

Engendering Agricultural Extension Services and Agricultural Marketing: Promoting Female Headed Households Farmers' Economic Empowerment for Securing Nutrition



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Abbreviations

ASA	Association for Social Advancement
BRAC	Building Resources Across Communities
CEDAW	Convention on the Elimination of All Forms of Discrimination against Women
DFID	Department of International Development
EAS	Extension and Advisory Services
FAO	Food and Agriculture Organization of the United Nations
FGD	Focus Group Discussion
FHH	Female Headed Households
ICRW	International Centre for Research on Women
IFAD	International Fund for Agricultural Development
INGENAES	Integrating Gender and Nutrition within Agricultural Extension Services
MHH	Male Headed Household
NAEP	The New Agricultural Extension Policy
NGO	Nongovernmental organization
WEAI	The Women's Empowerment in Agriculture Index

Executive Summary

Background

This study found that women were massively contributing to agricultural production in Bangladesh. The persisting gender norms regarding women's roles and public sphere participation are unequal compared to men. This severely limits women's opportunities to enjoy and exercise their full political, social, economic, civil and cultural rights. Farmers of female-headed households (FHH) have changed their fate by hard work and contributed to securing economic wellbeing and nutrition for their family members. The priority is now to expand the agricultural extension services to provide women with assistance and to integrate them in agricultural marketing. This study also recommends including men in the women's empowerment process to reduce gender gaps and more effectively improve society. Gender sensitive planning, implementation, and monitoring and evaluation will also facilitate women's empowerment and impact nutrition.

Objectives and Methodology

The objective of this research is to incorporate women in extension services to enhance their economic empowerment to secure nutrition in their households. This study was carried out in Manikganj district with the help of Karmojibi Nari. The information was collected from women farmers of FHH, Government extension service officer, Building Resources Across Communities (BRAC) and Karmojibi Nari staff members, the chairman and another member of Manikganj Chamber of Commerce, and a group of community men. We used the in-depth interview method and Focus Group Discussion method as qualitative tools to collect data from the different target groups.

Summary of Key Findings

The women farmers' experiences of vulnerability were mostly similar apart from their individual struggles. Everybody had a different story to share, but her observations about extension services almost matched those of the other women. They did not follow the traditional gender roles of farming and did almost all the work needed for good production. Due to the socio-cultural norms such as purdah¹ and men's superior position over women that heightened the risk that women (especially the younger women) would face social disgrace, they generally preferred to avoid the market even though they were involved in agriculture. Power struggles and unequal distribution of resources in families were less visible and women farmers had control over income, as the husbands were absent. They had faced severe poverty and overcome that to ensure food security, but their nutrition status remained poor. Increased food security did not improve the nutrition level drastically, as they were happy to have full meals three times per day regardless of nutritional value. They also lacked agricultural extension services in terms of information, technology, training, and free medicine. FHH farmers had no other options, so they had to get involved in agricultural marketing, whereas women farmers from male-headed households (MHH) were not visible at all in the market. At the same time, the distance to the market and the burden of carrying heavy products demobilized women to enter business or the market. This research illustrates the condition of women farmers with less access to information, training, resources, social networking and services compared to men. Women also

¹ Wearing a veil to cover her body and in some cases face so that men cannot see her body, as found in Islamic scriptures.

depend on men for obtaining and using technology and selling products, which directly challenge women's empowerment and income. The overall situation affects family nutrition due to lack of sufficient income.

Results and Conclusions

The extension services provided in Manikganj were dissatisfactory according to the farmers. Women's participation was low in public meetings and visits to government offices to seek help, and they had very limited knowledge on insects, pesticides, fertilizers, seeds, and technologies. Moreover, the social norms created barriers for women to go to markets and compelled them to perform double duties in the household and field. Women from FFHs had greater decision-making power and accessed capital via a loan system; notably, they were confident. As women lack direct participation in the market and are excluded from or uninterested in the Chamber of Commerce, various challenges remain unsolved regarding reducing gender-based constraints. Problems of distance and transportation are additional barriers women face when accessing extension services and the market. All these limitations influenced their income, which affected their dietary diversity and household nutrition, though they could eat three full meals per day. These women would benefit from training and services from the government, nongovernmental organizations (NGOs), and the Chamber of Commerce to support their participation in the market.

Gender-sensitive planning in government institutions and NGOs could:

- i. Help women deal with the lack of information in terms of insect, weather, capital and transportation;
- ii. Reduce gender gaps in market participation;
- iii. Reduce the vulnerability of women farmers due to social norms to reach extension services;
- iv. Build solidarity and support to promote women friendly technologies;
- v. Ensure access to proper nutrition and help them towards economic empowerment.

1 Introduction, Justification and Conceptual Framework

1.1 Introduction

INGENAES aims to assist Feed the Future missions to strengthen gender and nutrition integration within agricultural extension and advisory services (EAS). The Department of Women and Gender Studies at the University of Dhaka is conducting four research projects on various aspects of agricultural extension services as part of the project. This research intends to assess women's (in FHH) position as farmers and understand how EAS can improve to empower them economically to ensure household nutrition.

Agriculture is economically significant in any developing countries for both men and women. Globally women comprise – on average – 43 percent of the agricultural labour force (FAO, 2010a) and they contribute significantly to household food security and, to varying degrees, household income. The role of women's contributions in agriculture are often underestimated or overlooked (W. Jaim & Hossain, 2011), and increased involvement in farming can increase or diminish women's empowerment. In Bangladesh, women's participation in the agricultural workforce is more than 50 percent (FAO, 2010b). The higher rate of women's participation in agriculture in rural areas was due to the increase of FHH, where male members migrated to cities for work, had left the family for other reasons, or had died (Schutter, 2013). Women tend to receive lower income, less access to employment and assets, including land and capital, compared to men (Buvinic & Gupta, 1997). This reality makes FFHs especially more economically vulnerable. They are more prone to poverty due to lack of support, less access to capital and resources, lack of social networking, lack of property rights, and discriminatory social norms (Rogan, 2013). Women from FHH are left behind with a bulk of responsibilities to ensure food security and take care of family members, meaning they must get involved in agriculture; furthermore, society counts women's productivity as less than men due to social and cultural barriers (Doss, 2001; Doss & Morris, 2000). Social norms impose certain restrictions on women in commercial farming, which impacts their social mobility or identity as farmers (M. R. Ahmed, 1992; Kashem & Islam, 1999). However, in recent years, women's participation in agriculture has increased by 15 percent, but challenges still exist in terms of limited use, ownership, and control of productive physical and human capital (Sraboni, Malapit, Quisumbing, & Ahmed, 2014). M. A. Rahman, Mustafa, and Barman (2012) conducted research on women farmers, where they found that enough extension and training support would result in increased levels of fish production. Their research correlates with this study as they have focused on how lack of awareness, technologies, and capital impact production and sustainability levels. This research aims to shed light on these aspects to understand the scope of empowerment influencing FFH household nutrition.

The mandate of agricultural extension services is to help farmers become more skilled and productive through adopting better technologies and practices. The Department of Agricultural Extension (DAE), an organization of the Ministry of Agriculture, is responsible for providing extension services. However, they often overlook farmer needs and perspectives. Also, the budget for agricultural training and development is minimal, and fails to meet the demands of farmers (Uddin, Gao, & Mamun-Ur-Rashid, 2016). However, most of the studies did not focus on women farmers as a category, group of beneficiaries, or target groups. Further, many studies recognized the growing need of extension services for women farmers to increase their empowerment and nutrition level (M. R. Ahmed, 1992; Karim, 2006; Kashem & Islam, 1999; M. A. Rahman et al., 2012; Sheuli, 2013; Sraboni et al., 2014;

Yosef, Jones, Chakraborty, & Gillespie, 2015). Karim (2006) digs out the social notions of *Purdah*, which excludes women from local level irrigation systems because irrigation is seen as a man's job. The social construction of 'farmer' clearly indicates the leadership power regarding irrigation, fertilizer, seed or other information, which women generally lack because they are not allowed to obtain leading positions in rural societies. Living with such socio-cultural norms where men still control the assets and land (Schutter, 2013) posits women with less scope to adopt modern technologies (Chipande, 1987; Saito & Spurling, 1992). In addition, the motorized technologies are men-driven and expensive for poor women farmers. In Bangladesh, extension services are generally delivered to men rather than women farmers when men provide the services (Njuki, Kruger, & Starr, 2013). These factors keep women from benefitting from modern technological support that would increase productivity. New agricultural technological support has improved production in many areas, diminishing poverty and malnutrition among poor farmers, which is key to changing FFH economic capacity and family nutrition (S. M. A. Hossain, 1998).

In recent years, women have been acting as entrepreneurs, particularly in agriculture in Bangladesh, also known as the "feminization of agriculture" (M. Ahmed, 2004; M. Hossain & Jaim, 2011). However, women's contribution in agriculture is heavily underestimated as it is considered unpaid family work (Sheuli, 2013). In terms of women farmers' exposure to the market or value chain, they face various disadvantages such as lack of mobility, less access to training or market details, and lack of awareness about the commercial value chain. Women farmers lose their income and control as their products move from farm to market. As a whole, the amount women farmers produce, the quality of the food, and its market price affect the types, quantities, and nutritional values of food women farmers and their family member's intake in their regular diet (Carletto, Ruel, Winters, & Zezza, 2015). When women can reach the market with their production, the chances of getting a fair price increases. The income would increase their purchasing power to provide nutritious foods to the family members, develop dietary diversity, and increase income as indicators of women's empowerment (Yosef et al., 2015). Increased agricultural production has a direct impact on the nutrition of FHHs, as it would lead to economic empowerment providing economic wellbeing and economic decision-making power. This research will explore the strategies for gender-responsive agricultural extension service policies to increase women farmers' participation and involvement in agricultural marketing.

1.2 Justification

The Government of Bangladesh recognized the importance of agricultural extension services in 1996, establishing 11 principles to operate the system. The New Agricultural Extension Policy (NAEP) followed these principles to provide the services especially to disadvantaged groups (Agricultural Services Innovation and Reform Project, 2003). Despite these services, women, particularly smallholder farmers, remained unaware of the extension services, which directly affected poor FHHs involved in agriculture. Moghadam (2005) says that limited land ownership, lack of other productive assets, limited access to social services, and lack of market access all keep women farmers from improving their circumstances. McGuire and Popkin (1990) mention that cultural, economic, and biological limitations create barriers to women's health and productivity. Women from FHHs mostly have greater freedom in intra-household relations compared to women living with husbands. However, their intra-household freedom does not help them to obtain adequate resources given by any institutions because the society or community members restrict their mobility. The given cultural barriers such as *purdah*, women's inferior position to men, and men's right to dominate women

influence women farmers' economic wellbeing and family nutrition. Bangladesh, being a patriarchal Muslim country, prefers to systematically segregate women from the public sphere by imposing purdah, which consequently affects women's economic participation (M. R. Ahmed, 1992). In this situation, women farmers cannot reach extension services to produce more crops or sell it in a market at a fair price.

The introduction of extension services began in the 1980s through government and non-government development projects, providing farmers with new technologies, irrigation supports, training, diversified seeds, and fertilizers (Akteruzzaman & Jaim, 1999). Moreover, the Bangladesh Agricultural Development Corporation (BADC) launched modern agricultural facilities distributed among farmers with a subsidized price. The technological development increased the land productivity as irrigation and the use of fertilizers increased crop growth (Akteruzzaman & Jaim, 1999; Gisselquist, 2002). In addition, Bangladesh as a state is aware of longstanding poverty and malnutrition; thus, the National Agricultural Policy (NAP) 1999 was formed and executed to develop agricultural employment and practices in terms of crop diversification, fish, and livestock production (K. Rahman & Islam, 2014). The policy also directs to women's empowerment, increased food security and nutrition by recognizing women's agricultural contributions. As a result, many women are emerging as farmers in rural areas because working in fields is no longer as tabooed as it was 20 years ago. Moreover, women's overall nutritional situation can improve if their production and income increase (McGuire & Popkin, 1990). However, the existing agricultural extension services in Bangladesh have poor interactions with farmers at important times or providing sufficient support for the whole year (Haque, 2012). Haque also mentions that women farmers are not served by extension services because men are service providers and do not properly reach women. However, to increase women's productivity, infrastructural supports are necessary to make women independent farmers. At the same time, extension services should provide support to overcome gender inequalities associated with access to credit, labour, technology, and other information. Kelkar (2009) says that information or services get lost when passed on to women. Considering women as owners and farmers would initiate the process of targeting women for extension services. Thus, this research intends to find out the contributions and needs of the women farmers involved in agricultural crop production. EAS for technology adoption should be strengthened to benefit women farmers whether they are in a female- or male-headed household. It will increase the productivity and income of women farmers to be economically empowered and provide purchasing power to ensure nutrition and food security for the family members.

FFHs have been considered the most vulnerable groups due to poverty and lack of resources (Buvinic & Gupta, 1997). The constant gender discrimination, gender division of labour, and women's involvement in the informal labour force are linked with the term 'feminization of poverty' (Chant, 2003), which is applicable for the female headed farmer's situation. Moghadam (2005) mentions about three factors contributing to feminization of poverty: "(1) the growth of female-headed households, (2) intra-household inequalities and bias against women and girls, and (3) neoliberal economic policies, including structural adjustments and the post-socialist market transitions" (p. 1). As this research entails women farmers' economic status and pattern of growth, feminization of poverty has been described in a brief way to understand the associated factors related to poverty. In Bangladesh, women farmers fall prey to poverty and malnutrition due to socially constructed barriers. W. M. H. Jaim and Rahman (1988) found in their research that 50 percent of widows were hired as agricultural labourers as there were no earning members in the family. Considerably, there was a

prominent wage gap between men and women, as women were offered two meals and half a kilogram of rice, whereas men got two meals and cash. The discriminatory payment ensures poverty remains within FFHs. Inclusion of women farmers in markets is another dimension of global development policies, but it is not very applicable in the Bangladesh context. Due to cultural barriers, women tend to access markets on a small scale or not at all (Haque, 2012). IFAD (2002) shows in a report that women would not be able to participate in the market unless they gain land ownership, access to technical and financial assistance, and training. Women-owned businesses receive less support and services than those owned by men (The World Bank, 2007, 2008). Most women farmers choose to remain in local markets, which results in a low price of goods and excessive competition with men. They are not included in the agricultural value chain or commercial businesses because men own large-scale production businesses and control the market. It is imperative that women are able to integrate within the economy, as they are more likely to utilize their income and resources for the wellbeing of family and food security. This research proposes that women farmers get involved in Chamber of Commerce activities to increase communication in order to reach importers or buyers, which may lead them to a wider value chain and promote economic empowerment.

Malapit and Quisumbing (2015) argue that agriculture directly contributes to women's empowerment and nutritional status that they underscore with the Women's Empowerment in Agriculture Index (WEAI) model, where women's empowerment has been measured within five indicators of empowerment: agricultural production, access to and control over productive resources, control over the use of income, leadership in the community, and time allocation. Carletto et al. (2015) explain that agriculture may affect nutrition through food prices, income from agriculture, consumption of own production, and women's social status. These things directly connect to women's nutrition and food security as improved economic empowerment provides them with more opportunities to consume more nutritious food, regardless of their gender. Patalagsa, Schreinemachers, Begum, and Begum (2015) show in their study that women's participation in small scale gardening also ensures women's empowerment and gives women decision-making power over food, nutrition, and cash income. They also argue that society recognizes trained women farmers for their skills, and even men start to appreciate women's contribution in economic development, but this sheds no light on how women reach the market and sell their products. Women farmers also need to be involved in the market sector to accelerate economic development and break social prejudices. Agricultural income would help farmers to ensure dietary diversity and nutritious food for the family members, as half of the people of Bangladesh rely on agricultural income, of which two-thirds are women (Yosef et al., 2015). Ruel and Alderman (2013) propose nutrition sensitive services to enhance food security and dietary diversity among poor people and foster women's empowerment through agriculture, income and nutrition. As a whole, agriculture and nutrition correlate in a diverse way as an indicator of women's economic empowerment, which can bring progress and change in highly biased societies.

To ensure women's empowerment, access to resources and control over production are vital (UNDP, 2008), thus, women farmers of FFHs should access resources to produce more crops and sell them at a good price. Women's economic empowerment indicates an increase in their capacity to change their economic position and achieve equality with men (Bhatla, Chakraborty, & Duvvury, 2006). In Bangladesh, women perform the farm activities in the homestead garden, do harvesting or post harvesting work, and crop storage. Women's enhanced role can bring economic as well as social empowerment of women producers, traders and workers (IFAD, 2014). It is also important to include men to encourage women's agricultural recognition and bring empowerment to secure nutrition and

wellbeing. This research intends to find out the potential to for strategies to improve agricultural extension services for women farmers and integrate in the market value chain to promote women's economic empowerment as well as improved nutrition.

1.3 Conceptual Framework

This research uses two sets of theories to analyse the pattern of extension services for women farmers, their achievements and challenges, and empowerment to secure nutrition at home. The Women's Empowerment in Agriculture Index (WEAI) and Theory of Change attempt to examine the level of extension services to secure empowerment, the changes achieved so far in terms of food security and nutrition, social acceptance and the strategies adopted to break social norms in reaching the market.

1.3.1 The Women's Empowerment in Agriculture Index

Kabeer (1999) defines empowerment as the increased ability of people to make choices. This framework is designed to measure the empowerment and agency of women in the agricultural sector, which has been used to prepare the strategy and underscore the condition of women's inclusion in the process of empowerment in agriculture. Empowerment can be termed as developing the ability of a person to decide and acquire the choice and rights has been denied to him or her (Kabeer, 2001). Developing agency is the core indicator of any forms of development – social, economic, and political. The Women's Empowerment in Agriculture Index (WEAI) is a survey-based tool designed to measure the empowerment, agency, and inclusion of women in the agricultural sector in an effort to identify ways to overcome those obstacles and constraints through interviewing men and women (Alkire et al., 2013). WEAI defines five areas to measure empowerment and tackle changes over time. It also helps to identify effects on gender equality in each of the five domains used to measure empowerment and the remaining gaps that hinder women's empowerment, especially in agriculture. These domains are used in this research to support the qualitative findings; do not focus on the statistical part of this framework. The domains are taken as ideas to measure the empowerment of women in agriculture.

Production: elaborates the sole or joint decision-making of women over production and autonomy over decisions regarding any agricultural activities:

1. **Resources:** concentrates on livestock ownership, access to resources, equipment, technologies, trainings, and credit
2. **Income:** describes the sole or joint control over the use of income and expenditures
3. **Leadership:** depicts concerns related to leadership in the community measured by membership of economic or social groups and comfort speaking in public
4. **Time:** concerns the time allocation for productive and domestic tasks and satisfaction with the time available for leisure activities (Alkire et al., 2013)

The resource domain initiates the control over assets that indicates women's decision-making power, drawing from the idea that access to property and capital give women a voice to decide. They can make decisions on how to use it and have control over income reflecting their own choices. Women's participation in the market will expand their control over income and build a social network. The leadership domain illustrates women's participation in social and economic spheres or groups and their capacity to mobilize themselves and others to develop women's potential and importance in families and societies. Time is a domain that looks upon women's double burden and increased pressure of household work and production. It advocates providing labour-saving technologies that

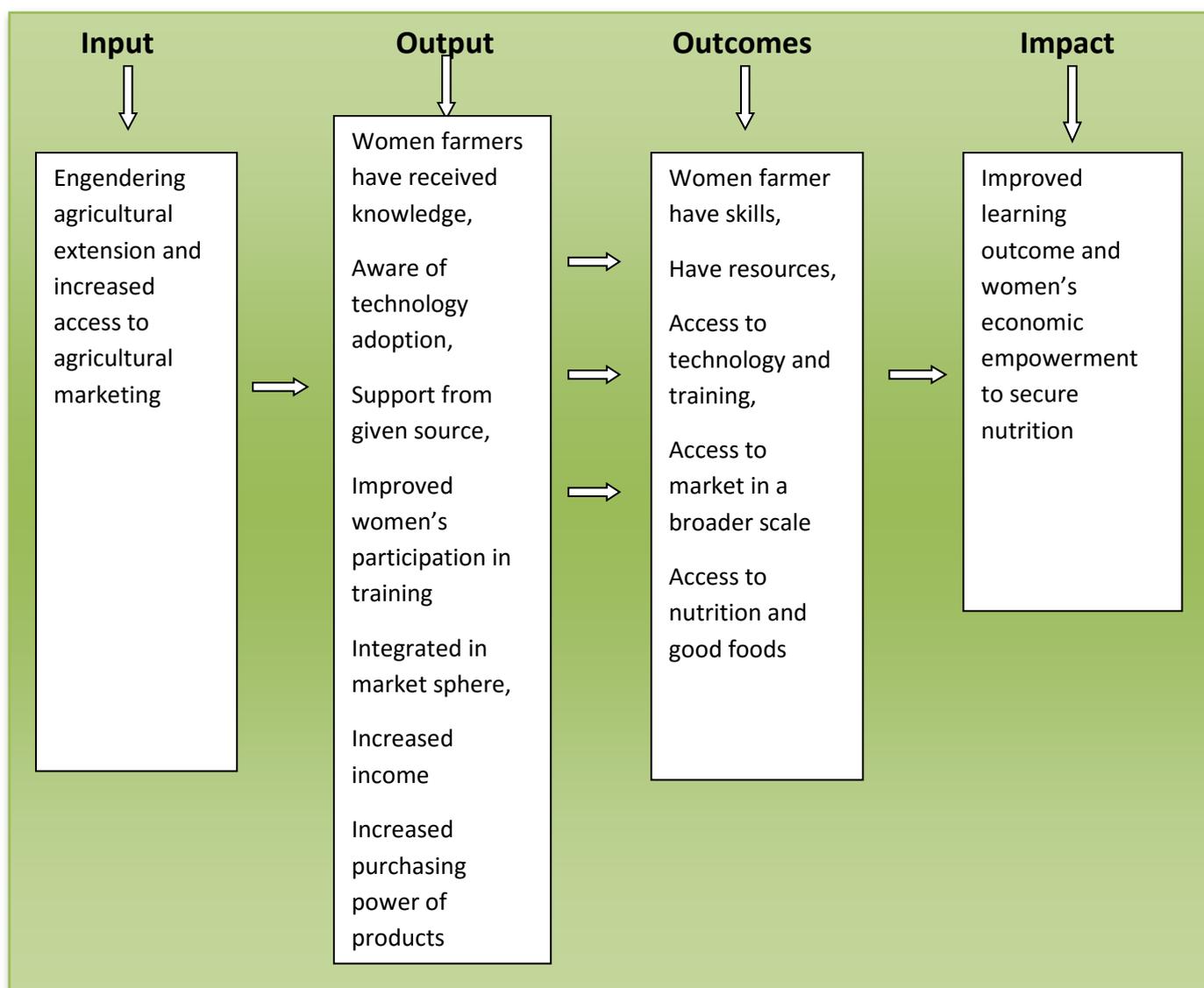
can reduce work burdens; however, this strategy proposes involving men in sharing the burden of production. Then, the woman can experience the freedom of leisure time and she can choose among activities to develop her position. All these dimensions are interlinked to improve the level of production.

1.3.2 Theory of Change

The Theory of Change is defined as the “Process of social change by making explicit the perception of the current situation; its underlying causes, the long-term change desired and the things that need adjustment for the change to happen” (Adekunle & Fatunbi, 2014, p. 1084). DFID (2012) proposed a model that helps to analyze the potential of extension services to women farmers.

The theory of change (Graphic 1) explains how improving women farmers’ access to extension services and markets for products can improve their productivity, nutrition, and developed economic situation especially in rural areas (Njuki et al., 2013). This theory helps us concentrate on how adoption of improved extension services and women farmers’ integration in market sectors can empower them economically and contribute in their nutritional status.

Graphic 1: Conceptual framework of Theory of Change



1.4 Objectives

This research intends to incorporate women in extension services and agricultural marketing to enhance their economic empowerment to secure nutrition. The objectives are:

1. To underscore agricultural extension services, women farmers' socio-economic situation, nutrition status and market experiences.
2. To recommend the gender responsive policy of agricultural extension services to the existing institutions working to increase services, technology adoption and integration in the market to impact nutritional status among women farmers.
3. To involve community people, especially men farmers, in the process of women's economic empowerment.

1.5 Questions

To meet the objective, we came up with a few research questions:

1. Do women farmers of FHHs receive agricultural extension services from government or non-government institutions and what are the challenges they face?
2. What are women farmers' nutrition conditions, how do they manage their nutrition needs through agricultural activities, and what are the challenges they face?
3. How can the institutional support include women farmers in the market value chain and influence their access to nutrition?
4. How can men be integrated to help women farmers access to extension services and the market?

2 Methodology

This chapter discusses the research methodology intended to understand women farmer's roles in agricultural production, access to extension services (especially technological support), family nutrition, and challenges they have been through so far. As the purpose of this study is to explore women's economic empowerment and its impact on nutrition, the whole study is qualitative in design. We used the WEAI and Theory of Change to analyze the field data.

We first went through the available information about the issues of women in agriculture, their situation, and the issues of extension services in Bangladesh in connection to women's empowerment and nutrition. After we had the necessary understanding of the conceptual issues and we reviewed existing relevant literature, the major work left was to go to the field and collect data that could provide a true picture about the respective research area.

2.1. Selection of the Study Areas

In order to collect data as per the research objectives of the study, we decided to work in Manikganj district where many women from FHHs were involved in farming. We worked in Manikganj Sadar Upazila, where large amounts of people, including women, farm professionally. Karmojibi Nari, a women's organization in Bangladesh, also helped us to reach the participants.

2.2. Selection of the Samples

We used purposive sampling as the participant collection method, with the participants selected with the help of the Karmojibi Nari organization. We chose the people to interview who had similar

experiences or lived in a similar background. Both men and women were selected to understand the picture of gender relations and provide a holistic picture of gendered concerns. Both women and men participants were from different age groups and social statuses.

2.3. Methods of Data Collection

The qualitative nature of the study helped to explore the reality of individuals of the respective area. This study followed in-depth interview and Focus Group Discussion (FGD) methods to collect the primary data from the field.

2.3.1 In-depth Interview Method

We focused on a small sample size to complete the research because we wanted to understand the participant’s lives, challenges, and changes so far. We conducted 14 in-depth interviews. Each interview took 70-90 minutes. A sample size of 10 is adequate enough for certain homogenous groups sampling (Sandelowski, 1995) and can elaborately reflect upon narrative analysis. The larger the sample size, the less likely the in-depth information can be used to understand experiences and perceptions. We are not concentrating on giving statistical information, so we wanted to keep the sample size small to dig out the concrete and descriptive information from within a similar social setting. We also wanted to understand the women farmers’ social challenges, market participation, nutrition status, and understanding of extension services that could come out in details due to a small number of participants. We interviewed nine women farmers from female-headed households to gather information on women farmers’ lives, access to services, nutrition and decision making power. It was very difficult to find women farmers only from female-headed households. We also talked to three staff members from the government livestock office, Karmojibi Nari, and BRAC to underscore the extent of extension services for women farmers and women’s situation as farmers. We interviewed two people from the Chamber of Commerce. Karmojibi Nari helped us reach these men.

2.3.2 Focus Group Discussion (FGD): One FGD was conducted with eight community men in a marketplace. The session lasted for more than one hour and we tried to capture their opinions and views about women farmers along with their notions of women’s market participation.

Table 1: Qualitative Sample Distribution

Techniques	Participants	Sample
In-depth interview	▪ Women Farmers	9
	▪ Staff members from government livestock office, Karmojibi Nari and BRAC	3
	▪ Chamber of Commerce	2
Total		14
Focus Group Discussion	▪ Community men	1
Total		15

2.4 Ethical Considerations

Maintaining research ethics is pivotal in conducting any study in a standard and bias-free manner. While collecting data from the field, ethical standards were highly maintained to ensure the confidentiality of the participants:

- Before conducting any of the in-depth interviews and FGD, the informed consent was collected from the participants.

- The FGDs and interviews were recorded only after receiving the permission from the participants.
- The research team informed the participants prior to the FGDs and interviews that they were free to leave the discussion or refuse to answer any question they found offensive or too sensitive.
- Confidentiality was maintained throughout the research to avoid potential harm or disadvantage to participants.
- The note keeper of the FGD and interviews read out the key findings to the participants after the completion of every FGD and interviews and were trained to keep the information just and appropriate.
- The researchers were careful about following an ethical code of conduct and showed respect to all that minimized the power gap.

3. Findings and Analysis

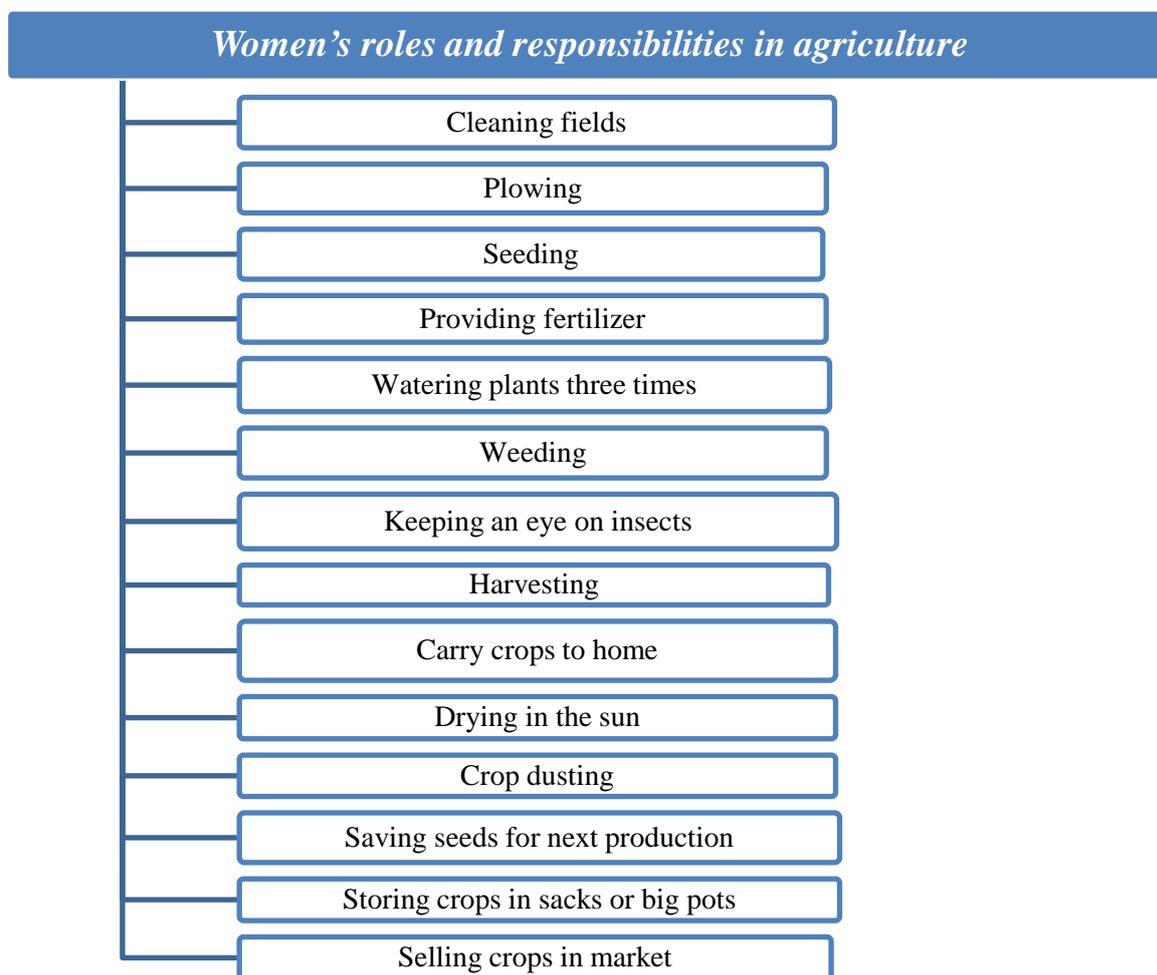
This chapter intends to outline the findings gathered from the field in terms of female-headed women farmers' agricultural activities, income, nutrition, participation in markets, and challenges faced in receiving agricultural extension services in Manikganj district.

3.1 Women's Roles and Responsibilities in Agriculture – Masculinity is no Longer a Requirement

Women are working as the half of total labour force in agricultural sectors, contributing to increased food security, poverty alleviation and sustainable development all over the world (Rashid & Gao, 2012). Generally, men perform the field-based activities related to production, including selling products, whereas women are involved in post threshing activities that can be done at home (Karim, 2006). However, irrespective of headship, women's role in agriculture is not limited to production, but also to maintenance. In FFHs, the woman's duties are more intensive, as they include selling crops in the market. Manikganj provided us with information regarding women's role in agriculture that seemed important in terms of female farmers. Though they tend to be invisible in the agricultural sector due to social norms and widespread under recognition of women's labour, women farmers were likely to contribute more to their tasks, from arranging the field to selling products. The tasks women did as part of their agricultural responsibilities were mostly the same across the sample. However, the women whose husbands lived far away (for jobs) provided another dimension of information in terms of accessing markets. Women were solely responsible for arranging the production and they hired both men and women labourers (*kamlā*). Many of them started working in the fields after getting married due to poverty or survival needs. We also found that recently most women in Manikganj district had been working as daily labourers in the agricultural sector like men. It seemed evident that agriculture was no longer a work that demanded masculine traits or manly physical strength. In addition, women of FFHs were at risk of food insecurity due to poverty, which motivated them to get involved in the agricultural sector, particularly as wage labourers (the details of food security and nutrition will be discussed in another section). Women as daily labourers received a lower wage than men; this was justified by most of the men and women because women generally got a four-to-five-hour break in the afternoon. However, women farmers and extension service providers believed that women had been more responsible towards their work and contributed more

in agricultural production compared to men. The tasks that women took on as the part of their agricultural production are below.

Graphic 2: Women’s role in agriculture



Source: From fieldwork May 2016.

In Bangladesh, crop-based agricultural production is not very common among women. This limits women’s identity as farmer and places socio-economic restrictions on them, such as lack of land ownership, lack of access to productivity-enhancing inputs like credit, fertilizer, improved seeds, and extension services, and the pressure to follow social and religious norms (Zaman, 2002) Manikganj was not an exception in terms of following the socio-cultural practices. One of the FFH female farmers, Joytun, said,

“A few years ago when I lost my husband, I had to manage my family alone. I’m not an educated person and I don’t have my own land to cultivate. Therefore, I started working as day labour in another’s land for cultivation to support my family. If I didn’t start working, my children had to starve for days. So why would I bother with people who are not going to feed me for a day or buy me lunch once? You know I had to face a lot of criticism especially from men that good women don’t work in the field and I should be more careful about purdah and all that. But I never gave up and now I have my own land and my own house all with my own

money. Now I've become an inspiration for many poor women of our village to work in the field."

However, women farmers made compost fertilizer by themselves, collected seeds from dealers, and arranged irrigation on time by paying money to the deep-tube well holder or shallow machine holder. In terms of owning land, women farmers were found to own less agricultural land, rather most of them leased land with a condition that crops would be shared equally. Three out of nine women farmers did not own any land, thus they were compelled to lease another's land and give half of their production to the landowner as written in the contract. One female farmer who did not own land raised concern about her roles and responsibilities in agriculture. She stated,

"I belong to a very poor family and my husband left me one year after marriage. I don't have any children and I came back to my mother's house. She was also alone and I was the only earning member in my family. I started working as day labour where I worked very hard but never got enough money to support my family. Eventually I tenanted land for a year and started working as sharecropper. I used to do all the work from harvesting to crop selling. I work in the field with men and sell my own crops at market. I also have a kitchen garden in the backyard of my house. After all these hardships, now I can say I've a better life to lead. My hardship is over now."

While sharing her story she became emotional while remembering the suffering she had to bear in the past. She continued,

"I never needed a male to support my family. There was time when I had to starve for days. But since I started working as farmer, started doing kitchen gardening, I don't need to buy food from the market; rather, I can sell and also have plenty of vegetables, fruits, and crops to support my family."

FFH farmers raised another concern about time management and their double burden. They had to work at home after returning from the field: cleaning, cooking, washing, and feeding the children. Moreover, they were solely responsible for feeding the livestock or cleaning sheds, as they could not afford domestic workers or their children were in school or lazy. M. R. Ahmed (1992) argues that women have to look after the livestock, milk the cows, polish the walls or floors, and clean the courtyard in addition to cooking. Eventually, all those tasks put immense pressure on their health. Another FFH farmer Champa shared,

"When I was a child, I started working in the field after my marriage. I was allowed to work in the field and also had to do all the household work at home being a daughter-in-law. There was time when I hardly got time to eat and after the daylong hard work when I went to have my meal, there was never enough for me. Nobody was there to listen to my pain. But now, I cultivate my own land and have my own kitchen garden, my cows and have plenty of food. My life has been totally changed from when I started supporting my family solely through agricultural work."

Apart from that huge work pressure and its impacts, they believed that women could do many tasks better than men because women are more dedicated to their work. Jaytun said,

“I can do two men’s work alone. No one can say to me that I work less than men, in fact they keep on saying that I am more strong and capable than any other man.”

Physical strength was mostly needed to carry heavy staffs or use heavy machines where women farmers had to rely on men, but some women get around this barrier. However, some of them also relied on male family members or male neighbours to sell products in markets. Young women farmers’ duties were mostly limited to agricultural production, as they used to skip going to markets due to the social norms. However, it may take a long time to experience a visible change if the extension services do not include the market as a gender-sensitive place. Consequently, their visibility in the agricultural sector also demonstrated a change in economy, their lives, and their process of empowerment.

3.2 Women's Access to Agricultural Services & Decision Making Power - a Visible Change So Far

Quisumbing and Maluccio (2003) mention that women’s increased access to and control over resources improve household food security and nutrition. This study has indicated that increasing women’s control over resources has positive effects on a number of important development outcomes. Therefore, their freedom to make their own decisions concerning farming, family nutrition, and household budget increased significantly in last few years. This study also indicates that increased income is interlinked with improved decision-making power to benefit the family as a whole. It is assumed that women have control over income in FFHs. However, women farmers were liable or liked to ask their sons before making a decision. If there were no male members in the household, women could make the decision on their own. Women’s direct or indirect labor in agriculture increased their decision-making power that resulted in household wellbeing. Women FFHs mostly decided where to farm, when to farm, how to farm, and what to farm. Most of them single-handedly performed everything from buying seeds and fertilizers to watering the plants. One of the participants of this study shared her story,

“Being a female headed household actually worked as a benefit for me. I’ve the freedom to decide where to work, when to work and how much money to spend. I never need to answer to any man. There are many women working in the field sometimes as day laborers or in their own field for cultivation. They don’t actually have any power to make their own decisions. Sometimes they have to face physical violence and can’t even say a word to their husbands.”

However, it was found from the interviews that women farmers had limited access to productive assets, though they were barely behind when it was the time to produce crops. Some of the informants relied on their sons to buy seeds from the market, or they depended on neighbors to avoid going to the market to buy seeds and fertilizers. We found that the more helpless and poor a woman was, the more likely she was to break traditional social expectations and participate equally in the field and markets. The aged women were stronger than the young ones when ignoring what community people said to them. Most importantly, poverty and need pushed them to overlook the social expectations that were working as barriers.

These women farmers were interested in accessing agricultural services. They were not happy with the agricultural services currently available. Some of them, mostly the older ones, went to the government agricultural offices and did not get any support. In offices, the services were mostly given

to men, whereas women farmers were highly neglected. In addition, men received a little training on crop cultivation while women farmers were excluded. According to the women farmers, the government staff members were less helpful to them, when compared to how helpful they were to men. They informed us that the government prohibited their participation among the male participants. In Bangladesh's patriarchal society, this situation is very common; women have very limited mobility, freedom of choice, and decision-making power. However, the story of FFHs has produced another dimension that shows the level of women's increased power and income, rather than their vulnerabilities or economic crisis that are supposed to increase with the absence of men. This study does not intend to spread the message of how much women can live a free and better life without men, rather it discusses the outcome of women's increased access to the outside world and decisions that have reduced their economic suffering. Also, it is undeniable that women could exercise more freedom and power without men being in charge of households. These women farmers had been making their own decisions quite efficiently. A social worker of Karmojibi Nari shared his concern, saying,

“Over the years, women's role in agriculture has changed. Now their work is more visible ever than before. They are also working with men in field for supporting their families. As they earn their livelihood, they are not bound to obey another's rule, rather they are empowered enough to make their own moves and make their own decisions. That is an achievement towards women's empowerment I think. That would not be possible without their involvement in agricultural work so far.”

Kabeer (1999, p. 437) explains, “empowerment...refers to the process by which those who have been denied the ability to make strategic life choices acquire such ability.” To achieve empowerment, agency is an important component that means “bargaining and negotiation, deception and manipulation, subversion and resistance” (Kabeer, 1999, p. 438). The women in Manikganj district were also denied their equal work facilities and rights in the past. However, these women have developed agency to make decisions, to fight against criticism, and to take risks in life by challenging the social norms and heading towards a hunger-free life.

3.3 Women's Participation in Markets - Progress Still Wrapped in Traditional Thinking

In Bangladesh, traditionally women have been playing a major role in agriculture, especially in home-based agricultural activities or post-harvest work. Men usually perform the crop-based production in most of the areas of Bangladesh. The division of labour also exists in accessing the market. Garcia, Nyberg, and Saadat (2006) published a report stating that women are not included in the market value chain or commercial business as mostly men, being the head of the households, control the market activities. If women participate in the market, they tend to remain in local markets due to lack of mobility and security. Thus, they sell their products in local markets where the price is lower than in city markets and controlled by men (Miller and Jones, 2010).

Though women's participation in agriculture was quite high in Manikganj district, socio-cultural norms prevailed strongly to restrict women's participation in the public sphere, especially for the young ones. The widespread concern to women's integration in market is mostly due to men's control over income (Kristjanson et al., 2014). The situation was different in FFHs as mostly women had control over

income; however, if they depended on men from the neighbourhood or relatives, they risked losing the good price or overall income. One of the FHH participants added,

“Though I work in field, it doesn’t look good when a woman goes to market to sell her products. As I have no male family members, I have to depend on neighbours to sell my products. They are helpful enough. If I can’t find anyone to sell my crops in market, especially the fresh vegetables, I have no other option left except letting them rot.”

The scenario is quite different in another village of Manikganj named *Noyapara* where FFHs carried their vegetables, seasonal crops, and fruits to market and sold them on their own. Jaytun is one of these women. She shared that,

“I grow lots of vegetables in my kitchen garden and every morning sell those in local village market. At first, I had to face many hurdles, but over time, people became aware that both men and women can work. The number has also increased over years. Now there are many women who are selling their own products at village market.”

Another woman named Rahela said that she could carry 30 kg on her head and went to market. At the beginning, people could not tolerate her in men’s domain and did not allow her to sit. She did not leave her place. Men said that women tended to show their strength in the market. In reply, she said, “Aren’t we human beings?” People also tried to deceive them by offering a low price. When some women from FHHs started to sell their products, they felt shy. Women were participating in the market somewhere but the market was not providing them equal opportunities. The government extension workers did not support women’s market participation either. In answering the question of what government has done so far for women’s participation in market, he replied

“We don’t teach women to come to market and sell things. It is okay that they are actively involved in agriculture as it develops their economic situation. But we don’t persuade anything that goes against traditional norms and can create social disorder.”

He also mentioned that they provided advice on farming to both men and women and their union level workers visited the farmer’s house weekly. The extension officer thought women’s involvement in the field was okay enough but not in the market. Likewise, the management committee of Manikganj Chamber of Commerce did not include the agenda of women’s market participation in their activities. One member of that committee said there were almost 500 men in the committee, whereas the number of women was less than 10. He concentrated on the importance of giving women special care in market and said that more women needed to be part of the committee. He believed the problem relied in the management committee itself, as they did not want to bring women to market as sellers. He raised his concern, saying,

“I think female farmers’ participation has risen but not very high. Still they depend on their male counterpart to sell the product and the money remains in men’s hands. Also, we need to incorporate more women in the committee to motivate other women farmers by initiating area-wide campaigns.”

He thought if women sellers from different areas became a part of the committee, other women sellers would reap some benefits in terms of space, security, and negotiation with traders. He added,

“Government has no initiatives or steps to monitor women’s participation to ensure better access in market. Right now, there are no future steps to do that either. Women participate at local markets, but in mainstream business, not a single woman as a producer can be mentioned. As women’s labour is cheap, they are used in food production chain but not in market value chain.”

One more interesting fact came out in the FGD conducted with community men. These men were divided in two groups: the supporting group and the non-supporting group. The young men were really supportive about women’s participation in the market as it could encourage women farmers to remain farmers. One man said, “We respect these women farmers as they have changed their economic situation and improved their family condition. They are not doing anything illegal, rather earning their livelihood”. Other young men also supported him. The older men were a bit concerned about social norms and what the impact would be if women started to work in public. One older man said, “My wife would not obey me if she starts to participate in market. She will forget that she is my wife and it will create problem in our family. Moreover, men are here to go to market. If there is no man as you have mentioned, they can go to the market.” The old men were not absolutely restricting women’s market participation but did not really support it.

Women farmers also complained about the distance from their locality to market affecting their participation. Mostly, the crops were heavy to carry. Transportation is expensive compared to their income, so most of them preferred to sell crops from the field at a low price. However, integrating women into the market value chain did not seem easy as women were almost invisible in the market apart from few women from FFHs and some women milk sellers. This research concentrates on women farmers involved in crop cultivation, so we did not collect any information on milk sellers. The findings of this research demonstrate a huge gap in women’s market participation, especially absent are women coming from male-dominated families or of young age. The old women of FFHs who sold their products in the market did not allow their daughters or daughters-in-law to go to market as sellers. However, breaking social norms would not be possible for them if life had not placed them with hunger, difficulty, and poverty (W. M. H. Jaim & Rahman, 1988).

3.4 Nutrition Versus Food Security - Change is far away

Women of poor households are at risk of food insecurity and malnutrition due to various socio-cultural and economic factors. Women tend to eat less than men do during food crises, preferring to feed their husband and children a larger portion, and lack economic equal benefits due to low wages and lack of access to work and information. A UNICEF (2012) study shows that in Bangladesh malnutrition is mainly caused due to the inability to purchase ample food, poor maternal and child care practices, and lack of macronutrients in food such as Vitamin A, Iron, Calcium, protein and others. In many countries, malnutrition is a problem found mostly in women and transferred to children from them. These children grow up with physical weaknesses, a high risk to disease and inability to be resistant to disease (UNICEF, 2010). The problem of food security has come a far way in last few years. Sraboni et al. (2014) argues that women’s increased control over agricultural resources and income contributes in changing household food allocation and nutrition level. However, women of FFHs informed that

they had gone through a very hard time. They did not have access to three meals per day. Most of them worked on an empty stomach because they had to feed their children. Rahela mentioned,

“I worked in other fields and could not earn much. I also worked in the household to get two meals a day. I used to feed that to my children and ate a small portion. I used to tighten my petticoat² strongly and drank a lot of water, so that I would not feel hungry. I know the suffering of hunger. You can’t imagine how it feels. Now I can have three meals a day and I find myself the luckiest one.”

Like Rahela, most of the women had gone through extreme hunger in the past that they considered themselves lucky at that moment. They had faced criticism but did not leave the field, as they believed ‘people will not feed us, so no need to bother with what they say’. The power and pleasure were visible in their eyes; the eyes that had shed uncounted tears, had lowered down due to shame once, had ignored intimidation and kept dreaming. This research came out with an amazing finding that beating hunger could be a source of irresistible confidence, power, and courage to break social norms.

Now, coming to the point of nutrition, we found an overall poor situation in FHH families. From the participants we could identify changes in food allocation due to women’s increased income, share of assets, and farmland. As the culture of Bangladesh influenced the household food consumption based on gender, the finding was also the same in Manikganj. Mostly in rural areas, the tradition is as such: men eat first, children second, and women eat last. Men do the shopping and women unconditionally prepare the food. Even when working in the fields, they cannot escape from cooking, cleaning, washing, or taking care of family members. However, in terms of consuming food, especially nutritious food, women of Manikganj were behind. In FHHs, women mostly sacrificed their portion of good food for their children or grandchildren. They did not get any professional consultation or training of how to select nutritious food, how to prepare them, how to grow them, and how to consume them. Most of them had heard the term ‘nutrition’ from television, but they were not aware of what it was. However, almost all of them said it was hard for them to obtain nutritious food. Rahela said,

“I think the vegetable I eat daily is enough to fulfil my nutritional need. We are poor people. How can we find fish and meat every day! Fresh vegetable can be enough for us. Also, I generally feed my grandchildren milk, meat and fish from my portion as he likes it the most. How can you eat when they are asking for more? All women do the same in our village. They eat less and feed their children or grandchildren.”

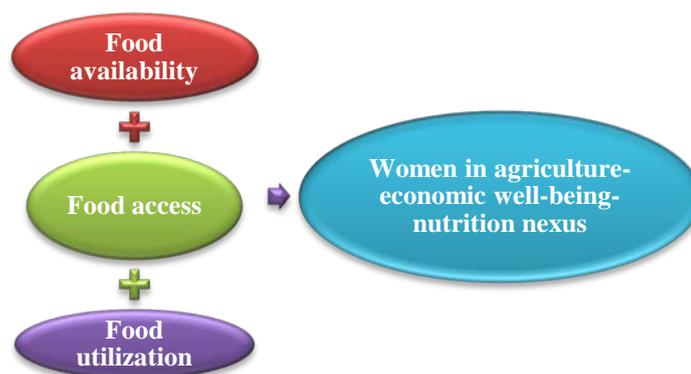
These women understood that they needed more nutritious foods, not just rice and spinach. They also had a regular supply of vegetables even though they generally kept the small portion or the defected ones for their own consumption. Most of the families have fish once or twice a day in a week and meat once in a month. Few families could have eggs more often than fish and meat, and also had milk once or twice per month. All of the women farmers informed us that they did not provide different amounts of food based on the gender of their children. Over this period, food intake almost stayed the same in these families, though that was not enough in terms of meeting daily nutrition levels. Homestead gardening also helped them to meet the need of daily vegetable consumption and contributed to improve their nutrition. The issue of food security was in a better state compared to nutrition level.

² Also known as an underskirt. It is worn beneath the sharee (a traditional dress) in the Indian Subcontinent.

van den Bold et al. (2015) talk about other factors that can affect household nutrition levels such as “poor sanitation, agriculture-related diseases, women’s disempowerment, and inadequate quality of health services”(p. 232). They also mention nutrition-sensitive agricultural interventions including the “enabling environment” to consider the socio-cultural, economic, political, institutional, and policy contexts that will lead towards nutrition security. They criticise the policy discourse and agricultural extension services because of the poor service, lack of implementation, and lack of coordination and accountability. However, this research does not look into the other factors or nutrition-sensitive agriculture; rather it intends to focus on extension services for economic empowerment that can secure nutrition at a large scale. Consequently, this research supports the idea of nutrition-sensitive agriculture as an important factor to secure dietary diversity, food security and better nutrition if properly taken into consideration. There is need for further research on women’s empowerment, barriers, extent of services, and dietary diversity.

In accordance, the following nexus can explain how women’s improved production and income can directly contribute to family nutrition.

Graphic 3: women’s economic empowerment and food security through agricultural work³



Though these women farmers could not ensure high value foods for the family members, they contributed a lot for the food security of their family. Though food security ensured their three meals per day, it could not ensure better nutrition. Any economic strategies for agriculture and rural employment linked to poverty alleviation and food security work to ensure freedom from hunger. All the participants reported that they have prioritized spending the increased income from their activities on ensuring household food security. The linkages between women’s empowerment and

³ Here **Food availability means** having sufficient quantities of food from household production, other domestic output, commercial imports, or food assistance. **Food access means having** adequate resources to obtain appropriate food for a nutritious diet, which depends on available income, distribution of income in the household, and food prices. **Food utilization means** proper biological use of food, requiring a diet with sufficient energy and essential nutrients; potable water and adequate sanitation; and knowledge of food storage, processing, basic nutrition, and child care and illness management (USAID 1992).

food security could not be measured quantitatively, but could address the impact of income on food intake and nutrition.

Extension Services and Impact on Economic Wellbeing:

Bangladesh, being a poor nation, was under enormous pressure to meet food demands in the 1960s due to the rapid population expansion. At that time, agriculture became one of the major sectors introduced with agro-based technologies such as machines, motorized tools, and agro-based chemicals that would increase production and productivity (Kashem & Islam, 1999). This was the starting point of agricultural extension services related to training, technology, information, and material provided to farmers. Kashem and Islam (1999) mention that the Bangladesh Rural Development Board (BRDB) initiated various training programs that included men and women. The board provided women with intensive training on household activities and farm activities – mainly within the homestead, considering the socio-cultural barriers – and it provided men training in field-based operations. This divide did not meet the needs of women farmers, especially those directly involved in fieldwork, as the board's services were not so relevant. Consequently, women farmers of Manikganj were far from services needed for successful farming enterprises. However, they have also transformed their economic situation, which could be termed as an indicator of women's economic empowerment. Economic empowerment indicates an increase in their capacity to change their economic position for themselves and achieve equality between men and women (Bhatla et al., 2006). Women farmers went through different experiences regarding extension services for information, free medicine and seeds, technology, and cash or loans needed for production. They mainly used the knowledge they received from fathers or ancestors. Reaching extension services for other information was not easy for these women, especially when the services came from government institutions.

In Bangladesh, the inequality between men and women has hindered women's development, which affects women's engagement in agricultural extension services (Begum, 2015). They were dissatisfied with the lack of information or knowledge dissemination. The women never received any technical training on agricultural production. They were unaware of how to minimize the difficulties caused by weather, infections caused by insects, or how to preserve seeds. Only three of them received training on farming, though the training left out important information such as seed preservation and insect killing. Instead, they bought spray from the market to kill the insects on their own, which resulted in crop losses. However, government service providers' advice was helpful to the farmers to reduce the loss. The government service provider visited their home once or twice per month, but they could not come when the farmers needed them the most. Another problem was the distance, as most of the trainings were held in cities or far away from Manikganj. Unfortunately, many women could not join those due to their motherly role and production work. Time management and distance also acted as barriers to receiving training support.

Capital was another important part of the extension services; therefore, many NGOs were providing loans to the farmers, especially women. BRAC, ASA (Association for Social Advancement), and Gana Kalyan Trust were giving loans to women farmers to buy seeds, technological support, process irrigation and lease land. At the beginning, the loans were USD 65-130 (5,000-10,000 taka). If they returned the amount on time with interest, they could borrow up to USD 1,000. The only drawback was the interest that women had to pay at any cost each month; if they could not, they faced social

humiliation or had to sell their personal property to return the loan. However, the women we talked to were happy with the loan providing systems. Monjila said,

“The money is really important for me. I would never be able to manage such an amount by myself. The best thing is that we get a big amount at once and can return slowly.”

Some of them took out a loan to buy technological instruments such as a shallow machine, other water supplying machines, a threshing machine, and an insect killer machine, but never received any machine from any institution. Rahela Begum said,

“I bought a water supplying machine and borrowed a threshing machine to make my work easy. I have to use a handle for the watering machine and sometimes I get hurt. I talk to my machine and tell it not to make me work harder on it. It listens to me most of the time.”

Therefore, she asked for a harvesting machine that would automatically harvest only grain from the stalks, so that she could send it directly to the mill. They all thought that a machine to separate the husk or chaffs from rice would reduce their workload. Generally in rural areas, paddy is husked by *Kula* and *Dala* made by bamboo that requires constant hand movement with crops for many hours. In addition, they needed a tractor and water-supplying machines that could save time, increase production, and increase their wellbeing. The progress would eventually lead them to economic empowerment and further development.

Another important finding came out throughout the research about the role of Karmojibi Nari, the organization that helped us to meet the informants. This organization was neither giving training directly on farming, nor providing loans. They were working to motivate farmers to unite, demand their rights, and form groups to raise awareness. They informed the farmers about the laws, government policy and demanded their recognition as farmers to get national facilities. They also organized monthly meetings with women farmers to voice their rights and work for equality. They provided courage for women labourers to demand equal wages. Women had a platform to share their experiences and demands and could teach each other about agriculture. Most women farmers also wanted financial help from this organization, though Karmojibi Nari could not provide it due to their financial limitations. One staff member from this organization said,

“Women farmers are very aware nowadays about their rights. We cannot provide loans but we unite women farmers to give them strength to get equality in the agricultural sector.”

The extension services were definitely not enough, even though they did contribute information, capital, and medicine. The women had homes, food to eat, and opinions to make decisions regarding farming. In short, these women achieved economic empowerment to a certain extent, but they remained behind in terms of economic wellbeing and nutrition that could improve with gender-sensitive extension services.

It is quite visible in their discussion that when women started working as sharecroppers with men, they have improved their lives in many ways. They were able to generate information on their own without the help of male family members. They went to the government Zila agricultural office, local

offices, Karmojibi Nari and asked for their help whenever needed. However, there existed the conflict between their double burden at home and field, lack of access to modern information or technology, and leadership opportunities. FFHs were constantly battling against their circumstances through hard work, but in the process, they became economically empowered.

3.6 Challenges So Far

Agriculture has been the most important sector for women's livelihoods with the percentage of women's involvement at 64.84 percent, whereas the percentage for men is 40.18 percent (M. Hossain & Bayes, 2010). Women farmers have been working as the main food producers in developing countries, but they are considered one of the most vulnerable groups in terms of economic status. Social customs like purdah and discriminatory cultural perspectives have led to social and economic exclusion of women (Kashem & Islam, 1999). In Manikganj, society, especially men, criticized women farmers for a long time. They were treated as '*kharap mahila*' (bad woman) 20 years ago, when they began working in the field or went to the agricultural office seeking help. They also were highly criticized for going to the market to sell crops. They used to hear that women farmers had no shame or social prestige and were considered a social threat to other women's submissiveness or shy nature. They were silent at the beginning and felt ashamed of their situation. Women farmers even worked the whole day in the field without having lunch because men farmers were present. They felt awkward eating in front of men when they first started farming. In the field, there was no latrine for women, which caused health difficulties and inconvenience. However, time passed by and they became strong, answering back to social criticisms. Jaytun said,

"It's my hunger, my sufferings. Why do I need to wait for someone else's approval? Am I doing a crime? Working to support my family and children can never be a crime. I don't remain silent if someone says anything. I would go to that person's house and call a social meeting against him if he says so. I don't care about anybody's opinion and don't feel ashamed of going to market. Earlier [in my life], I was shy but now no one can swindle me with low price. I am no less than a man farmer, in fact, I am better as I also work at home. There is no other way than hard work."

Women were neither socially recognized nor did they receive support when in need. They hardly went to the government offices in search of help. In addition, men farmers were more valued as farmers. Staff members neglected women farmers and they were excluded from government-provided trainings, free medicine or other services most often because of their gender. However, not all the staff members ignored them; some helped them. There were no women service providers that hindered women farmer opportunities, according to them. Conversely, men farmers could get a daily labourer job easily with higher payments when compared to women. Women were paid almost half of the men's wage considering that women could take three hours to do household work during the day. The pregnant women were at risk of food insecurity because they could not work at that time. Women farmers also complained about the unsteady or cheap price of crops or vegetables in the market.

Technology was one of the most important factors limiting women's production. All of the machines were either heavy or difficult to operate for the women. For ploughing the land, men could use the traditional tiller, whereas women had to hire tractor or labourer. They had to take a loan out to hire a

tractor and to water the crops. They also had to buy water from deep tube well or had to use a hand pump that seemed difficult to use. In terms of harvesting, using the machine cost money and many women could not use it. Women were feeling the need for a better water pump, insect killer machine, power tiller, tractor, weed clearing machine, harvesting machine, and husking machine.

Throughout the in-depth discussions with FHH farmers, community men and officials from the chamber of commerce, BRAC, Karmojibi Nari and district agricultural office, this study found some major misconceptions that are hampering female farmer's economic well-being, thus lowering their nutritional stability. These are:

1. The common presumption of extension services that knowledge transmitted to men automatically trickles down to women and benefits the latter equally. Even in FHHs, they do not consider women farmers as 'farmers' or 'breadwinners'. Women are considered to have less capacity than men do; they are less prioritized in training programs or the market value chain.
2. A second factor relates to women's time poverty. Because of the many and conflicting demands on their time, attendance is difficult at meetings organized by agricultural advisors and held outside the home or during hours when women must tend to children and other inflexible duties. This difficulty also applies to the need for travel and lengthy periods of attendance.
3. The poor price of produced crops also remains a great challenge for FHH farmers. When the price is low, their earning is low; eventually, they are limiting their budget for both food quantity (caloric intake) and quality (dietary diversity). It has adverse impacts on women's health as they cut off their own portion to feed others.
4. Another factor is the institutional participation by women within community organizations that is different from that of men. Women generally join women's self-help groups or women's groups, whereas men tend to be members of production groups. Moreover, they are not visible in leadership positions, nor in political meetings, which works as a backdrop to create a platform to demand own needs.

However, in comparison with the past few decades, the changes were visible as FHH farmers were more recently improving economically.

3.7 Sowing Seeds of Empowerment: How much has Economic Wellbeing Ensured Nutrition?

This study focused on FHHs confronted with few changes in gender roles, gender relations, and challenges associated with being recognized as a farmer, receiving extension services, and accessing the market. M. R. Ahmed (1992) argues that women in Bangladesh are ignored as an economic resource and their roles in "production are controlled by sexual division of labour, access to land or other production resources (livestock and tools), the crop types and crop growth (technology and access to labour), and women's control over what is produced (marketing and distribution)" (p. 385). The exclusion from such areas is due to purdah that influences gender roles, women's behavior and creates public/private dichotomy restricting women's public life tasks (Karim, 2006). The division weakens women's contributions to the economy as a category, or if does not, hardly recognizes women's input and hard work. To understand the various dimensions associated with agriculture, this research explores the significance of women's involvement in agriculture specifically when a woman is the head of the household. The findings have covered different aspects of the life of a woman farmer

and their economic empowerment. This study also attempts to understand the impact of extension services and market access to help women improve economically and contribute to family nutrition, and through that process, we discovered their emotions, demands, experiences, and struggles they have faced so far.

Women remain unrecognized in agriculture in terms of their roles (Malapit & Quisumbing, 2015), and women have been neglected in agriculture after the dominant Western notion of productivity oriented development planning. Men were targeted for inventing new technologies, whereas women were side-lined from the farming system as traditional roles of women were not valued in development programs (Razavi & Miller, 1995). They also mentioned that, according to Boserup, in Africa, men were introduced to modern farming and women were introduced to traditional farming methods that reduced women's income, status, and power compared to men. In Bangladesh, the modern agricultural system has a long a way to go, and women remain mostly invisible in as professional farmers. The technologies found in Manikganj were made for men - heavy, difficult to operate, or require physical strength and control. Women farmers could hardly operate those and depended on men's support. Moreover, the assistance regarding technology did not come from any extension service providing institutions. Due to the lack of technological support, farmers needed more time, effort, physical work, and psychological support in the whole process of production. Women were more vulnerable as farmers due to less mobility and networking with people who could provide help.

The international policies do appreciate women's agricultural contribution and CEDAW (the Convention on the Elimination of All Forms of Discrimination against Women, 1979) promoted "women's right to receive training, education and extension services, as well as equal access to credit and marketing facilities, and equal treatment in agrarian reform" (Razavi & Miller, 1995, p. 6). However, in reality women always lack equal opportunities in terms of training, technology, capital, ownership of land and access to market. This study indicates the importance of rethinking the policies and programs to specifically concentrate on three domains that contribute most to disempowerment: weak leadership in the community, lack of access and control over resources and income, and less market participation. The Women's Empowerment in Agriculture Index (WEAI) theory can be used to analyze women's capabilities to make decisions about production that utilize resources to ensure income, their involvement in community leadership, and their management of a double burden. It was found that a woman could be more productive when making her own decision. We have found in our research that women did not hold any strong positions in the Chamber of Commerce or agricultural service-related institutions. It also affected women's public sphere participation and women's discomfort with speaking in public or demanding something from an organization. However, with the help of NGOs extension services, they also formed small groups to share information and became psychologically strong to protest against social criticism. The older women were mostly at the forefront as they have suffered more have walked a longer life.

In response to the lack of control over resources or income, the findings from FHHs would differ from the findings from MHH. The participants of this research informed us that they had more control over their income compared to the women who had husbands. However, they also faced different struggles such as social criticism, financial crisis, exclusion from extension services, and lack of technological support. Moreover, community men challenged their market participation on an extreme scale. These women came to the market because they did not have a man to help them. In fact, they did not want

their daughters-in-laws or daughters to work in the field or go to the market unless needed as it might disgrace their honor. Hardships were responsible for pushing women to work in the field and market, which is similar to the findings of the study of Karim (2006). Unfortunately, they had to manage both household and outside work and could not rest at all. They were thankful to agriculture that secured their food as well as nutrition to some extent and also gave them economic independency to build a home, buy livestock, and continue with farming. Economic solvency partially empowered them by giving them the choice to make their own decisions; however, they still had to rely on loans and lacked the desired economic support to advance production with technology. Women's increased participation in markets could develop their economic condition in a constructive way.

The theory of change helps us understand how women farmers' access to technical assistance and markets could increase their productivity and nutrition, and improve their economic situation, especially in rural areas (Njuki et al., 2013). This theory also helps us concentrate on how technology adoption and women farmers' integration in market sectors can empower them economically and gradually contribute to their nutritional status. Therefore, this theory also demonstrates whether equality between men and women has progressed at all through women's participation in agriculture. This research shows that women farmers have developed strong self-confidence and positively changed their family food security and economy. The change is not only visible in fieldwork participation, but also in being economically capable and free to be in charge of families. This study shows that women have accessed to information through their social networking and extension services - though at a poor level. However, their lack of information or lack of access to technology and markets could not stop them from making their own decisions or controlling their own money. It can be said that women who can make decisions are in a better position to manage agricultural production, food security, and nutritional needs.

Community men brought up a concern about women's participation in agriculture for economic wellbeing and food security during the focus group discussion. They believed that men's involvement in achieving social transformation regarding gender equality would be more effective with less social resistance. Men's exposure to women's economic contribution will convince them to view women's empowerment as an opportunity, not a threat. Recognizing men's role in women's empowerment would help to redistribute household work and facilitate women-friendly environments. This would help the women of MHHs to avoid conflicts regarding "neglecting" traditional duties and encourage men to help women. With the change of cultural dimensions, levels of extension services, and invention of women-friendly agricultural technologies, FFH farmers can move forward as farmers and the "manager" of the household for ensuring food security and nutrition as well as economic empowerment.

4 Conclusions and Recommendations

This chapter discusses the findings of the field information and the scope of work. In Manikganj, patriarchal gender norms and roles have often created different roles and standards between men and women. These differences have led to hierarchical power relations that limit women's access to power or resources and restrain women's social and economic participation. Women farmers of Manikganj have changed their lives through achieving courage, determination, and economic independence. However, their stories do not sound like fairy tales as the challenges are not over yet. They are still at the mercy of social criticism, ignored as farmers, cannot afford nutritious food every day, depend on men for technology adoption, and do not feel comfortable accessing the market if

they are young. Empirical findings illustrate that the contributions of women farmers have not drastically changed their status in society. In this case, farmers had to take care of all expenses related to production according to the contract.

4.1 Recommendations

From the findings of the study, we note certain issues that must be included in order to make positive social reforms and extend services to promote women's empowerment through agriculture. This study specifically highlights making recommendations for women farmers from FHHs, but it can apply more generally.

Appointment of women service providers: It is an important concern to appoint women as service providers. There were no women service providers that women farmers can reach or to facilitate trainings for women. Government offices should appoint women staff members along with other NGOs who can also visit the women farmers weekly to understand their needs and challenges as women are generally more open to women when discussing issues. Women service providers can make a bridge between women farmers, community people, and the Chamber of Commerce.

Women's integration in Chamber of Commerce: Women at a large-scale can be included in the Chamber of Commerce committee to facilitate women's participation in the market. Women of this committee would transfer information to women farmers about the market price of products, create separate space for women in the market, receive women's complains about market facilities (if they have any), and try to solve those by consulting with men members.

Government and NGOs extension services: Extension services should be more prompt and less expensive. Farmers should be provided with knowledge and support. Women should be encouraged to take help from the offices in need. Setting up extension office or an information booth in every village would encourage women to access the benefit. Government offices should provide special service to women farmers to increase women's economic development. Media can be a part of extension service programmes to deliver knowledge on insects, pesticides, fertilizers, seeds and nutrition.

Integrating men in promoting women farmers' rights and nutrition: Government and NGO workers can arrange community sessions and dialogues weekly with five to six men to make them aware of the benefits of women's increased participation in agriculture or market. Men and women farmer training can be done together to form a good relation between them. Social campaigns such as making posters, meetings, and sharing information in local gatherings would make community people conscious to stop criticizing women's market participation.

Training of service providers and receivers: Trainings of service providers or staff members should be mandatory so they can better understand how to incorporate gender issues. They should also learn how to treat men and women farmers equitably while considering their different needs. Moreover, the training facilities should be organized at the local level, so that maximum numbers of people can join. Flexible scheduling would be the best option, possibly in the evening, so that women can join. In addition, educated girls and boys should be included in voluntary groups who can arrange Uthan Boithok (informal community dialogues) to provide knowledge on women's empowerment benefits and nutrition. Government institutions or NGOs would arrange the meetings.

Awareness campaign about nutrition: nutrition should be another part of agricultural extension services providing knowledge on how to produce, how to use and how to store, so that the nutritional value of foods remain intact. Health related trainings should be provided from both government and NGOs on nutrition at a large scale. Initiating campaigns - through posters, festoons, banners, or radio – would inform women about healthy foods, their own health needs, help stop discrimination between boys and girls, and help the women learn from the health workers how to maintain hygiene and nutrition while cooking.

Facilitating women's integration in market value chain: The Chamber of Commerce should develop a national market value chain to create a sustainable business in terms of selling vegetables and crops. They can also prepare a crop storage system. In addition, they should negotiate with the city business organizations on behalf of the farmers who can provide good prices and collect their production locally. Moreover, women from Chamber of Commerce can inspire other women to join the market with their products. Union Parishad chairs or members, especially women, can monitor if that committee is ensuring women's voices are heard. Moreover, campaigns using posters, festoons, and the formation of voluntary groups among school-going children expressing the need of women's market level participation would gradually change people's minds. Women from female-headed households will be highly inspired at the beginning; eventually other women might engage. One message to promote is that women can go to the market wearing veil (if they want) and that does not violate social or religious norms as women's development contributes in familial development. Promoting veils is not a permanent solution, though it may help at the beginning of the campaign.

Support regarding technology: Government and NGOs must come forward to invent gender-specific technology. They should work on this sector and provide women with light, easily movable and operated machines. Also, these machines should be supplied to farmers at a very low cost, possibly subsidized to make sure that everybody can utilize these instruments.

4.2 Concluding Remarks

Evidence from this study confirms that most women have to carry out all of the major responsibilities regarding production, including post-harvest responsibilities. At the same time, they are restricted from participating in the public sphere due to gender norms that limit their access to market value chain and hinder social mobility. The extension services regarding information, trainings, irrigation or technologies seem insufficient according to the need. There are few women-friendly pre-harvest and post-harvest technologies for crop production, as well as processing technologies needed for effective participation of women in agriculture. Women's participation in crop production activities has not increased drastically in recent years due to the social and market related challenges. Women are more interested in livestock production or homestead gardening. The FFH farmers are bound to participate in food production due to the absence of men. These women need attention from both the researchers and planners to develop policies to benefit them as employees, entrepreneurs, producers and consumers. Enabling women to benefit from economic development through gainful participation in agriculture will enable them to achieve greater economic empowerment. As women also have manage nutrition in Bangladesh, the growing income would definitely influence on the changed diet of families. The above-mentioned socio-economic conditions of women clarify the institutional norms, environment, and systems where women farmers live. They still lack social networking with community leaders, which not only limits their access to services but also excludes them from

sociopolitical life. Without resolving these issues, women's involvement in agriculture will not bring sustainable change in gender relations, nutrition and women's empowerment.

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