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Women in Bangladesh Agriculture: Scope, Determinants and Constraints

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ABSTRACT

A large number of Bangladeshis are employed in the agricultural sector, and a large number of rural people are involved in crop production and fisheries. Population growth, urbanization, degradation of land, water bodies, wetlands and forests are posing a significant threat to the agriculture sector. Women are heavily engaged in agriculture but often unrecognized. The overall WEAI score for Bangladesh is 0.66 and 5DE score shows that 75% of women lack empowerment as well as GPI score shows that 61.22% of female lack gender parity. Participation rate for women in agriculture has increased by 136.025%, while overall adult participation has increased by 55.97% during the period from 1999-00 to 2016-17. During the same period participation of male has reduced drastically by 16.26%. During 2002-03 women spent almost 48 hour per week in the rural area and in urban area this was only 28 hour, while in 2016-17 it is 33 hour for both areas. Rate of training has decreased over the time in crop, non-crop agriculture, while during 2013-14 percentage of people trained was 11.1% for male and 3.3% for female, and in 2016-17 it has reduced to 0.8% for male and 0.2% for female. During 2010 39.6% Of total employed person were unpaid family labor among which 76.2% were female and men constitute only about 18.3%. The percentage of women as unpaid labor has reduced by 2015 but still constitute 56.3% while for men it is only 7.7%. Wage rate, education, training facilities, distance of the field, access to market, and control over the use of income etc. influence the participation of women in agriculture. Different social and religious barrier restrict women in many way to be involved in the field of agriculture. Discouragement from parents, in-laws, society etc. provides another form of barrier for women to be involved in the work field particularly in rural areas. Dual role played by the women as farmer and also as women of the family restricts and limit their time to be engaged in the agricultural organizations. Women also face constraints in terms of wage rate, access to credit, access to credit, ownership of assets etc.

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CHAPTER 1

INTRODUCTION

1.1 Background and Rationale

The agricultural sector is a significant contributor to the global economy, particularly in emerging markets. About 75 percent of the world's poor live in rural areas, and the majority rely on agriculture as their main source of income and livelihood. There are approximately 500 million smallholder farms worldwide. Most of them grow their crops on less than two hectares of land, and currently produce 80 percent of the food consumed in Asia and Sub-Saharan Africa (Hoffmann, 2016).

Structure of labor force system is complex as it only accounts for the visible or paid labor, while there is also a large number of invisible labors mostly including female labor, making indirect contribution in the national economy (Zaman, 2002).

Women's role in agriculture is very fundamental and globally 40% of world's total labor force is women. Sector-wide participation varies for countries and within countries, from 20% in Latin America to 50% in parts of Africa and Asia (Hoffmann, 2016).

In many parts of Bangladesh, agriculture is the chief occupation of women. Many ethnic groups, for example Santal, Chakma, Garo have been for centuries working as agricultural labor force. The same is also true for many female members of Muslim and Hindus communities (Zaman, 2002).

46% of total farming population of Bangladesh is women. From crop cultivation to fisheries women participate in a wide range of activities. Women also spend most of their time in pre-harvesting with the average time in home gardening being 6-8 hours per week (Akhter *et al.* 2010).

In case of harvesting of vegetables women are more effective than man. Due to the structure of their hands, they can harvest quickly as well as in a larger amount. For homestead gardening most of the inter-cultural operations are mostly performed by the women of the house as male members are busy outside.

Women's empowerment is considered a 'prerequisite' to achieving global food security. Gender systems, however, are diverse and complex. The nature and extent of gender inequity and the conditions necessary to empower women vary across countries, communities and regions (S.Akter *et al.* 2017).

Food security is a major concern to millions. It is built upon three foundational pillars—failure to build any one pillar will result in the failure of all. The first pillar is *food availability*—food production, the pillar most obvious to all. This pillar has been achieved in the present day at the global level. The second pillar is food access, largely economic access to food. Many countries are unable to produce enough food for their whole population and need to import food. Those with insufficient foreign exchange are dependent on food aid. The third pillar is perhaps the most overlooked of all—food utilization or nutritional security. To achieve this pillar, complementary resources are required such as childcare, safe water, good sanitation, and access to healthcare. Women play important roles in achieving all three pillars of food security, not just in than last one as many may expect. In fact, their role in achieving the first pillar is becoming more important as we witness what many are calling the “feminization of agriculture.” In many countries the rural male population is falling far more rapidly than the rural female population as males migrate in search of better incomes (Brown, 2015)

Women produce over 50 percent of the world’s food (FAO, 2011) and constitute about 43 percent of the agricultural labor force, both globally and in developing countries (Doss, 2014). So, It can be said that women empowerment in agriculture has a direct influence on food security and household farm income.

Though household wealth, education and occupation are more important than women empowerment as determinant of adult nutritional status, at the household level calorie availability and dietary diversity are positively associated with women empowerment (Sraboni e. *et al*, 2014). Several factors are related to women’s participation in agriculture. In Bangladesh participation rate was negatively related with landholding, age after some limit, village level electricity, education of household head, distance of bus stop from village and wage rate in non-agriculture; but positively related with age of female workers, irrigated area of female workers’ households, NGO membership of women, remoteness of village and agricultural wage rate in the village. Again, Results from Bangladesh Integrated Household Survey (BIHS) showed that education and income had positive relationship with empowerment in agriculture for both men and women. However, for both the variables the rate of increase in empowerment was higher for men than for women (Miah).

This study aims to identify the over the year changes in women engagement in agriculture, participation in farm activities as family labor and hired labor along with transformation of some of the factors influencing women's participation over the years.

Again in most of the developing countries agriculture is considered to be one of the most stimulating factors for growth and poverty reduction. Though the rural economy of developing countries like Bangladesh largely depends on agriculture and women are one of the crucial resources in agriculture, the sector is often underperforming in part because of the lower productivity of women. In Bangladesh, being a traditional Muslim society, women's participation in economic activities in general and in agriculture in particular has remained low (Jaim, 2011).

From the eighties the countries female labors are emerged as largest industrial labor force in the garment sector, still in the rural Bangladesh more women are involved in farm activities than non-farm sectors. Women provide larger share of food in the household than men, still they are often disfavoured from various sides like law, religion, tradition etc. Despite doing almost equal amount of work a female labor get less wage than a male (Zaman, 2002).

Different literatures on 'Gender in Agriculture' reveal that women lack access to and control over resources such as land and capital as well as agricultural inputs and technology such as improved crop varieties, training information and marketing services (Fletschner, 2014). Again there are also evidences that women have an unmanageable workload, they lack access to credit or have no decision making power over credit, and are poorly represented in agricultural and non-agricultural groups and organizations (Alkire *et al*, 2013, Akter *et al*, 2016).

In Bangladesh with equal level of higher education and higher income, women may still remain less empowered than men in terms of decision making in agriculture (Sraboni *et al*, 2013). Here women earn less on an average of per hour than men. Controlling for differences in age, educational background, industry, occupation and geographic location yields an estimated gender wage gap of 15.9%, but including the effects of industrial and occupational segregation into the estimate yields an estimated wage gap of 23.1% (Kapsoss, 2008).

Issues regarding women empowerment and discriminations are needed to be updated with current information as such things changes with social, temporal, environmental, educational changes. This changes also vary across countries as well as across region of a country. In recent years Government has taken many programs to adress the women issues not only in industrial sector but also in agricultural sector.

There are several studies emphasising on the needs, scope, constraints of as well as factors affecting women empowerment in agriculture. This study aims to locate the changes in above mentions areas in respect of the findings of previous studies. As the issue of women empowerment is already being emphasised by Government, NGOs as well as many public and private organization, this paper will focus on complementing those findings with recent statistics as per their availability.

1.2 Objectives of the study

1. Interpreting women empowerment in rural Bangladesh using WEAI score
2. Determining the trends of women's participation in Bangladesh agriculture
3. Identifying factors affecting women participation in farm activity
4. Identifying constraints for women to participate in Bangladesh agriculture

CHAPTER 2

METHODOLOGY

To attain the first objective women empowerment index developed by International Food Policy Research Institute (IFPRI) for Feed the Future baseline was used. Where, IFPRI obtained the sample for the Bangladesh Feed the Future Zone of Influence. According to them Bangladesh is the only country in this WEAI study where the data are nationally representative of rural areas.

For determining trends of women participation in Bangladesh agriculture different tables and graphs are made using secondary information through Microsoft Excel workbook. For the purpose of assessing trends secondary data are collected from Labor Force Survey 2010, 2013, 2015 and 2016, Gender Statistics 2008 done by Bangladesh Bureau of Statistics. Data previous to 2010 and supportive literature were taken from “Women’s Participation in Agriculture in Bangladesh 1988-2008: Changes and Constraints (2011)”.

Factors that influence participation of and constraints faced by women in agriculture are pointed based on previous literature, journal articles, reports etc. No additional analysis is done for this purpose.

CHAPTER 3

RESULTS AND DISCUSSIONS

3.1 Women empowerment in agriculture using WEAI:

The WEAI is an aggregate index, reported at the country or regional level, which is based on individual-level data on men and women within the same households. The WEAI is a weighted average of two sub-indexes: (1) the five domains of women’s empowerment (5DE) and (2) gender parity (the Gender Parity Index, GPI).

The 5DE sub-index shows how empowered women are, capturing the roles and extent of women’s engagement in the agricultural sector in five domains: (1) decisions over agricultural production, (2) access to and decision making power over productive resources, (3) control over use of income, (4) leadership in the community, and (5) time use.

GPI combines two key pieces of information: (1) the percentage of women who lack gender parity relative to their male household counterparts and (2) the extent of the inequality in empowerment between those women who lack parity and the men with whom they live (Sraboni e. *et al*, 2014)

Table 1: WEAI score

Indicator	Value
5DE score	0.65
Disempowerment score	0.35
% of women achieving empowerment	25.01
% of women not achieving empowerment	74.99
Mean 5DE score for not yet empowered women	0.53
Mean disempowered women	0.47
GPI score	0.8
% of women achieving gender parity	38.78
% of women not achieving gender parity	61.22
Average empowerment gap	0.33
WEAI score	0.66

(Source: IFPRI, 2012)

The overall WEAI score for Bangladesh is 0.66. The 5DE for Bangladesh shows that 25.01 percent of the rural women are empowered. Among the 74.99 percent of women who are not yet empowered, they have not achieved 53 percent of domains.

Above figure provides a breakdown of disempowerment by 5 domains which indicates that community leadership and access to productive resources account for more than 50 percent of disempowerment.

The indicators that make a major contribution to disempowerment for women are group membership and speaking in public and least contribution are autonomy in production and ownership of assets (IFPRI, 2012)

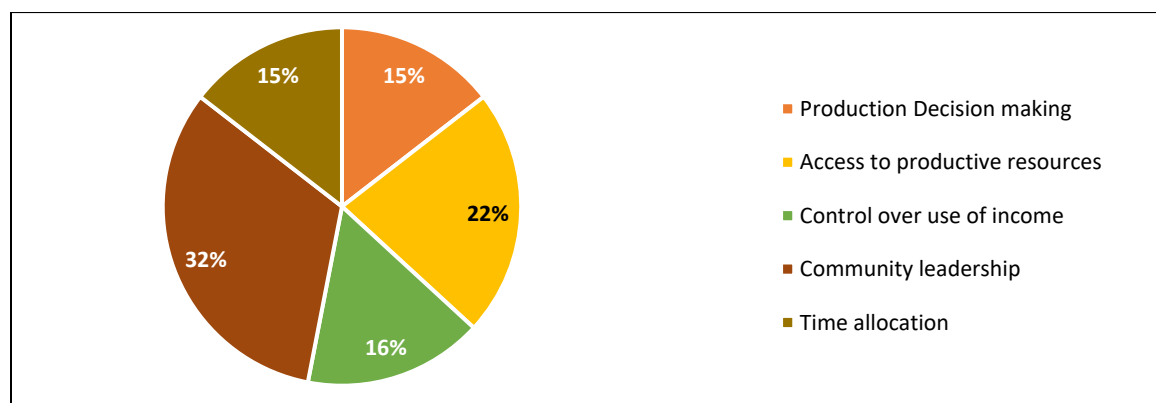


Figure 1: Contribution of domains to the disempowerment of women (Source: IFPRI, 2012)

The GPI for rural Bangladesh is 0.80 which indicates that 38.78 percent of rural women had gender parity with the primary male of their household. Of the 61.22 percent of women who had not achieved gender parity with primary male of their household average empowerment gap is 33 percent.

Figure 2 shows that, nationally 39% of women enjoy gender parity with the primary male of their households. Among the divisions Barishal shows the highest degree of gender parity with 46% of women being equally empowered at their households. Chattagram and Sylhet have lowest percentage that is 30% of women are equally empowered as the primary male of their household.

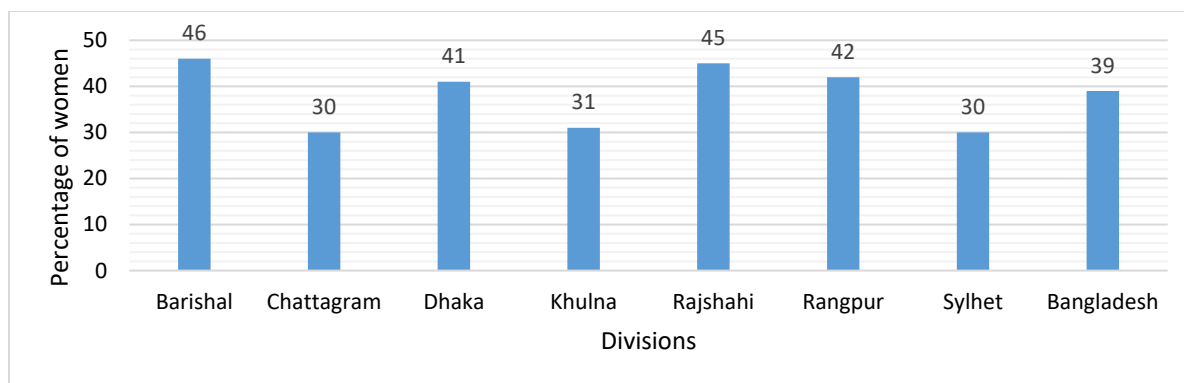


Figure 2: Percentage of women who have gender parity by region (Shraboni E, 2014)

3.2 Labor force growth rate and women participation in agriculture: Bangladesh

Size of the total labor force (15 years and above) during the periods from 1995-96 to 2016-17 has increased from 36.1 million to 63.504 million. Average growth rate for these year is 3.571%. During the period female labor force showed larger average growth rate that is 7.227% than male labor force which is 2.540%. Except the period 2010 to 2013 where the male labor force grew at a higher rate(7.66%) than female(5.007%), female labor grew at a higher rate than male as revealed from the Labor force surveys (LFS) in 2010, 2013, 2015. 2016 (Table- 02)

Table 2: Annual average labor force growth rate by gender: Bangladesh

Periods	Total	Male	Female
1995-96 to 1999-00	3.2	1.2	14.4
1999-00 to 2002-03	4.4	3.8	6.5
2002-03 to 2005-06	2.21	1.23	5.45
2005-06 to 2010-11	3.48	1.5	8.74
2010-11 to 2013-14	7.07	7.66	5.71
2013-14 to 2015-16	2.403	1.29	5.007
2015-16 to 2016-17	2.233	1.103	4.784
Average growth rate	3.571	2.540	7.227

(Source: Jaim (2011), BBS (2011), BBS (2014), BBS (2016), BBS (2018))

Participation of female labor compared to male has increased in agricultural sector over the periods. During the period from 1999-00 to 2016-17 no of adult labor force has increased from 39 million to 60.83 million with an increase by 55.97%. During same period female labor force has increased by 136.025% which is much higher than male labor force that has increased by 35.633%. In case of agricultural sector where as female employment has increased by 192.84%, there is a sharp decline in the participation rate for male by 16.26%. While there were only 3.8 million women were engaged as agricultural employment during 1999-00, the number was 18.646 million in 2016-17 which can be observed from Table- 3.

Table 3: Changes in Employment by gender

	1999-00	2016-17	Change	1999-00	2016-17	Change
	Agriculture (in '000)		(%)	Total labor force (in '000')		(%)
Male	16200	13565	-16.26	31100	42182	35.633
Female	3800	11128	192.84	7900	18646	136.025
Total	20000	24693	23.46	39000	60828	55.97

(Source: Jaim (2011), BBS (2011), BBS (2014), BBS (2016), BBS (2018))

Figure-3 shows the sector wise participation by gender over the period where total work force has increased over the period for all the sectors and also for both gender. In both agricultural and non-agricultural sector the work force participation rate was higher for female. In non-agricultural sector participation of male has increased with lower fluctuation over the year while female participation in this area is fluctuating more and rate of increase is lower than male.

Shifting of participation of male from agriculture to non-farm activities might have created a shortage in the agricultural sector of Bangladesh which largely explains gradual increase of female participation in agriculture (Jaim, 2011).

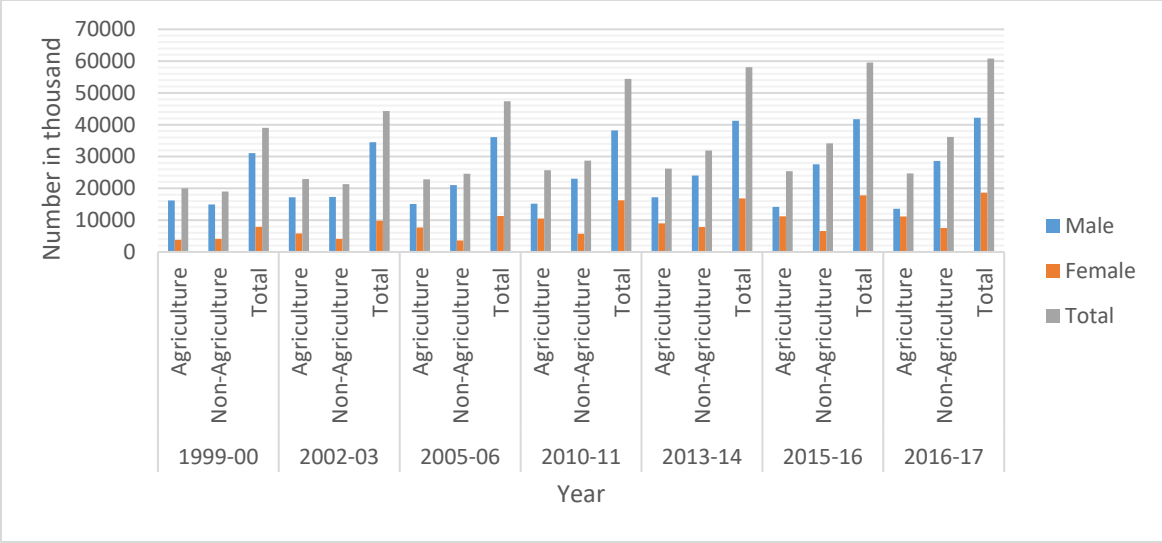


Figure 3: Employment by gender and sectors (Source: Jaim (2011), BBS (2011), BBS (2014), BBS (2016), BBS (2018))

Comparative proportion of men and women participation in agriculture in recent past can be seen more clearly from Figure – 3. Due to development of different sectors apart from agriculture over the years rate of employment in those field has increased for male substantially. Again rapid development of different establishments like industries, school, buildings etc. have also reduced land for agricultural production, hence homestead gardening has taken a large portion of cultivation rather than field. Growth of homestead gardening and reduced tendency for rice production has increased the level of women participation in agriculture, while industrial growth has reduced the number of men in agricultural sector.

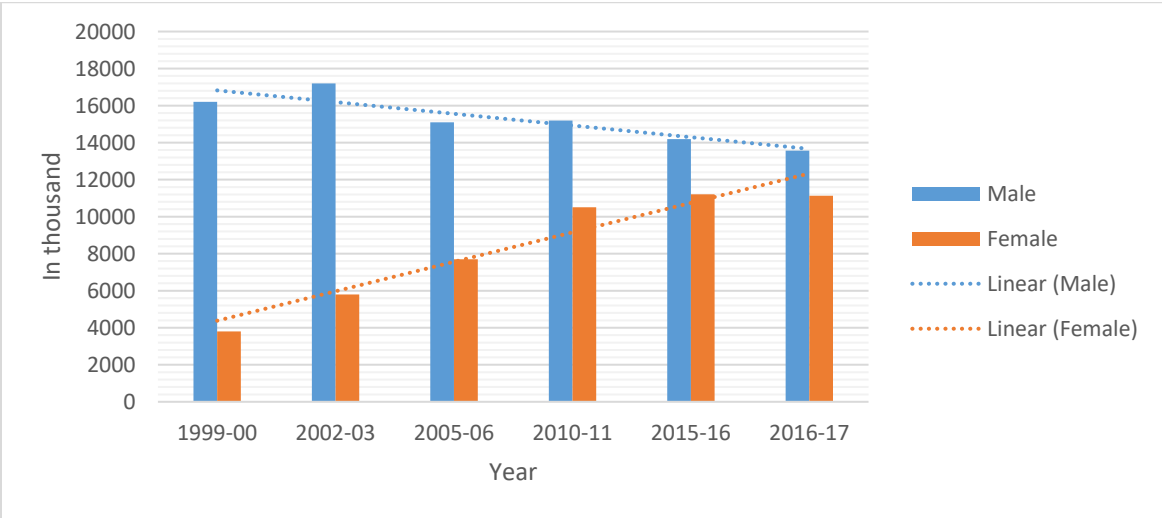


Figure 4: Employment by gender and sectors (Source: Jaim (2011), BBS (2010), BBS (2013), BBS (2015), BBS (2016))

Participation rate of women in agricultural employment has increased over time, while the rate in non-agricultural sector has declined for the same period. Industrial growth influenced the movement of male towards non-agricultural work as well as migration has increased towards urban area by male. This might work as a consequence that female participation declined in non-agricultural sector particularly in rural areas along with their increasing involvement in agriculture, although garment industries captured a large number of young women in urban and sub-urban areas.

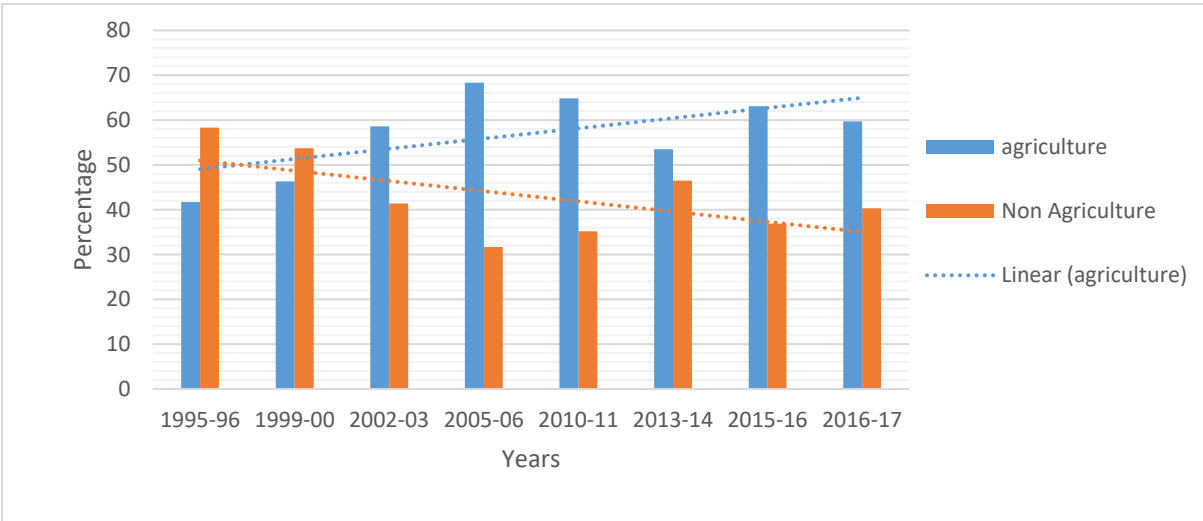


Figure 5: Trend in the distribution of employed women by sectors (Source: BBS (2008), BBS (2011), BBS (2014), BBS (2016), BBS (2018))

In agriculture average weekly working hour for female varied significantly based on their locality during the period from 2002-03 to 2010-11, while from 2013 to 2016 hour spend in agricultural work per week was at a same level for rural and urban area. During 2002-03 women spent almost 48 hour per week in the rural area and in urban area this was only 28 hour as shown in figure- 5. This fluctuation has been eliminated and weekly working hour remain same for both the area, although daily work hour may vary.

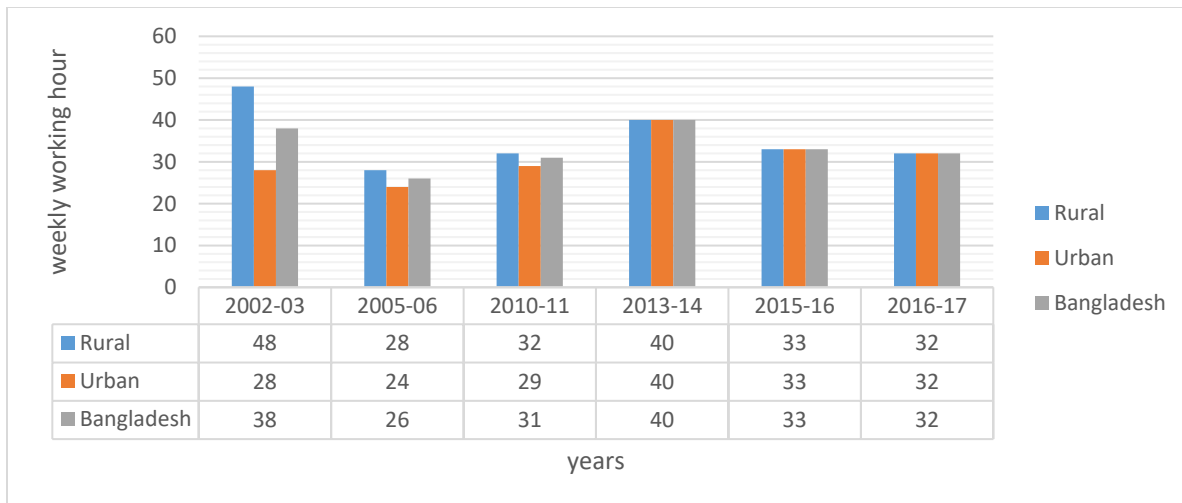


Figure 6: Average weekly hour spent by women in agriculture (Source: BBS (2008), BBS (2011), BBS (2014), BBS (2016), BBS (2018))

Again weekly working hour for female is lower than male over the years. In agriculture weekly human working hour has been reduced by the introduction of mechanization. Particularly works like husking, drying etc. were done by female at the household manually, while now these are done mechanically which reduced the working hour for female as well as male over the year.

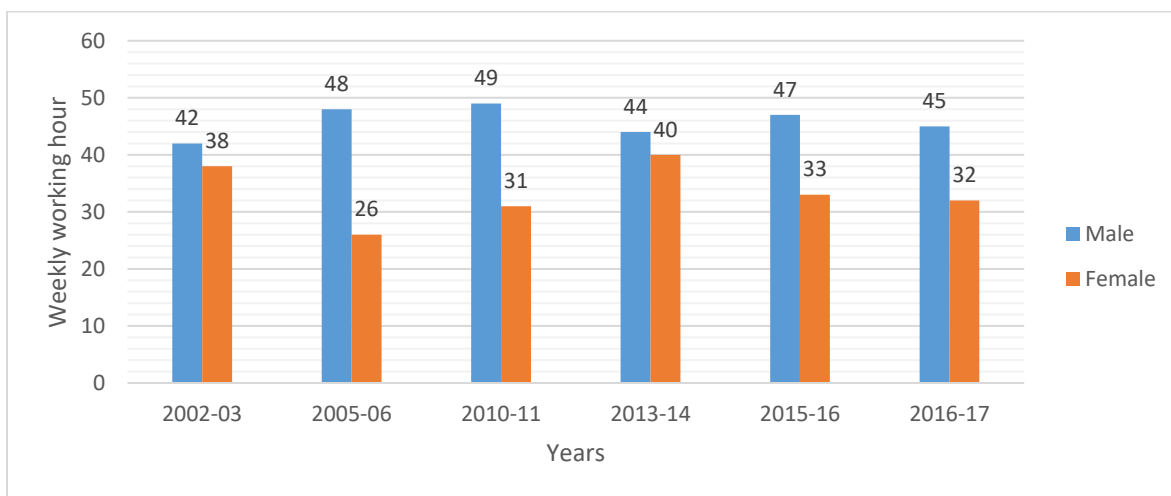


Figure 7: Weekly working hour by gender (Source: BBS (2008), BBS (2011), BBS (2014), BBS (2016), BBS (2018))

3.3 Factors influencing the rate of participation by women in agriculture

Rate of women participation in agriculture is significantly related to age of female workers, NGO membership, remoteness of village, access to training and agricultural wage rate. Again women participation in agriculture is negatively related with the education level of female worker, village level electricity. Non-agricultural wage rate, area of own land etc. (Jaim, 2011).

Industrialization and development of many other non-farm occupation have reduced the percentage of people trained in agricultural activities. While during 2013-14 percentage of people trained was 11.1% for male and 3.3% for female, in 2016-17 it has reduced to 0.8% for male and 0.2% for female as shown in figure- 6.

Participation rate of women in training program is much lower than men in Bangladesh. It may be due social, religious and traditional bindings for women which restrict the women to go to a crowd where many other male are also present. Despite a greater increase in the number of women involved in agriculture, their access to training is still restricted.

Considering sub-sectors of agriculture women participation was higher in case of poultry farming related training rather than crop farming during 2003-04 but declined roughly near zero during 2016-17. Female participation percentage has increased for non-crop agricultural training for the last few years.

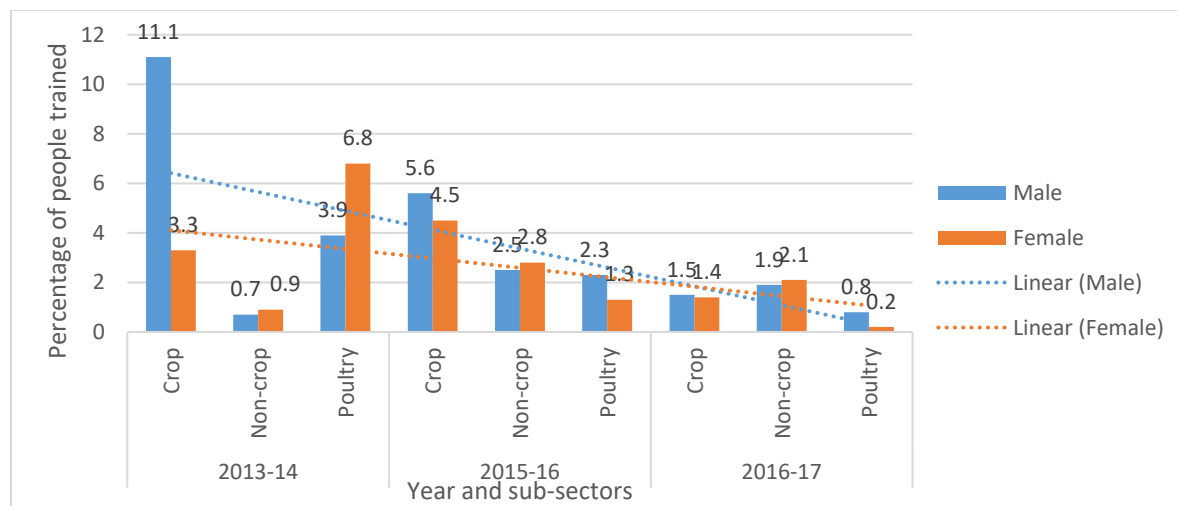


Figure 8: Percentage of people trained in agriculture (Source: BBS (2014), BBS (2016), BBS (2018))

3.4 Constrains women face in agriculture

Cultural norms and regulations, Religious belief, traditional views, less availability of time as women have to concentrate on household works and different restrictions from family members acts as major constraints for women to participate in agricultural extension education services (Butt et al, 2010)

In Bangladesh due to religious and social barriers women face many obstacles while working. Although women are now working in every field in Bangladesh, people have to think of many factors that may create problem for them. While male can travel and work almost anywhere around the country as well as aboard women face restrictions here and mostly said to be work within their specific region.

One of the most crucial issues of the female labors in the rural areas is the security. The deterioration of the law and order situation in the rural areas causes more sufferings than that of their counterpart male members. Besides, discrimination in the wage distribution, physical and mental torture, threatening on the way by the miscreants and street dwellers, or by the bus passengers sitting nearby, are pronounced. And in most cases, they raise no resistance and seek no help from anybody else (Zaman, 2002)

Despite of these insecurities there are facts that often female are not directly confined but discouraged to go outside and work. From a study conducted among six agro-ecological zone of Bangladesh during 2002 it was found that 44% of discouragement come from guardians of the village, 34% from husband, 24% from religious leaders and 9% from mother-in-law (Zaman, 2002). These statistics shows that discouragement mostly come from the guardians of rural community that is they are stuck to their traditional belief that women should not be involved in work beyond the boundaries of their house.

Although discouragement has been reduced to a very low level and now a days guardians are pretty much supportive to make their girl work. It is one of the contributing factors that female engagement in agriculture has grown at both rural and urban level. Despite of these growing awareness women have to think while taking up work particularly in rural areas.

Women's double burdens and triple roles

Women plays important role for agricultural and rural development. They often face structural and institutional barriers to their full participation. Rural women play triple role as farmer, caretakers and cash earner. These multiplicity of roles and household works reduce the time available to a women (Tanwir, 2013).

Lower levels of capacity

Rural women generally have less human capital in regards of schooling and poor nutritional status. Literacy and technical skills of women in many regions are lower for female than male which restrict them to perform in agricultural sector particularly as manager, leader or salaried employer (Tanwir, 2013).

Issues with respect to ownership

Rural women faces problem with respect to the ownership and control of assets. The assets mostly women own hold economically less value. Lack of ownership of economically valuable assets restricts women to access credit, other financial services, water and grazing rights as they do not hold land title (Tanwir, 2013).

Rural women are being engaged in agricultural work but mostly in the form of unpaid family labor. During 2010 39.6% Of total employed person were unpaid family labor among which 76.2% were female and men constitute only about 18.3%. The percentage of women as unpaid labor has reduced by 2015 but still constitute 56.3% while for men it is only 7.7% (BBS 2011, BBS 2016).

CHAPTER 4

CONCLUSION

The WEAI score for women in Bangladesh agriculture indicates that although there is increased rates of participation of women in Agriculture, disempowerment in the domains prevail. Gender parity is low in many regions of the country and there prevails gap in empowerment with their male counterparts.

There is an increasing trend towards the participation of women in agricultural sectors. Rate of participation agricultural employment shows up-streaming growth for women while for male the flow is downward going. This downward movement of male worker increased the number of women in field work while decreasing women participation in non-agricultural works.

Participation in non-agricultural sector by male has increased and as a whole workforce participation also have increased over the period. Industrialization and mechanization of agriculture has reduced the level of training for both male and female as a whole in terms of crop production and poultry farming, but number of women taking non-crop agricultural training has increased over the period. Allocation of time in agriculture by men and women has decreased as some of the works are now done mechanically. Over the period the differences in working time allocation by women between rural and urban area has been eliminated.

Women engagement in agriculture has increased over time. Although their participation in crop production has reduced to a certain level, in poultry, livestock and homestead gardening their involvement has gradually increased. Since women in Bangladesh feel comfort engaging in activities within their household boundary, agricultural activities like livestock and poultry production as well as homestead gardening should be encouraged.

Wage rate, education, training facilities, distance of the field, access to market, and control over use of income etc. influence the participation of women in agriculture. Land holding, age after a limit etc. have negative impact on women participation in agriculture.

Traditional norms, status of employment (women in the form of unpaid labor), male dominance, lack of mobility, lack of ownership and many other factor contribute toward the restrictions of women to participate in agricultural work.

In order to remove these constraints legislative structure should be reformed emphasizing on female participation. Better training and education facilities, access to economically valued assets, group involvement, access to credit, and fair wage rate should be ensured for women.

Furthermore initiatives aimed at making land tenure and inheritance laws more equitable as well as strengthening women's property rights will irrevocably lead to an increased participation, individual empowerment as well as lead to improvements in societal well-being (Tanwir, 2013)

References

- Akhter, S. M. (2010). The Role of Women in Traditional Farming Systems as Practiced in Home Gardens: A case Study in Sylhet Sadar Upazila, Bangladesh. *Tropical Conservation Science*, 3(1):17-30.
- Akter, S. K. (2016). The influence of gender and product design of farmers' preference for weather-indexed crop insurance. *Global Environment change*, 38, 217-229.
- Alkire, S. M.-D. (2013). The Women,s empowerment in agriculture index. *World Dev.*, 62, 71-79.
- BBS. (2008). Gender statistics 2008. Dhaka.
- BBS. (2010). Labor Force Survey 2010. Dhaka: Bangladesh Bureau of Statistics.
- BBS. (2013). Labor Force Survey 2013. Dhaka: Bangladesh Bureau of Statistics.
- BBS. (2015). Labor force survey 2015-16. Dhaka: Bangladesh Bureau of Statistics.
- BBS. (2016). Labor force survey 2016-17. Dhaka: Bangladesh Bureau of Statistics.
- Brown, L. R. (2015). WOMEN AND FOOD SECURITY: ROLES, CONSTRAINTS, AND MISSED OPPORTUNITIES. World Bank, Washington DC, USA.
- Butt, T. Z. (2010). Role of Rural Women in Agricultural Development and Their Constraints. *JOURNAL OF AGRICULTURE & SOCIAL SCIENCES*, volume. 6, pp. 53-56.
- Doss, C. (2014). If women hold up half the sky, how much of the world's food do they produce? *Gender in Agriculture*. Springer, Netherlands.
- ESHA SRABONI, H. J. (2014). Women's Empowerment in Agriculture: What Role for Food Security in Bangladesh? *World Development*, volume. 61, pp. 11-52.
- FAO. (2011). Women in Agriculture: Closing the gender gap for development. In: *The State of Food and Agriculture*. FAO, Rome, Italy.
- Fletschner, D. K. (2014). Rural women,s access to financial services: Credit, Savings and Insurance. *Gender in Agriculture*.
- IFPRI. (2012). WOMEN'S EMPOWERMENT IN AGRICULTURE INDEX: BASELINE REPORT. Washington DC.
- Jaim W.H.M, M. H. (2011). Women's Participation in Agriculture in Bangladesh 1988-2008: Changes and Determinants. 7th Asian Society of Agricultural Economists (ASAE) International Conference, Hanoi, Vietnam.

- Kapsoss, S. (2008). The Gender Wage Gap in Bangladesh. ILO-Asia-Pacific Working Paper series, Regional Office for Asia and Pacific, Bangkok.
- Miah, H. (2015). Agriculture Sector Development Strategy: background paper for preparation of 7th Five Year Plan.
- Nathalie Hoffmann, A. R. (2016). Investing in Women along Agribusiness Value chain . Washington D. C.: International Finance Corporation.
- Shraboni E, A. Q. (2014). How Empowered are Bangladeshi Women in the Agricultural Setting? Bangladesh Development Studies, Dhaka.
- Sonia Akter, P. R. (2017). Women's empowerment and gender equity in agriculture: A different perspective from Southeast Asia. Food Policy, volume. 69, pp. 270-279.
- Sraboni, E. H. (2013). The Women's Empowerment in Agriculture Index: Results from the 2011-2012 Bangladesh Integrated Household Survey. Project report submitted to the U.S. Agency for International Development. International Food Policy Research Institute (IFPRI), Dhaka.
- Tanwir, M. a. (2013). The Rural Woman's Constraints to Participation in Rural Organizations. Journal of International Women's Studies, volume. 14(3), pp. 210-229.
- W. M. H. Jaim, M. H. (2011). Women's Participation in Agriculture in Bangladesh 1988-2008: Changes and Determinants. 7th Asian Society of Agricultural Economists (ASAE) International Conference. Hanoi, Vietnam.
- Zaman, D. S. (2002). WOMEN'S ROLE AND STATUS IN BANGLADESH AGRICULTURE. Dhaka: HDRC.