed households and this proportion is much higher for functionally landless or marginalized households (owning under 0.5 acres of land). Such preponderance of women from small, marginalized and landless households in agriculture holds even today (FAO, 2011).

Participation in NGO groups provides women access to micro-credit, enhances mobility of women and creates stronger social network for women (Naved, 1996; Rozario, 2003). In a few areas, women are jointly leasing land, buying power tiller or working as a team of agricultural day laborer or a group of market traders. Such informal groups provide the mutual support needed to overcome traditional gender norms. Recently, women are becoming members of Union Parishads (local government). Although the majority of them are still not effective due to male dominance in this structure, these changes create opportunities for advancement in gender and agriculture.

In this scenario, this study is the first step in enhancing the “Expansion of the Cereal Systems Initiative for South Asia” (CSISA) project to formulate a strategy and plan for achieving gender equity by mainstreaming gender analysis and addressing gender concerns at all stages of the project.

The broad objective of CSISA in Bangladesh” is to increase income, food security, and livelihoods in impoverished and agriculturally dependent regions of Bangladesh. The project is funded by USAID and will be implemented as a set of integrated activities by a consortium of agriculture research centers, comprising IRRI (International Rice Research Institute), CIMMYT (International Maize and Wheat Improvement Center), and the WorldFish Center together with national partners, under the umbrella of the Consultative Group of International Agricultural Research (CGIAR).

The specific objectives of the CSISA project are as follows:
1) Widespread delivery, participatory fine-tuning, and adoption of improved varieties, production technologies, and natural resource management for cereal and fish systems in order to improve productivity, income, and resilience to risk.
2) Adaptive research trials to test, validate, and refine newly developed agronomic practices for cereals and aquaculture practices for fish.

3) Capacity building for researchers, extension workers, and service providers from public, private, and NGO sectors to enable the rapid dissemination and adoption of improved technologies and management approaches.

4) Socioeconomic and farming systems analysis for technology targeting, and the deployment and improvement of market linkages and livelihood systems for inclusive agricultural growth and sustainable poverty reduction.

5) The development of innovative information delivery mechanisms, including robust decision support tools that integrate producer information, market prices, weather, and risk in formats that are simple to use and accessible by all agricultural stakeholders.

The overall task of the current rapid assessment was to provide a rapid but comprehensive assessment of the current status and roles of women and men within rural household livelihood portfolios in existing and new hub areas of CSISA; the norms and attitudes affecting gender relations in the pursuit of livelihood strategies, especially in terms of access to resources/assets and decision-making; and gendered responses to and impact of past and potential project interventions, especially in relation to the introduction of new crop and fish varieties, technologies and practices. The specific objectives of this study were to:

1) Determine the major agricultural and non-agricultural activities within household livelihood portfolios engaged in by women and men in the context of seasonality and gendered time allocation and use of space, with special attention to major crops, fish farming, fishing, livestock, extraction of natural resources, processing, marketing, storage;

2) Identify differential constraints and opportunities of women and men in pursuing agricultural livelihoods, with special focus on access to assets/resources and decision-making within households, communities, farmer/fisher/trader associations and sectoral agencies, accounting for the norms, beliefs and attitudes that underlie these differences;

3) Assess the extent to which crop and fish varieties, agricultural technologies and research (existing and introduced by the project) differentially impact the socio-economic status and needs of women and men, with special attention to gendered motivations, aspirations and trade-offs;

4) Assess how extension services and information delivery mechanisms (existing and introduced by the project) respond to the needs and priorities of women and men;

5) Assess how capacity-building (existing and introduced by the project) respond to the needs and priorities of women and men;

6) Assess the differences in overall wellbeing outcomes (income, nutrition, health, education, security, happiness) of women and men, as a result of past and expected outcomes of potential project intervention


2. Methods

Data were collected through sixteen Key Informant Interviews (KII), sixteen Focus Group Discussion (FGD), thirty-five In-depth Interviews (IDI) and use of different Participatory Learning and Analysis tools such as seasonal calendar, mobility map, spider diagram for exploring decision making and Impact assessment tree (See Table 1).

**Key Informant Interview**

Data collection started with KIIs covering all the areas of query mentioned in the objectives. Project staff in the existing hubs, local partners and men and women from the study villages served as the Key Informants. Selection criteria for KIs were as follows: 1) knowledgeable persons having first-hand knowledge regarding the issues covered in this study; 2) articulate and easy to talk to; 3) observant and reflective and even critical of their own culture; 4) understand what information is needed; and 5) willing to share information. In each of the villages two KII were conducted.

**Table 1: Study sample size by data collection method**

<table>
<thead>
<tr>
<th>Data collection method</th>
<th>Women</th>
<th>Men</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key Informant Interview</td>
<td>8</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>Focus Group Discussion</td>
<td>8</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>In-Depth Interview</td>
<td>17</td>
<td>18</td>
<td>35</td>
</tr>
<tr>
<td>Seasonal Calendar</td>
<td>1</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>Mobility Map</td>
<td>1</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>Spider Diagram for Decision Making</td>
<td>1</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>Impact Flow Tree</td>
<td>1</td>
<td>1</td>
<td>16</td>
</tr>
</tbody>
</table>

**Focus Group Discussion**

FGDs were conducted mainly for exploring perception and attitude related to the objectives of this study. In each village one FGD was conducted with women and one with men. In each FGD session there was a moderator and an observer-cum note-taker. There were eight to twelve participants of the same sex in each FGD. Participants were sometimes recruited with the support of existing project staff and local partners.

**In-depth interviews**

In-depth interviews were carried out with at least two men and two women in each village engaged with agriculture or having the potential for such engagement. Care was taken to select women and men who were doing relatively well and who were not.

Each IDI collected data on the following:

- Socio-demographic information;
- Productive assets;
- Type of agricultural activities undertaken; constraints and opportunities that shaped involvement with such activities;
• Access and control over resources (i.e., asset, income, information, training, etc);
• Decision making power;
• Consequences/vulnerabilities;
• Overall wellbeing outcomes (income, nutrition, health, education, security, happiness) of women and men, as a result of past and expected outcomes of potential project intervention;
• Potential sources of support for women in agriculture;
• Potential interventions for responding to the needs of the women in agriculture.

The KII, FGD and IDI data were tape recorded upon receipt of informed consent from the study participants.

In each village, seasonal calendar for major crops were prepared by men and women working in separate groups, making the total 16 for the entire study. Seasonal calendars revealed involvement of men and women with different crops; different activities for each crop; gender differences in activity patterns and time use; and opportunities for greater or efficient involvement in agriculture.

Mobility maps of men and women for agricultural activities were prepared. The dimensions captured in the mobility maps were activity, destination, distance and frequency. During preparation of the maps additional information on mode of transport and cost were also collected from discussion.

Spider diagrams were used for exploring decision-making. Both women's and men's groups in each village came up with these diagrams. In these diagrams decision making in pre-production, production, post harvest operations, marketing and in income use were explored. Impact Flow Tree was prepared to examine the impact of new technology on men and women.

**Study sites:** The key element of CSISA approach is the concept of the “hub,” that is, a geographic location that serves as a focal point for innovation in a target region. Hubs typically serve a command area having fairly similar biophysical characteristics, production systems, constraints, and potential intervention points.

**Existing hubs**
The existing **Northwest Hub** centered in Dinajpur consists of districts ranging from drought-prone areas in the Old Himalayan Piedmont Plain to flash-flood areas east and northeast of Dinajpur. This Hub centered in Dinajpur consists of districts Thakurgaon, Nilphmari, Gaibanda, Kurigram, Rangpur, Lalmorihat. Rice-rice, rice-wheat, rice-maize, rice-(potato/mustard) rice/maize/jute/mungbean) are the existing main cropping systems in this hub.

**New hubs**
The new hubs include Khulna, Noakhali,Jessore and Barisal. Villages from each of these hubs villages were included in this study. A description of the new hubs is presented below.

The proposed **Greater Khulna Hub** consists of coastal districts in the southwest of the country (Khulna,
Satkhira, and Bagerhat) that are subject to natural hazards such as cyclones, tidal flooding, and seasonal soil salinization.

The proposed **Greater Noakhali Hub** consists of southeast districts of Noakhali, Feni, Chandpur, and parts of Comilla. These areas are characterized by flash floods that result in short term crop submergence, with many areas having high soil and water salinity, and some having high incidence of arsenic in groundwater as well as in soil.

The proposed new **Greater Jessore Hub** in the central southwest consists of Jessore, Magura, Jhenaidha, Chuadanga, Kushtia, and Meherpur districts. These areas are mostly flood-free and agriculture is highly diversified and intensive. Commercialization of small-scale agriculture, especially with vegetables, pulses, and spices, is a major feature of this hub. Freshwater fish culture is a major activity and Jessore is one of the most important centers for fish seed production and supply in the country.

**Greater Barisal** (Barisal, Patuakhali, Borguna, Jhalokati, Pirojpur, and Bholo districts)—among the poorest and most risk-prone area of the country, affected by cyclones, tidal surges, drought, increasing salinity, and a lack of fresh groundwater.

For the purpose of this assessment the northwestern hub was selected from the two existing CSISA hubs because of higher levels of poverty; from among the new hubs Greater Khulna, Greater Jessore, Greater Barisal and Greater Noakhali hubs were included. A total of eight villages from old and new hubs were included in this study. The districts and the villages in the study have been presented in Table 2. In selecting the villages variation by accessibility was considered. When two villages were selected from one hub on accessible and one remote village were selected upon consultation with local partners.

<table>
<thead>
<tr>
<th>Location</th>
<th>District</th>
<th>Village</th>
</tr>
</thead>
<tbody>
<tr>
<td>Old Hub</td>
<td>Thakurgaon</td>
<td>Uttor Baliadangi Bhandardoho</td>
</tr>
<tr>
<td>New Hub</td>
<td>Satkhira Bagerhat Jessore Noakhali Barisal</td>
<td>Gobindokathhi Katakali Mirzanagar Khalishpur Doriabad, Kobirkathhi</td>
</tr>
</tbody>
</table>

The study team was trained for five-days. There were two six-member (three women and three men) teams headed by one supervisor and an overall Coordinator. The members of the field team either had Masters in Anthropology and/or had experience of conducting qualitative research and/or participatory learning and analysis (PLA). Male team members collected data form male study participants, while female team members collected data from female study participants. Data were collected between February and March 2011.
**Ethical considerations**
At the start of all interviews, FGDs and PLA exercise participants were informed orally of the purpose and nature of the study, and its expected benefits. Written consent of the participants was sought for conducting the interview. As part of the consent procedure, the participants were informed that the data collected will be used for research purpose only. They were also informed that they are free to terminate the interview at any point; to skip any questions that s/he does not wish to respond to; and to refuse to participate in the study. Participation in the study was voluntary. No inducements were made. The study clearance was obtained from ICDDR,B’s Ethical Review Committee (ERC).

**Data analysis**
Key informant Interview, FGD and In-depth interview data were transcribed from tapes; entered into Atlas/ti, coded using Atlas/ti, and analyzed for emerging themes and patterns. Participatory assessment exercises conducted in each village were self explanatory. They were used for cross checking the data and for intra-village comparison. Village-wise analysis was conducted first for gaining a relatively holistic understanding of the village context and issues of gender and agriculture in it. Once this analysis was completed a cross-village analysis was performed.
3. Results

3.1 Main characteristics of studied villages

There is a large variation among the villages covered in this study by location, size, accessibility, religion, agriculture pursued for livelihood, challenges faced in agriculture and opportunities (See Table 3). Villages from Thakurgaon are located in the north, while villages in Bagerhat, Jessore and Barisal are located in the south of the country. Noakhali is located in between these two northern and southern areas of Bangladesh.

Mirzanagar, with more than 800 households and 21 para (neighborhood) is the largest and Gobindokathi comprising of 120 households is the smallest village among the eight villages studied. Khalishpur, Noakhali; Bhandardoho, Thakurgoan; Kobirkathhi, Patuakhali are also relatively large villages with more than 500 households. Uttor Baliadangi, Thakurgoan and Katakhali, Bagerhat are medium size villages with less than 400 households. Doriabad, Barishal is a relatively smaller village with less than 300 households.

Four of the villages (i.e., Bhandardoho, Gobindokathi, Kobirkathhi, Doriabad) are remote and thus hard to reach, while the rest are located close to district town or Upazila Headquarter and easily accessible. There is one Hindu only village (i.e., Gobindokathi) in the sample. Katakhali, Kobirkathhi and Khalishpur are Muslim only villages. Mirzanagar, Uttor Baliadangi and Bhandardoho are predominantly Muslim villages, while almost equal proportions of Muslims and Hindus live in Doriabad.

Stringent gender norms are observed in three of the villages (Katakhali, Khalishpur, Kobirkathhi); while three (Uttor Baliadangi, Bhandardoho and Gobindokathi) are quite flexible and the other three villages are somewhere in between the above mentioned categories in terms of gender norms.

In four of the villages (Thakurgoon villages; Doriabad, Barisal) the main rice crops are aman and boro. Aus is grown only in Mirzanagar, Jessore and Kobirkathhi, Patuakhali. Low productivity of aus was mentioned as a reason for not cultivating it more. In Khalishpur, Noakhali only boro is grown. No rice crops or any other agricultural crops for that matter are usually grown in Gonbindokathhi, Satkhira due to salinity of the soil. Aman is cultivated on some land only in years with heavy rainfall. In Katakhali, Bagerhat salinity tolerant BIRRI -47 is mainly cultivated and aman is cultivated on some land. Rice is produced both for consumption and commercial purposes in all the villages except for Katakhali, Gobindokathi and Khalishpur.

Diverse cash crops like wheat, sugarcane, maize and potato are cultivated mostly in Thakurgaon. Jute is grown both in Bhandardoho, Thakurgaon and Mirzanagar in Jessore. Legumes are grown in Kobirkathhi, Patuakhali; Mirzanagar, Jessore and Thakurgoan. Vegetables are grown almost everywhere except in Gobindokathhi, Satkhira. In Khalishpur, Noakhali and Katakhali, Bagerhat they are grown exclusively for own consumption.
<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Villages</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Uttar Baliadangi, Thakurgoan, Bhandardoho, Thakurgoan, Katakhali, Bagerhat, Gobindokathhi, Satkhira, Kabirkathhi, Patuakhali, Dariabad, Barisal, Mirzanagar, Jessore, Khalishpur, Noakhali</td>
</tr>
<tr>
<td>Remoteness</td>
<td>Non remote, Non remote, Non remote, Remote, Remote, More or less remote, More or less remote, Non remote</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>-Electricity is present, Kacha road, -Electricity is present, Kacha road, -Electricity is present, Roads are semi – paka (soiling of bricks), -No Electricity, rundown roads, -No Electricity, Kacha road, -No Electricity, Road and water based communication, -Electricity present partially (1/4), -Semi-paka road, -No Electricity, -Paka Road</td>
</tr>
<tr>
<td>Number of households</td>
<td>320, 655, 350, 120, 500, 260, 800, 750</td>
</tr>
<tr>
<td>Religious Composition</td>
<td>Predominantly Muslim, Predominantly Muslim, Muslim only, Hindu only, Muslim only, Muslim and Hindu, Predominantly Muslim, Muslim only</td>
</tr>
<tr>
<td>Cropping/Farming system</td>
<td>Cereal crop (mainly rice, wheat, maize), Cereal crop (mainly rice, wheat, maize), -Mainly Gher based Fish farming (shrimp &amp; others ), -Betel leaf, -Poultry, -Mainly Gher based shrimp culture, -Poultry, Cereal crop (mainly R'rice), Cereal crop (mainly rice), Cereal crop (mainly rice), -Cereal crop (mainly rice), -Fish farming</td>
</tr>
<tr>
<td>Gender Issues</td>
<td>Social norms, Less conservative, Less conservative, Conservative, Less conservative, Conservative, Comparatively less conservative, Comparatively less conservative, conservative</td>
</tr>
<tr>
<td></td>
<td>Women’s mobility, -Relatively flexible, - Relatively flexible, - Highly restricted, - Relatively flexible, - Highly restricted, Restricted, Restricted, - Highly restricted</td>
</tr>
</tbody>
</table>
Fisheries are mainstay of livelihood in Gobindokathhi, Satkhira; Katakhali, Bagerhat; Kobirkathhi, Patuakhali; and Khalishpur, Noakhali. Salt water based fish farming is prevalent only in Gobindokati, Satkhira and Katakhali, Bagerhat. Mainly prawn and shrimp are grown here for commercial purposes. In Katakhali, Bagerhat, however, integrated agriculture is practiced, which includes agriculture, fishing and poultry on the same land and time in an interactive manner.

Home-based indigenous species of poultry are reared in most of the villages. Poultry in Gobindakathhi and Katakhali is raised mainly for commercial purposes and correspondingly the scale of poultry rearing is relatively large here.

In Thakurgaon, the main challenge is groundwater shortage, while in Jessore it is arsenic contamination of water as well as soil. In Kobirkathhi, Patuakhali irrigation poses a challenge as the flat surface of land cannot hold water in the area. Tubewell is not a solution for this village as this would introduce saline water. Doriabad, Barisal is flooded for six months of the year. Low areas of Mirzanagar, Jessore are also flooded. There is only one rice crop in Noakhali. In Satkhira and Bagerhat salt water creates challenges as well as opportunities.

Occupational pattern of land owners also creates challenges for agriculture. In Kobirkathhi, Patuakhali, for example, most of the land owners are service holders or businessmen working outside the village. These absentees as well as their representatives in the village lack interest in agriculture. So, there is lots of fallow land in Kobirkathhi. Most of the land under farming is leased in by others, who are not interested in investing much in development of the land. This speeds up degradation of land in Kobirkathhi. Land distribution is quite skewed in Khalishpur, Noakhali. A number of households owning most of the land here have members working abroad. Remittance is the most important source of income in these households making other household members disinterested in agriculture.

Seasonal crop variations in terms of planting and harvesting times are shown in Table 4.

<table>
<thead>
<tr>
<th>Name of Crops</th>
<th>Sowing/planting, months</th>
<th>Harvesting, months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cereals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rice (Aus)</td>
<td>March-April</td>
<td>August-September</td>
</tr>
<tr>
<td>Rice (Aman)</td>
<td>June-July</td>
<td>November-December</td>
</tr>
<tr>
<td>Rice (Boro/irri)</td>
<td>October-November</td>
<td>April-May</td>
</tr>
<tr>
<td>Wheat</td>
<td>November-December</td>
<td>March-April</td>
</tr>
<tr>
<td>Maize</td>
<td>September-October</td>
<td>April-May</td>
</tr>
<tr>
<td>Other Crops</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potato</td>
<td>September-October</td>
<td>February-March</td>
</tr>
<tr>
<td>Sugarcane</td>
<td>January-February</td>
<td>September-October</td>
</tr>
<tr>
<td>Mung Bean</td>
<td>August - September</td>
<td>November- December</td>
</tr>
<tr>
<td>Masur (Lentil)</td>
<td>October -November</td>
<td>February- March</td>
</tr>
<tr>
<td>Khesari</td>
<td>October - December</td>
<td>February-April</td>
</tr>
<tr>
<td>Chilies</td>
<td>November- January</td>
<td>March-April</td>
</tr>
</tbody>
</table>
3.2 Gender dimensions in agriculture

3.2.1 Agricultural activities undertaken by women and men

Although this study focuses on men and women from farm households it was noted from the data that women from functionally landless and landless households are engaged in daily wage work and female headed farm households are more involved in agricultural activities compared to women from medium and large farm households where men are present (Table 5). Thus, the involvement of women in agriculture varies by socioeconomic status and also by village. However, capturing this variation was beyond the scope of this rapid gender assessment.

Pre-production phase

Inter-village variation in women’s involvement in agriculture is quite striking. Across villages women from farm households commonly engage in seed processing for major agricultural crops such as rice, potato, maize and wheat. Women in Thakurgaon are more involved in activities in this phase compared to women from other villages. They prepare organic fertilizer known as gomtura mixing cow-dung, ash and hay for use in the seed beds in both the villages in Thakurgaon. They also carry the seeds and fertilizer to the field and irrigate the seed bed regardless of closeness of the field to the house. But in other villages, women from large and medium households generally do not go to the field for pre-production activities.

Almost all the activities in the production phase except for seed processing are carried out by men. Women mainly are responsible for activities related to seed germination. They submerge the seeds, sieve them and put them in basket for taking to the field. Only women in Thakurgaon carry the seeds to the field as well, while women from other villages usually do not get involved directly in any other pre-production activities.

Production phase

In general, women from farm households (particularly those from medium and large farm households) rarely get involved in activities in the production phase. In most of the villages, they just guard the fields against crop damage by animals. Women from Thakurgaon stand out from women in the other villages in terms of the activities they carry out in this phase as well. In both the villages of Thakurgaon men and women from small and medium farms carry the rice and other seedlings to the field and sow them. They also bring lunch for their husbands in fields. One male small farmer from Thakurgaon said that since he cannot afford to hire daily laborers, he works on his field by himself and his wife brings him lunch.
Women from marginal farm households in Thakurgaon actively engage in field activities e.g., irrigating, weeding and applying fertilizer on their own fields. Aside from working as unpaid family workers, they also work as wage laborers in other farms to earn additional income. For example, a female farmer growing sugarcane said,

> “Once preliminary field work is complete and the sugarcane starts growing he (her husband) gets busy with wage work. So, I carry out all the activities in the field until it is time for harvesting the sugarcane. I manually defoliate the sugarcane, watch out for pest and cut off the infected parts of the sugarcane.”

In Jessore and Noakhali, women are primarily responsible for weeding the rice fields. However, in both areas, only female day laborers and women from female headed households or from households where men are not available for agricultural work undertake agricultural activities outside their homes. While working in the field during the day, women from female headed farm households in Khalishpur use mats as curtains for maintaining purdah. Interestingly, according to key informants, some of the other farm households in Khalishpur also engage women in weeding and other activities, but this take place at night to avoid the embarrassment of having women working outside the home, which leads to loss honor or respect (man-shomman) of the husband and the family in this village.
Jute is produced only in Bhandardoho, Thakurgaon and Mirzanagar, Jessore. In contrast to women from Mirzanagar, women from Bhandardoho carry out weeding in jute field. They also help men in collecting jute fibers and drying them. Other activities related to jute production, processing and marketing are carried out by men.

In all the villages, vegetables are produced as a non-major crop. Involvement of women in such vegetable production is much higher than in major agricultural crops. Women virtually do almost everything when vegetables are produced for own consumption. Even in the case of commercial vegetable production women in villages studied were found to carry out most of the activities.

*Picture 3: Female farmer standing beside eggplants collected from the field [Bhandardoho in Thakurgaon]*
Post-production phase

In all villages, women’s involvement is the highest in post-harvest activities compared to pre-harvest activities. It is common across all the villages for women from farm households to thresh, husk, winnow, parboil and dry paddy. Women from farm households in Thakurgaon get involved in the highest number of activities during this period. Thus, apart from the common activities they also are involved in harvesting, bringing the harvest home side by side with the men and collecting and storing seeds of all major agricultural crops. In Mirzanagar, Jessore, women from farm households carry out home-based agricultural activities only, but many farmers utilize the services of female daily wage workers who undertake activities that are to female farmers in Thakurgaon. Women from Noakhali and Katakhali, Bagerhat are least involved in activities in the post production phase and carry out only activities such as threshing, husking, winnowing, parboiling, and storing.

It is noteworthy that women shoulder most of the responsibilities in the production of perishable agricultural products (e.g., vegetables, eggs). On the other hand, men are mainly involved in the production of non-perishable items (e.g., rice, jute, etc). Thus, women’s products are more vulnerable to spoilage and loss of income. They often sell their products at low prices due to lack of storage facilities.
Picture 5: A woman bringing sugarcane straws home for use as fuel [Uttobaliadangi in Thakurgaon]

Picture 6 (on the left): Female farmer parboiling rice [Uttobaliadangi in Thakurgaon]
Picture 7 (on the right): Female farmer drying rice [Bhandardoho in Thakurgaon]
Marketing

Marketing of produce is carried out exclusively by men in all the villages. Women from farm households may go to the market but for buying clothes and other consumer items and not for agricultural purposes. Involvement of women in marketing is very rare even in the cases, of homestead vegetable production where women are the main producers. Interestingly, involvement of women and men in marketing vegetables varies by size of production. Thus, women sell vegetables from small-scale homestead gardening at home. However, when vegetables are on a commercial scale, men take care of marketing. Men are more mobile, have more social networks and have more experience in getting a higher price. These are some of the reasons why women are not engaged in marketing. Women are perceived to be easily deceived while selling products at the doorstep as they do not know the price and also lack negotiating skills. Household status, social norms and purdah are also mentioned as major constraints for women's mobility outside home.

Picture 8 (on the left): Male dominated marketplace [Uttobaliadangi in Thakurgaon]

Picture 9 (on the right): A man taking bottle gourd to the market [Doriabad in Barisal]
Table 5. Agricultural activities of men and women from all types of farm households

<table>
<thead>
<tr>
<th>No.</th>
<th>Activities</th>
<th>THK U. Baliadangi</th>
<th>THK Bhandardoho</th>
<th>BAG Katakhali</th>
<th>SAT Gobindokathhi</th>
<th>PAT Kobirkathhi</th>
<th>BAR, Doriabad</th>
<th>JES Mirzanagar</th>
<th>NOA Khalishpur</th>
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</thead>
<tbody>
<tr>
<td></td>
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<td>F  M</td>
<td>F   M</td>
<td>F  M</td>
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<td>F  M</td>
<td>F  M</td>
</tr>
<tr>
<td>1</td>
<td>Seeds processing</td>
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<td>*</td>
<td>*</td>
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</tr>
<tr>
<td>2</td>
<td>Uprooting rice seedlings</td>
<td>*</td>
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<td>*</td>
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<td>*</td>
<td>*</td>
<td>*</td>
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</tr>
<tr>
<td>3</td>
<td>Carrying fertilizer and seedlings to the rice fields</td>
<td>*</td>
<td>*</td>
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<tr>
<td>4</td>
<td>Irrigating</td>
<td>*</td>
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<tr>
<td>5</td>
<td>Using calcium carbonate &amp; fertilizer in the gher</td>
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<tr>
<td>6</td>
<td>Using calcium carbonate &amp; polyethylene on poultry floor</td>
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<td>*</td>
<td>*</td>
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<tr>
<td>7</td>
<td>Cutting sugarcane into small pieces for using as seeds</td>
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<td>*</td>
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</tr>
<tr>
<td>8</td>
<td>All other activities regarding agriculture, fishing and poultry are done by men</td>
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</tbody>
</table>

**Pre-production phase**

**Production phase**
### Production Phase

<table>
<thead>
<tr>
<th>No.</th>
<th>Activity</th>
<th>Women</th>
<th>Men</th>
<th>Boys</th>
<th>Girls</th>
<th>Other Adults</th>
<th>Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.</td>
<td>Weeding chilly field</td>
<td>☰</td>
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<td>4.</td>
<td>Planting the saplings</td>
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<tr>
<td>5.</td>
<td>Adding mud in sugarcane field/pruning sugarcane leaf</td>
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<tr>
<td>6.</td>
<td>Preparing fish feed</td>
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<tr>
<td>7.</td>
<td>Weeding jute-field</td>
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<tr>
<td>8.</td>
<td>Planting potato</td>
<td></td>
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<tr>
<td>9.</td>
<td>Watering potato &amp; chilies field</td>
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<tr>
<td>10.</td>
<td>Overseeing gher</td>
<td></td>
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</tr>
<tr>
<td>11.</td>
<td>Providing fish feed, overseeing pond</td>
<td></td>
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</tr>
<tr>
<td>12.</td>
<td>Cleaning moss in the gher &amp; piling it up</td>
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<tr>
<td>13.</td>
<td>Providing heat &amp; medication to poultry</td>
<td></td>
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<tr>
<td>14.</td>
<td>Cleaning the poultry house</td>
<td></td>
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</tr>
<tr>
<td>15.</td>
<td>All other activities are undertaken by men</td>
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<td></td>
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</tr>
</tbody>
</table>

#### Post Production Phase

<table>
<thead>
<tr>
<th>No.</th>
<th>Activity</th>
<th>Women</th>
<th>Men</th>
<th>Boys</th>
<th>Girls</th>
<th>Other Adults</th>
<th>Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Harvesting rice/crops</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Bringing harvest home</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Threshing rice</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>4.</td>
<td>Separating rice from straw/drying, winnowing, &amp; getting it into sacks</td>
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<td></td>
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<tr>
<td>5.</td>
<td>Loading rice on boat</td>
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</tr>
<tr>
<td>6.</td>
<td>Preserving seeds</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td></td>
<td>Activities</td>
<td>1.</td>
<td>2.</td>
<td>3.</td>
<td>4.</td>
<td>5.</td>
<td>6.</td>
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</tr>
<tr>
<td>7.</td>
<td>Harvesting potatoes, sorting, cleaning, &amp; getting it into sacks</td>
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</tr>
<tr>
<td>8.</td>
<td>Drying and preserving rice-straw</td>
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</tr>
<tr>
<td>9.</td>
<td>Sorting big &amp; small fish</td>
<td></td>
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</tr>
<tr>
<td>10.</td>
<td>Freezing and placing fish inside the basket</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>11.</td>
<td>Collecting &amp; selling eggs</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>All other activities are undertaken by men</td>
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<td></td>
</tr>
</tbody>
</table>

* Broader Agriculture (For major crops, fish, shrimp, and poultry)  ● Homestead and courtyard based small scale vegetables and non-agricultural activities

- Not applicable
- Not mentioned by the respondents
Fish farming is a male dominated activity but just like in other agricultural activities, women from small and marginal farm households are actively involved in some activities. Women are usually not involved in the pre-production phase of fish farming. But they commonly prepare fish feed, feed the fish and guard the fish against big frogs and birds. These activities are quite important for fish farming. However, women usually get involved in such activities when the pond is located close to home. In Gobindokathhi, Satkhira female wage laborers also clean moss from the pond and gather the moss for processing as fish feed. In Katakhal, Bagerhat and in Khalishpur, Noakhali women feed the fish and guard the pond/gher only if they are located near home. The rest of the activities are carried out by men.

Home-based poultry and livestock production by women is common in all villages, but relatively large scale poultry is raised only in Gobindokathhi, Satkhira and Katakhal, Bagerhat. Men buy the chicks, poultry feed, medicine and bran in the market for poultry farming. They also help women build the poultry pens, but women carry out all other activities related to poultry farming. Interestingly, while women sell produce from small size poultry at home, men get involved in marketing of larger size poultry products, regardless of the venue of transaction. In Katakhal, women are allowed to raise poultry only at home, but men raise poultry on commercial scale outside home. An example of a successful woman poultry entrepreneur is shown in the box below.
3.2.2 Mobility and Purdah

One precondition for accessing resources is mobility. Thus, mobility of women and men can tell us a lot about their access to resources. It is widely known that in Bangladesh separate spheres are defined for men and women to function. While women almost exclusively relate to the domestic sphere men relate more to the outside world. Women have to observe purdah within and particularly outside home. These norms and practices seclude women from the society curbing different opportunities for accessing resources. Accordingly to one key informant people ridicule women working outside and this is why they try to avoid doing so. She said,

“We do not work outside as people laugh at women (ridicule) who do so. However, in households, where there is hunger, women have to work outside home despite the fact that people laugh at them. Those who can afford not to work outside think about reputation and about the harm it may cause to children and opt not to engage in outside work.”

[Female_KII_Barisal]

Mobility of women varies by village and by socioeconomic status within the village. Women’s mobility is the lowest in Khalishpur, Noakhali and Katakhali, Bagerhat and highest in Thakurgaon. Intra village variation in mobility of women was clearly indicated in the following statements made by a large farmer in Jessore:

“We are from Syed bongsho (privileged clan). So, women from our families do not go out.”

[Male_Large farmer_Jessore]
A woman from a small farm household in Khalishpur, Noakhali reported going to the pond and to the field at times, when there is no other help, but she added that she can go to these places only when there are no male strangers around. Moreover, she covers herself with burka on such occasions.

Across study villages presence of women in a market is considered degrading for the women as well as their male counterparts and their families. Women are usually not allowed to get involved in marketing of agricultural products. Thus one woman from Thakurgaon said,

“My husband buys seeds and fertilizer. ...I don’t go to the market. People would say bad things about me if I did.”

[Female_Small farmer_Thakurgaon]

Women’s agricultural activities are mostly confined within the boundaries of home. Thus, which agricultural activities women may get involved largely depends on the place they are undertaken. Women carry out home-based work mostly, while men mainly undertake outside work.

It would be fair to note that these norms and general patterns do not hold for all households or all communities. Thus, there is a large variation in how these social norms are practiced and negotiated by individuals, households and by different communities. Women from the Hindu village, Gobindokathhi in Satkhira are much more mobile than women from all the other villages in the study except for villages in Thakurgaon. Within the village women from Hindu communities have higher mobility in Bagerhat. Thus, it seems that religion is linked to women’s mobility. Interestingly, regardless of religion women from Thakurgaon enjoy greater mobility. This implies that other socio-cultural norms in the community also influence women’s mobility. Thus, Muslim women in Thakurgaon have much higher mobility. But even in Thakurgaon there exists within village variation in observance of restrictions on women’s mobility by socioeconomic status. Thus, the fact that women from large farm households usually do not work in the field is well illustrated in the following exchange between a female farmer from a marginalized farm household in Thakurgaon and our interviewer,

Interviewer: Many women in your village are involved in various agricultural activities. Are there any expectations in this village that women must observe purdah? Do the families tell women to observe purdah? ...Does your mother-in-law or people from the neighborhood say something like that?

Informant: No, people in this neighborhood do not say anything. My mother-in-law does not say anything as well. She works in the field herself. Everybody works in the field. Only women from households that have a lot of cultivable land do not work in the field. Some of them still go though.”
Overall, women farmers’ presence in the fields is very obvious in Thakurgaon. Women from fish farming households in Bagerhat, Satkhira and Patuakhali go to their ponds and *gher* located close to their house for guarding the fish.

Markets are usually tabooed places for women. Only women from Gobindokathhi reported going to the village market for procuring fish fries and for selling fish when the men are away. In all the villages, women from female headed households and some landless households go to the market. In Noakhali, women from female-headed households go to market wearing *burka* for rice husking for own consumption.

The following exchange between a small farmer from Katakhali, Bagerhat and the interviewer portrays the common practices and attitude towards women’s mobility to market.

**Interviewer:** Do norms in the area allow women to go to market?...

**Informant:** The woman who has nobody else to go to the market has to go herself. …Nobody appreciates when a woman goes to the market. Islamic laws do not approve of this. …If a woman has a husband or sons she would not go to the market. Why would she need to go herself when she has her sons for doing that?

[Male_Small farmer_Bagerhat]

Women only in Uttor Baliadangi and Doriabad were reported to have attended NGO and/or government organized consultation meeting on agriculture within the village at some point in time. Women from Uttor Baliadangi and Katakhali reported going to the house of the Union Parishad member for obtaining subsidized fertilizer and seeds from the government and for procuring permit for sale of cattle.

Women from Uttor Baliadangi reported going to Agriculture Extension Office located in the town for obtaining information regarding poultry and livestock. Women poultry farmers from Gobindokathhi reported going to the poultry owners’ association office in the town for loan and consultation. In Uttor Baliadangi and Katakhali women reported going to the veterinary hospital for treatment of livestock. NGO offices are located in towns and so, women from all villages except for Khalishpur, Noakhali go to town for savings and credit related activities.

Men’s mobility for agricultural purposes is much more frequent and varied in nature. They go much further and more frequently and to many more places for loan, buying and selling inputs and products and for information.
### 3.2.3 Access to and control over assets and other agricultural resources

**Agricultural assets**

Men usually own agricultural assets like land, pond, *gher*, commercial poultry and livestock, equipment and technology etc. It was clearly mentioned in the FGDs that as opposed to Hindu women Muslim women are entitled to father’s property, but they rarely claim the property for maintaining good relationship with the natal family, which is supposed to serve as safety net for the women. One man reported that he has bought some land in his wife’s name. Data from an FGD also mention such practices. Interestingly regardless of ownership on paper, men always treat all the land owned by the household as land owned by them. Women who own land on paper virtually have no access and/or control over it. One medium farmer from Khalishpur, Noakhali clearly described the general situation saying,

“There is no property in my wife's name. I control everything.”

[Male_Medium farmer_Noakhali]

Explaining why men usually do not buy land in the name of their wives a woman from a large farm household in Bagerhat simply said,

“Men don’t believe us.”

[Female_Large farmer_Bagerhat]

The medium farmer from Noakhali was explicit about the problem in doing so. He said,

“Buying land in their (wives’) name is bhejai (fraught with problems). Once you do so others will eventually get hold of the land.”

[Male_Medium farmer_Noakhali]

All of these statements reflect Muslim land rights according to which land owned by a woman goes to men in her family.

Women play a critical role in poultry and livestock and carry out almost all related activities. When asked about ownership of poultry most of the women said they own them. However, one female key informant said,

“Women take care of poultry and livestock, but the ownership remains with men.”

[Female_KII_Satkhir]

Thus, there is also variation in ownership of poultry depending on the scale.
Access to extension service and other resource for agriculture

Men are much more mobile in the public domain compared to women. So, they get relatively easy access to information from tea stalls, markets, village leaders, Union Parishad Office, Agricultural Extension Office and Fisheries Office, etc. However, there seems to be a gradient among men from different socioeconomic strata in the ability to access such services. Thus, a small farmer from Noakhali said,

“They (staff from Extension Services) would not value us. So, we don’t go there. We are poor people. They don’t know us in the agricultural or fisheries extension office and we don’t go there. If we, the illiterate people went there we wouldn’t be valued by them.”

[Male _Small farmer_Noakhali]

Extension services are more available in non-remote areas than in remote areas. Even within a village roadside plots may draw more attention of extension services than other plots. As a male farmer from Jessore said,

“Extension officers come for giving advice. They come during plantation of jute, rice and legumes. They posted signboards on the roadside plots. They supplied these farmers with seeds free of cost. …They are not in touch with me as I do not have any roadside plot.”

[Male _Medium farmer_Jessore]

Due to the male dominated social structure men are usually the first point of contact for any new initiatives on agricultural or fisheries extension. They are the ones to get access to new technology and training on it. The following exchange with a female small farmer from Jessore portrays this well.

Informant: People from Agricultural Extension Services came here about four months back.
Interviewer: Who came?
Informant: Men.
Interviewer: What did they say?
Informant: I did not hear them.
Interviewer: …Didn’t they talk to women?
Informant: No.

Women farmers may go to the village shops. But they rarely go to tea stalls for chit-chatting, which is a very important way of exchanging information about agriculture among men. Going to markets is even rarer for women. When they do go to the market they usually go for buying clothes and similar consumer items and not for any agricultural transaction or exchange of information. Only a very few women farmers, particularly those who are from female headed households or from villages with relatively greater acceptance of women’s mobility go to market for agricultural purposes or to public offices for extension services and consultations. Interestingly, some women in Katakhali and Uttar Baliadangi were reported going to the veterinary hospital for treatment of poultry and livestock. Most of the women do not even
know much about government extension services. This is true even for Thakurgaon, where women are so much more involved with agriculture. The following is what an interviewer heard from one of the female informants,

“They who are informed and those who have large scale production go (to the agricultural extension office). ...Men know about these services as they go out.”

[Female Small farmer Thakurgaon]

Agricultural information and credit

Compared to men, women have lesser access to radio, television and mobile phones, which are useful means of obtaining agricultural information. Although women are not exposed to training from the Agricultural Extension Office or the Fisheries Office, they have access to training on agriculture organized by NGOs. However, only in one village women reported attending such training once. In Gobindokathhi, Satkhira an association of poultry farmers have been established. The association imparts training to people interested in raising poultry. Women also get training from this association.

Well-off male farmers have more access to agricultural loans from public banks mainly because women do not own land and thus have no collateral required by public banks for issuing loans. On the other hand, women have more access to micro-credit than men. Micro-credit programs mainly target women as their loan recovery rate is much higher than men's.

Use of agricultural technology and mobile phone

Agricultural technologies such as machinery (e.g., tractors, power tillers, thresher, etc), improved in-bred cereal seeds, hybrid seeds, chemical fertilizers, pesticides, and irrigation facilities (water pumps, deep tube wells) are used almost exclusively by men. In villages, where fish farming is pursued as the major livelihood strategy, improved varieties of fish, fish feed produced and marketed by companies or the government, fertilizers and poisons are used. Women only use improved varieties of seeds, fish feed, and technology related to poultry.

In villages, where electricity is available, more men than women access radio and television for obtaining agricultural information. Mobile phones are particularly used by men for consultation regarding agriculture as well as for communicating with markets. Despite the fact that women have lesser access to mobile phones, women from Gobindokathhi, Satkhira particularly mentioned that mobile phones enabled them to carry out agricultural transaction while staying at home. Through mobile phones they can also obtain information on agriculture and arrange necessary services e.g., vaccine for poultry. In Mirzanagar, Jessore and Khalishpur, Noakhali women from farm households are not much involved with agriculture and they do not usually use any agricultural technology.
An example of men’s perception regarding women’s knowledge and use of technology is the following narration by one key informant from Kobirkathhi, Potuakhali:

“Women don’t even know how to use technology. Men use tractor, power tiller. …Women cannot even spray pesticides. Women don’t know anything. They are completely ignorant of machines. They don’t even have any experience. Men, on the other hand, have the know-how.”

[Male_KII_Patuakhali]

Use of new technology has induced some changes in women’s and men’s involvement in certain agricultural activities. Thus, for example, female farmers traditionally carried out threshing and husking of rice. However, introduction of technology turned those into male dominated activities. There are several underlying factors for such a shift. First, in most cases, these technologies are used in the field and not at home. So, these activities are no longer the home-based activities that women used to engage in. In most of the villages (except for villages in Thakurgaon) involvement of women from farm households in field-based work is still linked to loss of honor (man shomman) for the women as well as their husbands and the family. Moreover, these machines are usually operated by outside men, making them more inaccessible to women.
There exists a tension between farm size and equitable use of technology by gender. It is well-known that women from landless households and female headed households often engage in agriculture as wage laborers. They work both inside and outside the home. In some villages, women from small farm households also get involved in field-based agricultural work. But restrictions on mobility and purdah practices are most stringent in larger farm households that can afford not to involve women in agriculture. Unfortunately, technologies targeted towards large scale production end up being used by large farmers, where the scope of women’s involvement is minimal.

**Decision making on agricultural matters**

While there is variation in agricultural activities undertaken by women and men in different villages not much variation was observed in the decision making pattern across villages. Men are the main decision makers in almost all phases of the production cycle of major agricultural crops and fish. They select the agricultural plot, pond or gher; they decide whether to lease in land; the type of leasing; which crop or fish to grow; and which technology to use. Even in Thakurgaon, where women are relatively highly involved in agricultural activities their participation in major decisions regarding agriculture is low. One woman from a small farm household in Thakurgaon, said,

“Husbands are the real owners of household property and actual decision makers in relation to sharecropping or leasing out of land for agriculture, etc.”

[Female_Small farmer_Thakurgaon]

According to this farmer, her husband consults her only when selecting crops for cultivation. But the final decision still is made by her husband.
As explained in FGDs, women from economically disadvantaged households are usually members of micro-credit organizations. According to FGD participants, in such households, women and men take joint decisions about loan. However, data from IDIs show that the reality is more nuanced. Thus, for example, a male small farmer from Thakurgaon said,

“My wife is a member of Grameen Bank, I have asked her to be a member and to take loan. I determine when and how much loan should be taken for what purpose. Although she is the borrower she cannot use the loan without my consent. She would not be disloyal to me.”

[Male_Small farmer_Thakurgaon]

In well-off farm households the source of agricultural credit is usually public banks and men take decisions about loan from such sources. Decisions regarding amount of produce to be sold; when and where to sell it; and at what price, etc are also taken by the men.

Women’s mobility outside the home for agricultural activities largely depends on their husbands particularly in the villages apart from Thakurgaon. Thus, in response to the question whether she has to ask her husband’s permission for engaging in wage work one female farmer cum wage laborer in Jessore said,

“He sends me to work (as a wage laborer) if he wishes. I need to ask his permission if I want to work somewhere. If he is okay with it he gives me permission. If he forbids me to do the work I don’t do it.”

[Female_Small farmer_Jessore]

Male farmers play a dominant role in decisions related to marketing of the produce. This is well illustrated in the following statement of a male small farmer from Thakurgaon.

Informant: These decisions (regarding how the produce will be marketed, to whom it would be sold, etc) are mine as I am the malik (owner) of the produce. I am in charge of marketing. I decide who I’d sell the produce to.”

[Male_Small farmer_Thakurgaon]

Women are the sole decision makers only in issues concerning small size vegetable production, poultry, fish and livestock primarily aimed at meeting household consumption needs. Thus, for example, a woman from Khalishpur, Nokhali raising poultry said,

“We eat the eggs and sometimes sell them. …I keep the earnings and I use it. … If my husband needs money, I give my husband some from these earnings. …When I use the earnings myself I do not need to ask permission of my husband.”

[Female_Small farmer_Noakhali]
A rich fish farmer from Gobindokathhi, Satkhira told the interviewer,

“It is her (his wife’s) decision whether she would sell them (the eggs) or consume them. I am not at home when the dealer comes. So, she sells the eggs and receives the money herself.”

[Male_Large farmer_Satkhira]

He indicated things are quite different when it concerns selling of fish. He said,

“In case of selling of fish I have to take all the decisions.”

[Male_Large farmer_Satkhira]

Control of income

Men get involved in marketing of vegetables, poultry products and livestock if the size of production is larger regardless of the venue of transaction (i.e., home or market). Whenever there is a sizeable surplus of vegetables produced by the women, men take them to the market for getting a better price. In such cases, proceeds from the sale are kept by the men. Men from households, where women are engaged in medium or relatively large size poultry production (e.g., Gobindokatthi, Satkhira and Katakhali, Bagerhat) sell the chicken and eggs at home. According to men, this makes perfect sense as women do not know the market price and do not have the skills for negotiating price. Men who manage medium and large poultry farms are the ones who sell the products in the market and also keep the cash from sales. Thus, their wives do not have any control over marketing of the product or income from it. Usually women only from female headed households have control over the proceeds from sales of agricultural products.

Important decisions regarding purchase or sale of agricultural assets, or any large investment are predominantly made by men whether or not they consult the women. Although wives may keep some cash, husbands still control its use or make decisions on how the money will be spent. A male small farmer from Thakurgaon said,

“I let my wife keep the earnings. She remains at home so this is convenient. You cannot expect me to carry the money with me all the time. But I take decision regarding how this money will be spent.”

When asked whether his wife can use the money as she wish he made clear,

“No. She has to get my permission.”

[Male_Small farmer_Thakurgaon]

Statements of a medium farmer from Khalishpur, Noakhali reflect the lack of decision-making power of women and how men justify this. He said,

“I earn and I spend my earnings. …She (his wife) wouldn’t know or even want to review the accounts. I also don’t think there is any logic behind sharing such things with her. Once I took Tk.
900,000 in loan. If she came to know about that she’d get a heart attack. I, on the other hand, have earned money investing the amount and paid back the loan. Suppose I have a bank balance of Tk. 500,000 and give the money to her. Do you think she’d be smart enough to use the money sensibly?”

[Male_Medium farmer_Khalishpur]

3.3 Perceived impact of new agricultural technology

Although most of the women do not use new technology directly they still experience different impacts from the use of new technology. Thus, both women and men readily recognized the positive impact of new technology such as increased productivity, production and income. Interestingly, analysis of the impact of new agricultural technology by men tended to focus more on increase in household income, while women emphasized more on household food security, health, nutrition and children’s education. Both of them were quite articulate regarding both the positive and negative impacts of new technology.

In relation to adoption of machinery e.g., tractors and power tillers, farmers commonly mentioned that they save huge amount of time and labor and make large scale production possible. Irrigation technology; chemical fertilizer, pesticides and weed control technology were appreciated as they enable greater production and allow easy solution to pest control. Both men and women across the villages appreciated these technologies because they save time and demand lower investment of labor.

The positive impact of new technology on reducing poverty and providing food security was iterated by a woman from Thakurgaon as follows:

“There is no aubhab (scarcity) anymore. In the past we ate kochu (arum); could afford only small amount of rice; ate chhatu (bread, wheat and maize powder). Nobody eats them now. Now, both rich and the poor eat rice three times a day.”

[Female_KII_Thakurgaon]

Groups of women from Doriabad, Barisal mentioned improved economic status. An indicator of it according to them was: “Ability to construct brick house replacing the previous tin house.”

Medium and small farmers reported the positive impact of agricultural technology such as increased income on food security (tinbela bhat or three rice meals) and nutrition, better housing, savings, opportunities for recreation and overall increase in the living standard. Increased ability to better educate children came out very strongly as a highly appreciated positive impact of the use of new technology. The people in several villages also felt that the agricultural technologies have added to Shukh-shanti or happiness and peace in life.
However, people talked about the downside of these technologies as well. They mentioned loss of food taste and quality of the food; loss of soil fertility and creation of dependency on chemical fertilizers; loss of agricultural diversity (e.g., lower fruit and winter crop production) and extinction of indigenous crops and fish species; loss of grass leading to reduction in livestock. While greater access to fish was mentioned due to greater production and income, scarcity of small nutrient rich fish was also mentioned. According to men increase in production of new varieties of vitamin rich vegetables is partially compensating this loss.

Health hazard was mentioned as a major negative consequence of new technology. Women mentioned pollution of water due to the use of fertilizers and pesticides leading to health hazards. Health problems mentioned across villages both by men and women were: diarrhea, nausea, dizziness, gastric, skin disease, diabetes, etc. Women from Gobindokathhi, Satkhira reported that they suffer from asthma due to poultry raising. Women from several villages also mentioned death of useful insects, birds and livestock due to widespread use of pesticides. Harm to poultry and livestock caused by fertilizers and pesticides was also reported, which directly affect the women as primary caretakers. Men can also be affected if the size of poultry and livestock is relatively large.

The impact new technology for post harvest operations seems to vary by size of farm and by landholding status. In small and marginalized farm households the impact was more nuanced. Among medium and large farm households, use of new technology in major crops (both in cereal and fish production) had removed women from traditional agricultural activities. These activities are now carried out either by men or by female wage laborers. So, women from farm households have more leisure time and they can invest the free time in child rearing and other household chores.

Although such technology had freed up most women’s time in small farm households as well, this happened in the context of mechanization of other agricultural activities leading to increase in production size. So, women from these households now have to get involved with storage and preparatory activities for marketing of a much larger size of harvest. Women also get engaged in relatively larger scale poultry production. In Thakurgaon, where gender norms are relatively relaxed, women from these households started working in the field as well.

In Doriabad, Barisal, women also mentioned getting more involved in raising poultry and making mats during their free time. This brings them some income, which they can use in buying household necessities and bear the costs of children’s education. According to them, this contribution is earning them *shomman, morjada* (respect and reputation) and increasing their acceptability to the society leading to a better relationship with relatives and neighbors. Similarly, women from small farm households in
Thakurgaon mentioned being able to work outside the home apart from carrying out household chores. They also raise poultry. These engagements have allowed them to earn more decision making power within the household.

A woman from a small farm household in Jessore explained the advantage of the technology as follows:

“In the past I had to spend two days in husking rice from a two bigha plot. Now, by afternoon I can husk rice from a one-bigha plot. … When husking rice using a machine I can switch it off for a while and breastfeed my child or do some household chore.”

[Female_Small farmer_Jessore]

Concern about drastic reduction in diversity of agricultural crops due to widespread use of new technology was most strongly raised in areas, where saline water fish farming is prevalent. Promotion of profitable saline water fish production has had an adverse effect on cultivable land. Salinity has been an environmental problem for this region for quite a long time. Initially salinity was limited to the vicinity of river and canal. People treated salinity as a challenge and were eager to protect land from salinity. Once shrimp cultivation started in the area people started treating salinity as an opportunity and lucrative business in shrimp cultivation started flourishing. Thus, local farmers once involved in agriculture shifted to shrimp farming. This shift bears some gender implications as women tend to be more involved in agriculture than in fish cultivation.

Picture 83: Ever-expanding barren land due to excessive salinity [Gobindokathhi in Satkhira]
Trees and grass have almost disappeared in Gobindokathhi, Satkhira due to high salinity of water. This has negative impact on livestock raising with which women are traditionally involved. Lack of drinking water makes men from Gobindokathhi to go about three miles on bicycle for fetching water. Saline water is not usable for bathing. But most of the villagers cannot afford to use non-saline water for the purpose. This, according to them causes skin disease. Women talked about avoiding pregnancy due to scarcity of water and extremely poor communication system.

3.4 Aspirations

Women from three of the studied villages (Thakurgaon, Jessore and Noakhali) voiced aspiration for own agricultural land. Women from Doriabad aspired for increased involvement of women in agriculture. Women from Bhandardoho, Gobindokathhi and Khalishpur wanted to raise livestock, while women from Gobindokathhi wanted to grow vegetables on a commercial basis.

In terms of new technology male farmers wanted to have high quality fertilizer, pesticides, fish fries and fish feed. They also wanted low cost simple agricultural technology. Men from Doriabad, Barisal wanted to have access to rice varieties tolerant to submergence. Men from villages facing flooding and challenges in irrigation and water logging wanted embankment and dredging facilities.

In Jessore, small farmers commonly go a long distance for threshing rice. So, one woman from Jessore wished that threshing machines be available at the household level so that women can thresh the rice and meet their needs rather than depending on men to go one and a half kilometers for threshing it. This woman also wanted technology for parboiling rice. She also suggested that several households could share this technology. She preferred group meetings for receiving agricultural information as there is a scope for interaction leading to clear understanding of the messages or advice. Women from Khalishpur, Noakhali, where NGOs do not operate aspired for capital.

Training on agriculture and fish farming was a common expectation. Women farmers wanted to have training arranged for them within the village. Men from Noakhali wanted gender-segregated training for women on fish farming, vegetable production and livestock raising. One woman from Gobindokathhi, Satkhira clearly spelled out the openness and eagerness of women to receive training. Training is highly appreciated as it is perceived to be very useful for women wishing to generate an income. Interestingly, this woman was interested not only in training on poultry but also on other crops for enabling her to increase the level of income she generates currently. She said,

“There is no limit to knowledge. … We could learn lots of new things from someone who has relevant knowledge and experience. If we had more knowledge we would not have to face trouble
in rearing poultry. Currently, we have poultry farm only. I feel there are a lot more to know. Through this learning, I can find out other valuable options beside poultry, which can be economically gainful in the end. Training increases intelligence as well. I used to be a member of an association. I joined many training sessions in different places organized by that association.”

[Female Medium farmer Satkhira]

Cooperation from Agricultural Extension Office was particularly mentioned as an expectation of both women and men in four of the villages. A female farmer from Doriabad, Barisal stated it would be convenient for female farmers to receive agricultural information through television and mobile phones.

Both women and men from Thakurgaon, and male farmers from Satkhira and Doriabad wanted to have fair price for vegetables.
4. Discussion

Gender divide in agriculture in Bangladesh is quite prominent and particularly visible along the lines of venue of production (i.e., home-based or non-home-based); size of production; type of products (i.e., perishable versus non-perishable goods; subsistence versus market-oriented production; and technology use. This divide is produced and reproduced through enforcement of traditional gender roles; gender norms of restricted mobility and *purdah*; separate spheres for women and men to function and through linking women’s observance of such norms to honor of individual woman, her husband and the family. Thus, despite strong justification for addressing gender issues in agriculture of Bangladesh the challenges in doing so are difficult and numerous.

However, interaction of such gender regime with socioeconomic status; religion; other internal and external factors and constant negotiations of individuals, households and even communities with this regime generate both challenges and opportunities for intervention. Bangladesh society is certainly not monolithic. Despite some commonalities, communities, households and individuals vary from each other and these variations suggest possibilities for intervention and change.

Question arises as to for which groups of farmer interventions should be designed. When productivity is concerned it is much easier to design interventions for large farmers and to demonstrate relatively quick impact on a large scale. Findings from this study show that if gender is considered for long term gains it would be much easier to promote agriculture among women from small and marginal farms and landless households compared to women from large and medium farm households. This is because the need for women’s involvement for betterment of life is felt strongly among small farmers. This pressure also makes these farmers relatively flexible in observing prescribed gender norms. This is why in the same village, where women from large farms are completely detached from agriculture, women from small farms are not and they even get involved agricultural activities outside home. In other words, despite social cultural norms e.g. purdah and restricted mobility, women from small and marginal households are compelled to get involved in agricultural activities and even carry out field work outside their homes out of economic necessity. Thus, at this stage of development in Bangladesh poverty is a driving force for women’s labor participation in field activities.

Undoubtedly, larger community context influences and shapes gender in agriculture. Thus, in relatively less conservative communities it would be easier to address gender in agriculture than in a conservative community, where stringent gender norms prevail. Studied villages in Thakurgaon and Satkhira are good examples of relatively less conservative communities, where acceptance of interventions for addressing
gender might be higher. In contrast, it might be challenging to achieve community buy in for such interventions in studied villages of Noakhali, Bagerhat, Jessore and Patuakhali.

This study included only eight villages from seven districts of Bangladesh. So, the study findings are in no way generalizeable. Also, this was a rapid assessment which allowed us to ensure representation of all the segments of farmers and all the crops in each village. Large villages, in particular posed challenges in ensuring participation of farmers from all corners in group sessions. However, despite these limitations some insights have been offered by this study which would be useful in future work on gender mainstreaming in agriculture of Bangladesh.

Nevertheless, it is clear from the study findings that several gender issues need to be addressed in agriculture across studied villages. First, although positive impact of new technology is evident from the data it is also clear that the technology is not particularly gender friendly. This technology is more focused on the production phase dominated by men. The technologies for post-harvest operations (e.g., threshing and husking machines) pay-off most if used on a large scale. They often cannot be brought to household compound due to poor communication. Thus, it is best to use these technologies in the fields, where men usually work. These machines have male operators who are usually helped by male farmers even when the machines are brought home. Thus, women farmers can hardly get involved in this operation. The perception that women cannot deal with technology persists despite the fact that women from landless households are often hired to use this technology. Women from some marginal households also use this technology and report the advantages of using them in terms of time and labor saving. Thus, it'd be interesting to see whether it is possible to promote women's participation in operating these machines, which can be empowering and status enhancing for them. In areas, where such initiatives do not yet hold any promise pedal threshers for husking paddy might be an alternative for keeping women involved and allowing them to reap the gains from such involvement.

Development of technology needs to take into account gender needs and the benefits it would accrue to male and female farmers. It is important to reflect on potential gender impact of technology. Who the technology will be used by; where and how will it be used; and who will benefit from its use; whether the technology would increase or decrease the gender gap in agriculture; etc need to be considered. Unless the source of new crop, fish, and livestock varieties and agricultural technologies takes women's different needs into account, the product that is being disseminated by extension systems may not meet different needs and preferences (Meinzen-Dick et al., 2010).

Second, group-based approach in intervention holds promise as it is difficult and not efficient to target individual women farmers, particularly in a context where they are not recognized as farmers. On the other hand, it is also challenging for an individual woman to ensure access and control over resources. In
view of this, group-based training, access to assets (e.g., acquisition of public land by landless women agricultural labor and small farmers) and involvement in the value chain may hold promise. There is evidence that group-based interventions were more effective compared to interventions targeted towards individual female farmers. Thus, a study of gender impact of transfer of modern agricultural technology to farm households in Bangladesh suggests that group-based programs targeting women have a greater potential to address gender relations within the household and society than do programs targeting women as individuals (Naved, 2003). Moreover, research by Nathan and Apu (1998) shows that engagement of and benefits to women have been sustained where poor women’s groups were provided enabling conditions to claim long-term rights over public water bodies. So, feasibility and effectiveness of establishing group ownership of women on post harvest technology with help of micro-credit and NGO training need to be explored.

Third, across the board women are not involved in marketing of the produce and they usually lose control over income - the fruit of their labor. The market is seen as a place which pollutes women, and women who go there lose social status (Kelkar et al). Men cite women’s lack of knowledge of price and incompetency in negotiating price as a reason for men’s involvement in selling women’s products even at home. Thus, it seems that training on financial management and price negotiation might be useful for women who engage in agricultural production. Also, access of female farmers to information on market price and buyers through mobile phones may be helpful. Wholesalers might be interested if the women organize themselves into groups and sell the products in bulk from homestead. Arrangement of cash transfer through mobile phone would make involvement of women in marketing easier.

Fourth, extension services and training on agriculture needs to be gender friendly. Most of the extension services are delivered to male farmers and they hardly reach out to female farmers. Thus, female farmers’ needs are not catered by extension services. As women are involved in poultry and small livestock farming prompt extension services need to be ensured for timely treatment of the poultry and livestock. Such services need to include consultation over mobile phone, which can be very useful in emergencies. In designing training from extension services, NGOs and other organizations convenience of women farmers in terms of venue, time, sex of the trainer, etc need to be considered for making the training a success. Also, Training for female farmers needs to be arranged considering the village context. In some of the villages such training must be gender segregated, while in others keeping men in the loop would be strategic in enhancing their cooperation.

Develop storage facilities for large scale vegetable production, where women are particularly involved (e.g., potato production in Thakurgaon). Women are more involved in vegetable production, which is perishable. Unavailability of electricity in many rural areas and scarcity of capital make it extremely difficult to set up storage facilities. Innovative solutions need to be thought through for resolving this issue. Both indigenous and modern technology need to be considered in developing an appropriate solution.
Promoting salinity tolerant rice is a requirement in Gobindokathhi, Satkhira and Katakhali, Bagerhat. Gobindokathhi is a Hindu village and women are more mobile and involved in production here, while Katakhali is a Muslim dominated village with strict gender norms and practices in place. So, it needs to be carefully thought out how to address gender issues in cultivation of this rice in these two different settings. In Gobindokathhi, the level of salinity is higher and fish other than shrimp cannot be grown here. Thus, cage cultivation of salinity tolerant pangas and tilapia may be tested out here.

In Gobindokathhi and Katakhali, women engage in poultry farming. However, while in Gobindokathhi, women are the main poultry farmers regardless of the size of the farm, in Bagerhat women engage in small size home-based poultry farming only. In contrast, to Gobindokathhi, where women are also engaged in large poultry farming and in Katakhali only men undertake large poultry farming off household. In both the places marketing of the produce is carried out by men and women lose control over the income. It is desirable to ensure that women can sell their own product and retain control over it. This would require financial management training; skill building in negotiating price; linkage building between the women farmers and readily available extension services. The successful woman poultry farmer from Katakhali can be used as a role model for encouraging other women farmers.

Villagers in Kobirkathhi, Patuakhali are urban centric. Men from most of the households work in urban areas remitting income to the village. The absentees as well as those who are left behind are not much interested in agriculture. Fallow land is in abundance here. Cultivable land is usually leased out. Thus, it would be more productive to target sharecroppers here. There is a tendency to grow crops that are not labor-intensive. Men openly label themselves as lazy. They do not value women much and often pass biting remarks about them. Due to conservative gender norms it would be extremely challenging and may even be counter-productive to try to get women come out of their home for agriculture. So, as an entry point promoting home-based poultry and livestock, fish culture near the homestead holds promise here. Also, winter cropping may be promoted here with innovative agronomy such as surface seeding. As this crop is not labor-intensive it may be explored whether women can get involved in this.

Flooding is one of the major challenges in Doriabad, Barisal. Submergence tolerant rice varieties definitely hold promise here. However, promotion of this rice in a gender balanced way might be challenging. The villagers suggested floating cultivation in the vicinity of household involving women, feasibility of which can be explored. Introducing multi-crop system in Patuakhali initiating maize and wheat production may increase employment opportunities for women in agriculture.

Prospects of duck raising and horticulture raising bed may be considered for women in this flood prone areas such as Doriabad. Khalishpur, Noakhali is a conservative areas and women’s mobility is extremely low here. There are many ponds within boundaries of the households. However, they rarely engage in fish
cultivation for commercial purpose. Involvement of women in fish farming in household ponds may be explored here. Small varieties of nutrition-dense fish can be grown here for own consumption as well as for commercial purposes as these varieties of fish has a high price tag in the market nowadays. Also, women here make fine quality mats and fan for home using a special kind of plant known as *mostak*. Production of *mostak* is quite easy. They grow on the pond side and do not require any special attention or care. Growing this plant and making mats and fans by women may become an important source of income for women.
5. Recommendations

a) Target small and marginal farmers in order to design and implement gender-sensitive agricultural interventions. Female farmers from medium farm households may also be targeted in less conservative villages, where women are already relatively more involved in agriculture.

b) A review of extension services for making them more gender sensitive, efficient and effective is crucial. Extension workers can gain from gender training and training on gender mainstreaming agriculture. Use of more female extension workers might be useful in overcoming some of the barriers in working with female farmers, particularly in relatively conservative areas.

c) Government initiative for computer based agricultural information access at the union level needs to go to the village level in order to enable women to benefit from it. Interventions of NGOs like D-net could be scaled up for addressing this. D-net sets up computer centers in rural Bangladesh; builds computer literacy; and offers agricultural information to male and female farmers. The information base needs to include areas where women are particularly involved (e.g., vegetable production, livestock and poultry raising, etc).

d) Public-private partnership and public-NGO partnership may play an important role in overcoming challenges in targeting individual female farmers. It is actually difficult and not efficient to target individual women farmers, particularly in a context where they are not recognized as farmers. On the other hand, it is also challenging for an individual woman to ensure access and control over resources. In view of this, group-based training, access to assets (e.g., acquisition of public land by landless women agricultural labor and small farmers) and involvement in all the phases of production may hold promise. Thus, working in partnership with NGOs, who are well known for forming and working with female groups might help in addressing this issue. The NGO sector may play more active role in training female farmers; initiating collective action e.g., in marketing of produce.

e) More active engagement with the NGO sector based on identified needs and gaps might be helpful in gender mainstreaming in agriculture. The NGO sector plays an active role in training female farmers. NGO groups of women can be effective in collective marketing of produce. NGOs can also be effective in negotiating marketing at the doorstep. NGOs can play an important role in training women in marketing and developing their skills in it.

f) Training for female farmers needs to be arranged considering the village context. In some of the villages such training must be gender segregated, while in others keeping men in the loop would be strategic in enhancing their cooperation. Financial literacy training of female farmers’ for enabling them to efficiently engage in the marketing needs special attention. This training may be offered both by the government and the NGOs for ensuring that women can compare products and make decisions based on a clear understanding of the characteristics and conditions of the products available and can
negotiate price. In order to be effective such training needs to take in account convenient venue and timing for women.

g) Introduce prepaid cards and mobile phone plans to make loan payments and transfer of cash by women farmers enabling them to overcome social constraints that restrict women’s mobility or the people with whom they can interact.

h) An attempt to diversify women’s engagement with agriculture using opportunities at hand may be fruitful. In some rural areas (e.g., Noakhali), many households own ponds, which are within the households compound. However, women rarely engage in fish cultivation on commercial purpose. Involvement of women in fish farming may be explored here, where women’s mobility is extremely low. Small varieties of nutrition-dense fish can be grown here for own consumption as well as for commercial purposes as these varieties of fish has a high price tag in the market nowadays.

Also, women in Noakhali make fine quality mats and fan for home using a special king of plant known as *mostak*. Production of *mostak* is quite easy. They grow on the pond side and do not require any special attention or care. Growing this plant and making mats and fans by women may become an important source of income for women.

In areas submerged with water for several months in Barisal, villagers suggested floating cultivation in the vicinity of household involving women. Introducing multi-crop system in Patuakhali initiating maize and wheat production may increase employment opportunities for women in agriculture.

i) Campaign and training involving role models for promoting larger scale poultry and livestock raising might be useful.

j) Development of technology needs to take into account gender needs and the benefits it would accrue to male and female farmers. Women, particularly from small and marginalized farm households work very long days balancing a variety of tasks related to crop, livestock and poultry production, wage employment, childcare as well as food preparation, storage and collecting water. Introduction of new technology in these areas may have important time-saving benefits for women and can help promote women’s participation in more productive activities. Greater involvement of women in agricultural research and higher education could also enhance the development of female-friendly technology. Unless the source of new crop, fish, and livestock varieties and agricultural technologies takes women’s different needs into account, the product that is being disseminated by extension systems may not meet different needs and preferences (Meinzen-Dick et al., 2010).

k) Develop storage facilities for large scale vegetable production, where women are particularly involved (e.g., potato production in Thakurgaon). Women are more involved in vegetable production, which is perishable. Unavailability of electricity in many rural areas and scarcity of capital make it extremely difficult to set up storage facilities. Innovative solutions need to be thought through for resolving this
issue. Both indigenous and modern technology need to be considered in developing an appropriate solution.

I) Access of female farmers to information can be created and broadened through use of mobile phones. Information needs to be available on agricultural activities where women are involved and on market for enabling women to get involved in marketing.
References


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