

博士論文（要約）

Women's Empowerment through Modern Dairy Farming
in Rural Bangladesh

(バングラデシュ農村における近代的酪農を通じた
女性のエンパワーメント)

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CHAPTER 1

CURRENT SITUATION OF WOMEN AND EMPOWERMENT IN BANGLADESH

1.1 Status of Women in Bangladesh

Bangladesh is one of the poorest countries in the world where women in rural areas have low standard of living. In 2016, the population of Bangladesh has reached 162 million of which 82 million (50.6%) is males and 80 million (49.4%) females. This yields a sex ratio of 1.024 (1024 male per 1000 female) indicating “missing women”. Sen first estimated the number of “missing women” by calculating the number of extra women who would have existed in a particular country if they had received similar care as men. According to Sen, in countries where men and women receive similar care, the female to male ratio is about 1.05¹. In Bangladesh, 6.1 million² women are missing by following Sen criteria. In Bangladesh, women’s condition is not good. They are deprived their rights in the family as well as in the society. Still now, lower preference for girls exist in the rural society. Women are not treated as same as men in the family and society. Due to the low status of women, they are facing lots of difficulties in their whole life and this is continuously hampering their way of empowerment. Therefore, it is necessary to upgrade the status of rural women in Bangladesh. Kerala, a southern state of India, is widely known as a progressive region with high levels of social development despite poor economic growth, the standard indicator of female position in Kerala is also exceptionally well. Increasing feminization of Kerala’s population is seen as an indicator that women enjoy good physical health in that region. Previously cultural norms such as early marriage practices,

¹ Sen Amartya, ‘More Than 100 Million Women Are Missing’, Feature, *The New York Review of Books*, Vol.37, no.20 (20 December 1990).

² According to Sen’s criteria, female to male ratio is 1.05:1.00. In Bangladesh, female to male ratio is only 1.000:1.024, total female population is 80 million and male population is 82 million. If we apply the ratio of 1.05: 1.00 to male population, the estimated female population will be 86.1 million. By deducting actual female population of 80 million, the missing women will be 6.1 million.

dowry, and violence were responsible for low status of women in Kerala³. Therefore, in Bangladesh, it is also important to give more emphasis on women's health, freedom, position, power and preference for girls.

In rural Bangladesh, there exist socio-economic disparities between men and women. Women have limited role in household decision-making, limited access and control over household resources (physical and financial assets), low level of individual assets, heavy domestic workloads, restricted mobility and inadequate knowledge and skill, which are leading to women's vulnerability and disempowerment in Bangladesh.

Status of rural women in Bangladesh is described in terms of low literacy rate of adult women, early marriage, less freedom of mobility and low health condition of women and low awareness about health. Lack of power of women over their own decision-making is recognized as a barrier to improve women's development.

In Bangladesh, being a traditional Muslim society, the status of rural women is domestic in nature. The constitution of Bangladesh has permitted equal right to all citizens irrespective of sex, religion and caste but still now rural women of Bangladesh are the most vulnerable section of population of the country.

In spite of the low status of women in rural area, they play an important role in improving the quality of life of poor household. They work with their families to support their livelihood through earning income from farming activities. A rural woman has to perform multidimensional works in her house everyday such as child rearing, cooking, collecting fuel, bringing water, farming activities, taking care of old or sick person, washing cloth and maintenance of house (Figure 1.1). But much of her contribution remains unseen, unrecognized and unaccounted. Though they are engaged in heavy physical labor but women's contribution is not evaluated. All of the works of women are totally unpaid contribution for the well-being of the family. They are over-burdened by performing multidimensional works in the household.

³ <http://policy-practice.oxfam.org.uk/publications/marriage-development-and-the-status-of-women-in-kerala-india-131519>

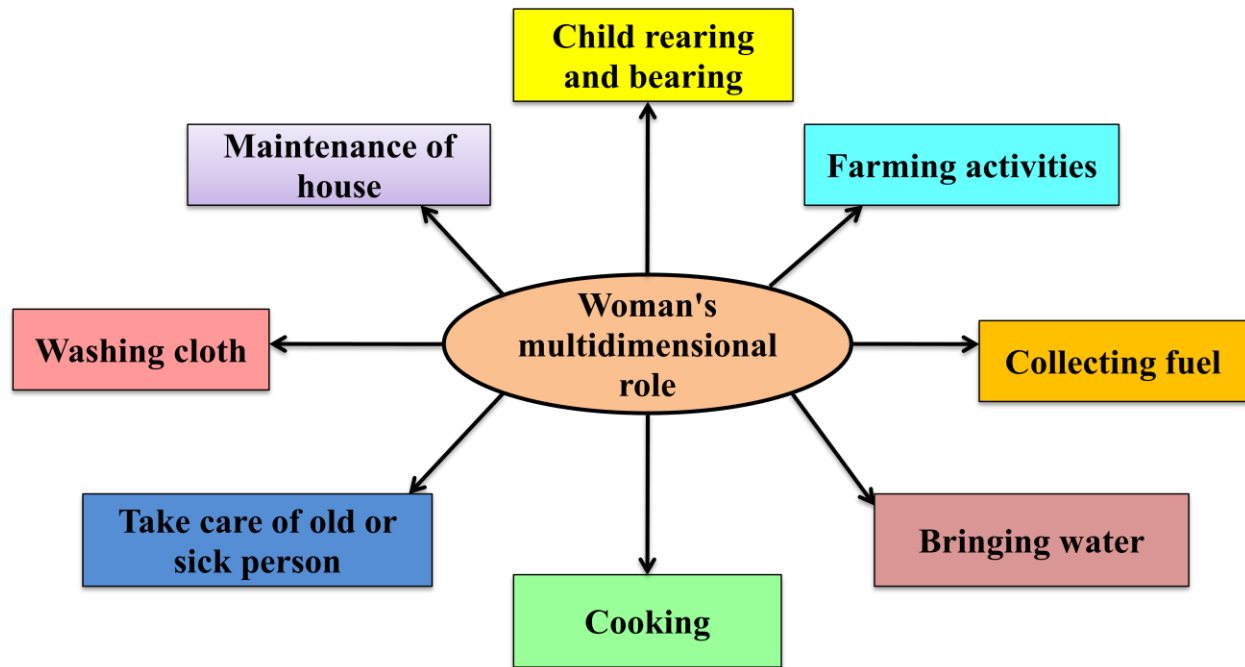


Figure 1.1: A rural woman's multidimensional role in the household

Source: By the author

Masood and Jamil (2015) states that due to lack of importance given to women's empowerment in rural life that contributes to a continuous cycle of poverty in the country. Rural women belong to the most deprived section of the society facing adverse conditions in terms of social oppression and economic inequality. Many women in Bangladesh follow the traditional norms and do not really think oppressed and discriminated, and due to their religion, customs, tradition and historical experiences, these women naturally accept the situation that males are in charge of everything and making most decision.

The next section will discuss the factors that indicate the status of rural women in Bangladesh such as the literacy rate of women, early marriage, health status and mobility status of women in Bangladesh.

1.1.1 Adult Literacy Rate of Women

Education was important in raising awareness about women's perception regarding personal decision-making and child bearing. It is a general consensus that education can enhance women's capability in order to form

awareness regarding gender issue. The Figure 1.2 shows adult literacy⁴ rate of men and women in Bangladesh. Adult literacy rate of women (15 years and over) is comparatively lower than male (Figure 1.2) in Bangladesh. Because of lower literacy rate of women than men, they have to suffer violence, discrimination, lower status, less confidence and capability in their whole life. For these reasons they are vulnerable, hopeless and dependent on men.

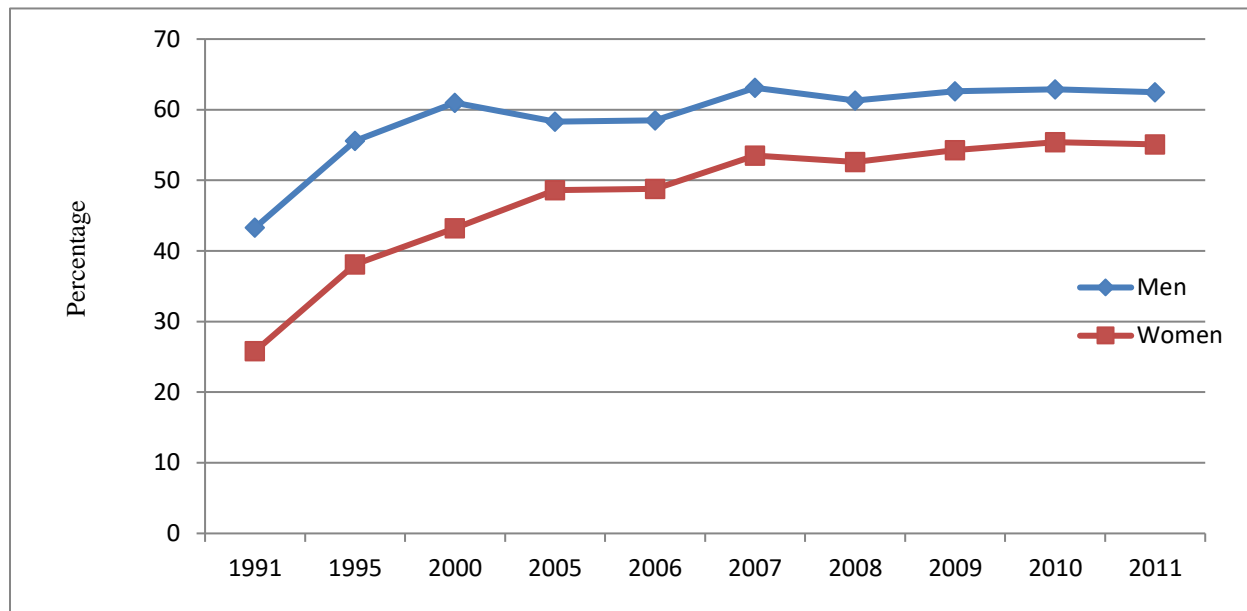


Figure 1.2: Adult literacy rate of men and women in different years

Source: Begum (2014)

1.1.2 Early Marriage

Legally, the minimum age of marriage is 21 for men and 18 for women in Bangladesh. Child marriage can be defined as any marriage carried out below the age of 18 years for women, before the girl is physically, psychologically ready to shoulder the responsibilities of marriage and childbearing. Child marriage rates in Bangladesh are amongst the highest in the world (UNICEF, 2012) and 66 per cent of girls are married before the age

⁴ Adult literacy is the percentage of people ages 15 and over who can read and write with understanding a short simple statement about their everyday life.

of 18. Over one third of girls are married before the age of 15. The effect of early marriage on girls and women are shown in Figure 1.3.

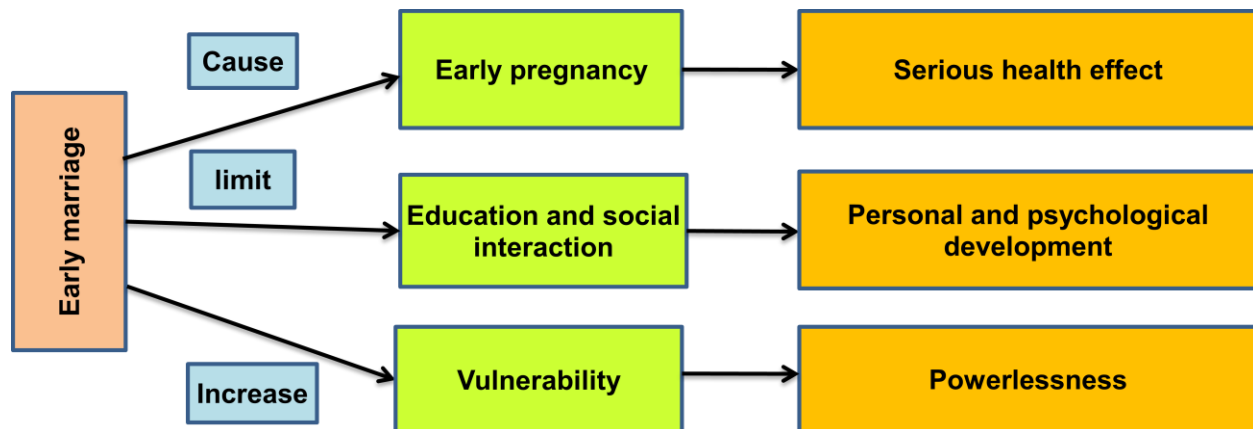


Figure 1.3: The effect of early marriage on women

Source: By the author

Early marriage causes girls to drop out of education and limits their opportunities for social interaction. Consequently, they are deprived from personal and psychological development⁵. New brides are expected to work in their husbands' households and are subject to the same risk as child domestic workers. Gender discrimination begins early in the life of women and girls in Bangladesh as reflected in the widespread practice of early marriage. Since marriage, among other things, transfers guardianship of the bride from her father to her husband, permission for further education, employment, hospitalization, or any other disposal of a married woman's time outside her conjugal residence is to be sought from her husband. Early marriage leads to early pregnancy. There are serious health effect and children becoming significantly malnourished if born to a teenager. The root causes of child

⁵ Due to early marriage, rural women have less decision-making power, less confidence and low self-esteem limited their own development.

marriage - the prospect of reduced dowry payments⁶, and fears of sexual harassment⁷ - are continuing to prompt parents to marry girls off before they reach adulthood. In Bangladesh, still now the poor parents think that the birth of a girl child will add to their sufferings. Instead of sending her to school, she is married at early age to reduce burden in the family. In her parent in-laws house she is not treated well and she is tortured and mistreated by her husband and husband's family member for dowry. This situation is responsible for increasing vulnerability of women and as a result, they are powerless in the family as well as in the society.

1.1.3 Health Status of Women

In Bangladesh, women's health status is determined by their low socio-economic status and early marriage. Women work hard long time which adversely affects their health. Women's disempowerment in Bangladesh adversely affects nutritional status and women's ability to seek health care for themselves. Women are less likely to receive modern medical care and they generally rely on traditional and cheap methods of health care that exclude women from fully accessing their rights, negatively affecting their health and food security. Within the household in rural area, gender inequality distorts the intra-household distribution of food and for this reason woman can eat less and last that contributed to malnutrition of women and children (World Food Program, 2011). Women's lack of access to control over resources inhibits food access for mother and children (Rashid et al., 2014). Women who are malnourished have poor health condition, less capable to work, less income earning potential and underweight among women can lead to having lower birth weight children which increased malnutrition among women in the country. Poor maternal nutrition which is highly prevalent in Bangladesh especially among adolescent girls, significantly contributed to an intergenerational cycle of malnutrition in Bangladesh (Figure 1.4). Malnourished children are physically weak, they lack resistance to disease, their academic performance will be hampered and they will be less productive when they will grow up. Malnourished mother give birth to low weight

⁶ Poor families consider early marriage financially beneficial because when girls become older, dowry amount will be increased.

⁷ In rural area, girls face sexual harassment (rape) in their way of the school or outside house.

babies who can become underweight⁸. Adolescent pregnancy is associated with a 50% of increased risk of low birth weight, premature birth and maternal mortality (Bhutta et al., 2013; World Health Organization, 2007).

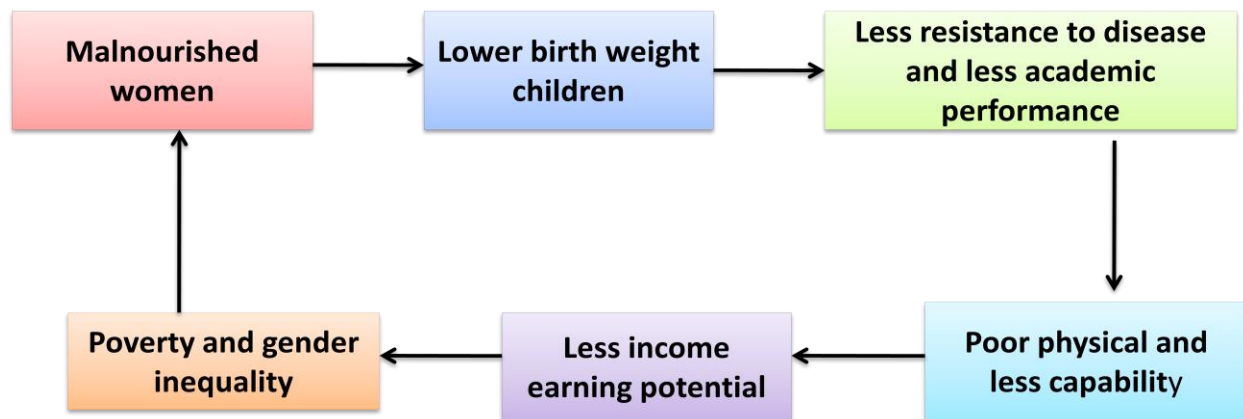


Figure 1.4: Cycle of malnutrition in Bangladesh

Source: By the author

Reducing the adolescent fertility rate and delaying first pregnancy will reduce the risk of low birth weight and stunting in their children, and will allow adolescent girls to grow their full potential and protecting their own nutritional status over the long term. Maternal death is associated with anemia and hemorrhage. Social norm and practice acknowledge male nutritional needs more than that of female. A rural woman has neither enough time for herself nor sufficient food to eat. She generally depends on the leftovers after everyone in the family has finished meal. She is a perpetual victim of malnutrition and ill health. There is none to look after her when she is sick but she has to nurse all members during their illness. Women are generally accepted as being the most disempowered members of the oppressed classes. Women are more disadvantaged than men in terms of access to health care.

There is also higher risk of maternal mortality in Bangladesh (176 deaths per 100,000 live births in 2015) due to hazardous health effect of women compared with South Asian country such as Sri Lanka (30 deaths per

⁸ USAID office of food for peace food security country framework for Bangladesh FY 2015-2019, February 2015.

100,000 live births in 2015) (Table 1.1). It will not be possible to improve the health status of women until structural changes take place in societies and discrimination is eliminated.

Table 1.1: Compare maternal mortality rate with other countries

| Country | Maternal mortality rate per 100,000 live births | | | | |
|------------|---|------|------|------|------|
| | 2011 | 2012 | 2013 | 2014 | 2015 |
| Bangladesh | 228 | 214 | 201 | 188 | 176 |
| Sri Lanka | 33 | 32 | 32 | 31 | 30 |

Source: World Bank (2015), <http://data.worldbank.org/indicator/SH.STA.MMRT>

1.1.4 Women's Mobility Status

Gender inequality in Bangladesh restricts women's freedom of movement and limits them from being able to work outside to earn income (World Economic Forum, 2013). Women's movement from one place to another is sometimes restricted. The social institution known as *shomaj* (society) control the women's movement in various ways and do not allow her to move freely in the society. Woman's ability to become independent, looking for jobs, outside her home, initiative to gather knowledge about new ideas are very much controlled by her limited scope of mobility in the society. In Bangladesh, outside house is not safe place for women, girls, even child⁹ and this extremely affects their extent of mobility. Most of the rural women have little opportunity to interact with people outside home. Restricted mobility of women hampers their way of being empowerment in various ways (Figure 1.5).

⁹ Women, girls and child suffer different kinds of violence

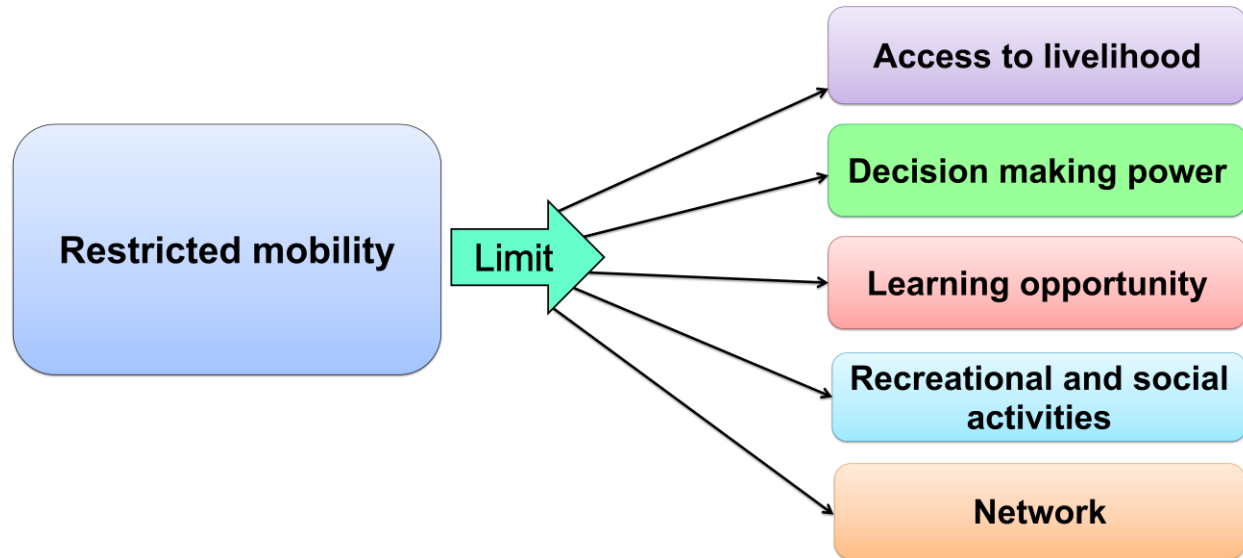


Figure 1.5: Restricted mobility affects women empowerment

Source: By the author

1.2 Existence of Patriarchal Social System

In the patriarchal social system, male shows sovereign power to control household income, women have less possession over the resources at husband's house and get less scope to control over resources, early marriage, low literacy rate of women, less mobility, less decision-making status, less preference for girls, less confidence, and lack of awareness among the women about their right.

In patriarchal society like Bangladesh, women's are in a disadvantaged position and they are not treated as equal as men. Women in custom and practice remained subordinate to male in almost all aspects of their lives. When a daughter grows up, she always safe-guarded by father, and father is considered her guardian due to husband's careless attitude towards wife from when she is being married. After marriage, her identity is her husband and quickly she has to prove her capacity of becoming mother by giving birth to a baby boy because son preference dominates socio-cultural life in Bangladesh.

In Bangladesh, where husbands are normally influenced by customs, tradition and religion, they think that the main duties of women are to raise kids and take care of the house. The poor status of women in family and

society exists even now due to the strong patriarchal structure of the society. The poor socio-demographic status of women might affect the social well-being in various dimensions as well. Working at home (family care) is always seen as a regular work of women without proper recognition of their labor (Rahman, 2013). The women are primary care givers and domestic workers within the household at every stage of their life cycle and this responsibility is expanded to serve the needs of the community (FAO, 2005).

Normally gender discrimination has started from her own family because of their traditional thinking. At the household, girl children had to face unequal access to nutrition, health care and education compared to boy children. In rural area, it is a strong belief that a son should be educated because a son will need to support his aged parents, and a daughter who after her marriage serves another family. For such beliefs, most families prepared girls for marriage (Ahmad and Sultan, 2004). In Bangladesh, rural women are inferior to men. Within the household, only husbands have the right on how the money will be utilized, even the money women earn that is also controlled by their husbands (Gobezie, 2010).

Masood and Jamil (2015) state that according to Islamic laws there is equality between the sexes but that women receive differential treatment due to misinterpretation of religious ideas. As a result of various social beliefs and cultural bias, women's access to property and employment are significantly lower than men. In matters of marriage, divorce, maintenance and inheritance, women are also deprived of their right. Women suffer from different types of powerlessness in social and economic sphere of life. The lack of power or disempowerment reflects in their less educational level, less income, less control over their own income, less bargaining power, and less participation in decision-making than men. The difference in power relations between men and women, different gender roles, and violence against women and harmful traditional practices are responsible for the socio-economic marginalization of women in the country (Newaz, 2013). Due to gender discrimination, women are socialized differently and controlled by social norms, morals, beliefs and practices. So women are facing many constraints in their lives which create hindrance in their way of empowerment. The gender disparities in economic power are important factors to the poverty of women (Beijing Platform for Action, 1995). Economic power of rural women is an essential precondition for the elimination of poverty and the upholding of human rights (DFID, 2000).

1.3 Violence against Women

Due to existence of gender inequality and traditional social system, many women face violence. They have less power, narrow occupational choices and less income earning opportunity than men. They have to struggle to reconcile activities outside the home with their traditional roles. The behavior and traditional thought are responsible for the domination of the women by the men (Goswami, 1998). Women lead their lives continuously with the threat of domestic violence and this indicates the disempowerment situation of women in Bangladesh. The empowerment of women is necessary for establishing women's right, increasing self-esteem, raising awareness about gender discrimination and injustice to stop violence against women. The reasons of violence against women in Bangladesh are shown in Figure 1.6.

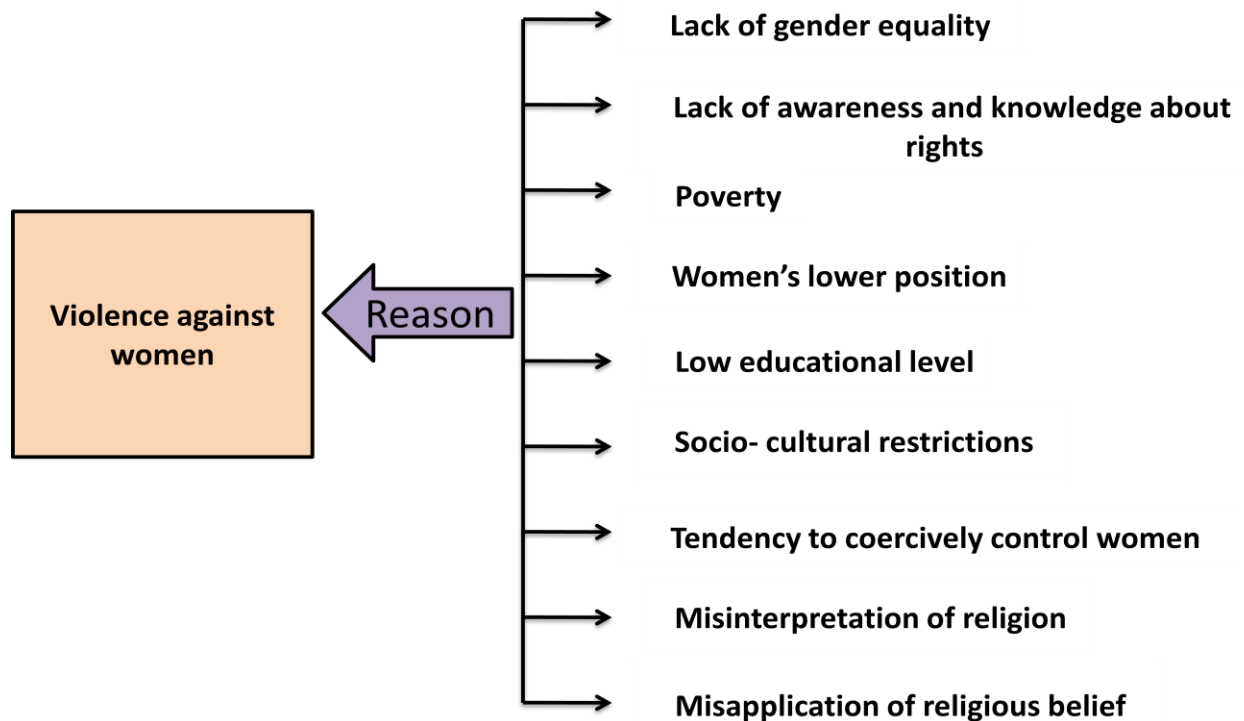


Figure 1.6 : Reason of violence against women in Bangladesh

Source: Drawn figure based on www.nwec.jp/jp/data/Rowshan_Bangladesh.pdf¹⁰

¹⁰ Eradication of Violence against Women (Bangladesh Perspective), Rowsan Ara Begum, Director General, Department of Women Affairs, Ministry of Women and Children Affairs, Government of the People's Republic of Bangladesh.

Violence takes place at home, workplace and also in public spaces. It is important to get a general idea of the nature, trends and dimensions of violence against women in Bangladesh. Table 1.2 shows the types and trends of violence in Bangladesh.

Table 1.2: Types and incidence of violence over the years

| Year | Types of violence | | | |
|------|---------------------------------------|---|--------------------------|---------------------------------|
| | Domestic violence (Number of case) | Dowry related violence (Number of case) | Rape (Number of case) | Acid attack (Number of case) |
| 2004 | 264 | 352 | 618 | 228 |
| 2005 | 333 | 356 | 585 | 130 |
| 2006 | 301 | 334 | 515 | 142 |
| 2007 | 283 | 294 | 436 | 95 |
| 2008 | 312 | 296 | 486 | 80 |
| 2009 | 281 | 285 | 446 | 63 |
| 2010 | 397 | 395 | 626 | 153 |

Note: Figures in the Table 1.2 indicates number (unit) of incidence/case of each violence occurred in different years

Source: Ain O Salish Kendra (ASK) Documentation Unit, 2011 and Odhikar, 2011

We see from the Table 1.2, in 2004 the reported incidence of domestic violence increased from 264 in 2004 to 397 in 2010. In case of dowry related violence, the reported incidence increased from 352 in 2004 to 395 in 2010. In Bangladesh, dowry is called “*Joutuk*”. Practice of dowry is illegal but very common in Bangladesh. Husband or husband’s family member demand dowry to the wife. When she fails to convince her parents to understand the dowry demand and parents cannot meet the demand due to poor socio-economic condition, torture begin at home towards her by husband or husband’s family members. Deaths of women also take place as a result of dowry demand (UNICEF, 2000). The reported incidence of rape 618 in 2004 and did not change in 2010. However, in case of acid attacks, we observe that from the Table 1.2, in 2004 this type of violence was 228 and 153 in 2010. Acid attack is the act of throwing acid normally in the face with intention to disfigure torture and kill. Since the

1990, Bangladesh has been reported the highest number of attacks for women in the world. Acid attack often occurs as revenge against women who reject a proposal of love and marriage. Such attacks are common in rural societies where there is a high level of gender inequality and women occupy a subordinate position to men. Another cause of acid attacks is conflict related to dowry. Besides the physical pain of acid attacks, the victims also suffer for the whole life, loss of self-esteem, inability to study or work, living in shame and disfigurement.

These figures (Number of case) in the Table 1.2 are only a part of the incidents that is reported to police but the real number will be much bigger in every year. The traditional value dependent society like Bangladesh, many incidents of violence against women is not reported to the police or in the media. Those women who are experiencing or have experienced domestic violence in the past are likely to be fearful or embarrassed to talk about their experiences. Often victims or victims' families do not want to make such incidents public because of social stigma (Begum, 2000). In addition, violence against women remains largely unreported because of existing norms and values regarding women's honor, and lengthy legal procedures that discourage women from seeking legal support. Moreover, legal process is complicated and the police are often influenced by political pressure and violators with the result that they do not take adequate action or remain inactive. During the period of legal litigation, women do not get legal protection of their choice, financial support to save them and her family members from starvation and attack of violence from her ex-husband. Poor and powerless people do not go the court. So many incidents are never reported.

Domestic Violence in Bangladesh¹¹

In Bangladesh, rural women faced domestic violence in the house. Domestic violence against women is mostly responsible for their disempowerment. Violence against women is associated with gender disparity. Domestic violence is one of the most common forms of gender-based violence experienced by women across the world (Nagaraja, 2013). Domestic violence results in violation of human right. It leads to the bad effect of the physical and psychological health and welfare of women and their children. In Bangladesh, domestic violence is not recognized as a serious social problem and society does not perceive domestic violence to be a serious crime. It is viewed as a personal matter that should be resolved privately within the family. As a result, law enforcement agencies are reluctant to get involved in cases of domestic violence and often women are victimized. In a patriarchal society like Bangladesh, male domination in the family is strong and men take the advantages of this right to exercise their authority. Domestic violence takes the forms like physical, psychological and economic violence (Figure 1.7).

¹¹ In Japan, domestic violence is referred to in the media as “DV” because no suitable word exists in the Japanese language. It was not even until 2001 that domestic violence was made a criminal offense. In a rare occasion, police releasing information about psychical and psychological abuse against women to the press. In 2001, Japan enacted its first law concerning domestic violence as a response to the increasing public awareness of domestic violence occurring behind closed doors, which is a promising step for the women’s rights movement in Japan. At least their voice is being heard and action is being taken. Reuters News Service in Tokyo reported on March 13, 2008 that number of reported domestic abuse cases increased by 15% from last year to a total of 21,000 assault cases. The police view this increase as a result of more women breaking their silence about assaults in the home. An increasing number of cases concern women who had preciously suffered in silence but have decided to come out to seek advice or support from the police. The number of reported cases of domestic violence in Japan rise to a record high last year - a sign that victims are overcoming cultural taboos that once forced them to stay silent. When Japan improved its system for reporting and investigating domestic violence in 2011, the number of cases reported increased dramatically. An additional 46.3 percent cases were reported after the National Police Agency changed its policies that year on domestic violence. In Japan, 26 percent of women were punched, kicked or shoved, with another 14 percent forced to have sex. 18% percent of Japanese women also suffer psychological abuse.

(<http://stanford.edu/group/womenscourage/cgi-bin/blogs/casestudiesviolence/2009/10/09/japan>

<http://www.theguardian.com/world/2006/mar/10/japan.justinmccurry>

<http://www.japantimes.co.jp/opinion/2013/07/06/editorials/violence-against-women/#.VsgU80A62KF>)

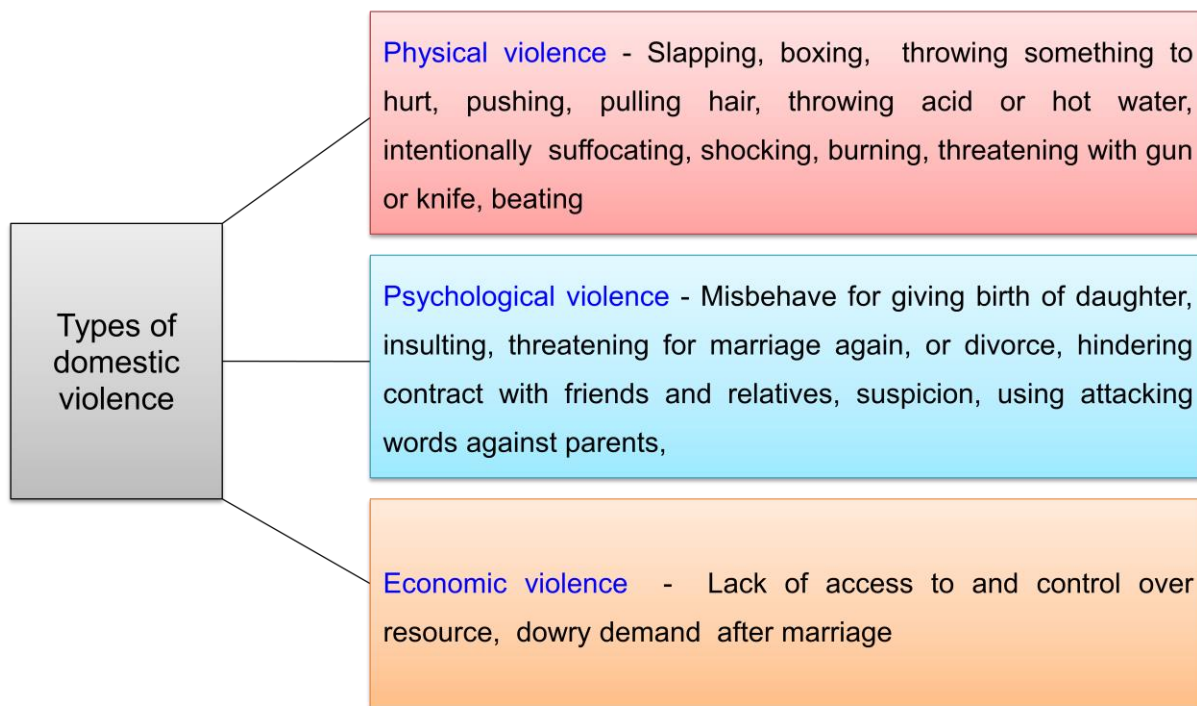


Figure 1.7: Different types of domestic violence which are faced by women

Source: Report on Violence against Women (VAW) survey (2011), Bangladesh Bureau of Statistics

Bangladesh Bureau of Statistics (BBS) carried out “violence against women” survey in 2011 and found very high rates of prevalence of Violence against Women (VAW). 87% of currently married women reported having experienced any type of domestic violence in the last 12 months. Psychological violence was the most common at 82%, followed by physical violence 67% and economic violence¹² 53% (Table 1.3).

¹² Economic violence as behavior that is coercive or unreasonably control wife by husband without her consent and in a way that denies her economic or financial autonomy. In a male dominated society, working women do not have any control on their own money, her husband dictates how to spend the money. Another example of economic violence is that husbands’ unwillingness to provide financial support for wife and children.

Table 1.3: Percentage of women who experienced domestic violence by husband and parents in law

| Period | Physical violence (%) | Psychological violence (%) | Economic violence (%) |
|---------------|-----------------------|----------------------------|-----------------------|
| Ever | 65 | 82 | 53 |
| Last 12 month | 33 | 72 | 32 |

Source: Report on Violence against Women (VAW) survey (2011), Bangladesh Bureau of Statistics

Poor women are more vulnerable as they often lack a household supportive umbrella to protect women. The poorer the women, the greater are the likelihood of abandonment, divorce and oppression. A large number of women are divorced and murdered for dowry¹³. Within the family, men have the monopoly over means of coercion and direct violence. The failure to fetch a large dowry to the husband and husband's family can make her vulnerable to divorce, torture, acid throwing and even murder¹⁴.

The need for challenging social norms, increasing women's economic benefits, creating an enabling environment, managing shocks, ensuring social safety, and improving human capital all are also required for gender equality and reduce violence. Strategies and actions not only enhanced women's capabilities, accessed to resources, opportunities but also addressed the barriers in social structures aimed at changing social norms, protecting their rights and reducing their vulnerability.

1.4 Importance of Women Empowerment in Bangladesh

In Bangladesh, women and girls are disproportionately affected by poverty, discrimination and violence. Women are not allowed to make decisions on spending about their household income. Increasing women's standard of life, improving nutritional status, decreasing mortality, and controlling over resources can enhance the overall socio-economic condition of the rural women and improving power of women can be a starting point for

¹³ Ain O Salish Kendro, a prominent human rights group in Bangladesh, reports that women were killed due to dowry-related domestic violence, respectively. The methods of death include suicides, fire and other forms of domestic violence. Source: https://en.wikipedia.org/wiki/Dowry_death#cite_note-UNBangladeshDowry-3.

¹⁴ <http://bangla.bdnews24.com/samagrabangladesh/article1112283.bdnews>.

empowerment. Participation of women in income generating activities contributes to enable households to cope with income shocks, to ensure food security, to reduce poverty and to prevent vulnerable households from falling into poverty. Feminization of the workforce is also a sign of improvement of women's position and opportunities in the society (Nagaraja, 2013) and will change women's role in the labor market as well as narrow the gender gap in employment and income, enhance social prestige, control over income and reduce feminized poverty. Faleye (1999) argued that women's development is reducing poverty by increasing productivity. Women's liberation is important for empowerment which can make better future of their lives by making independent choice. So it is necessary to empower women socially, economically and technologically to enable them to stand in society on their own with confidence. It includes control over resources, greater self-confidence and an inner transformation of one's consciousness that enables one to overcome external affairs (Sharma and Varma, 2008). Empowerment is the total sum of the changes needed for women to realize their full human rights. Their activities contribute to the transformation of the traditional values and gender roles of Bangladeshi women. For achieving empowerment, rural women have to change their traditional role in their activities. After involved with income generating activities, rural women have opportunity to be financially independent and have a voice in the family.

Role of women in working environment gives them opportunity to exercise their rights and responsibilities. It also reduces the possibility of domestic violence against women. Without the active participation of women, the incorporation of women's perspectives at the household level decision-making and development cannot be achieved.

Income generating activities are a feasible solution for empowering women to lead to economic independence, the opportunity to have control over their lives, self-reliance, self-determination, and a way to achieve economic empowerment for themselves. Bisht and Sharma (1991) argued that the entrepreneurship of women is considered to be an effective instrument to the economic development and empowerment of women. Entrepreneurship development among rural women helps to enhance their personal capabilities and increases decision-making status in the family and society as a whole. Participation in income generating activities helps to change the social and economic life of rural women. It empowers women and trains them to take active part in the socio-economic progress of the nation and make them self-disciplined (Pattanaik, 2013). However, it is potentially

empowering and liberating only if it provides women an opportunity to improve their well-being and enhance their capabilities.

In Bangladesh, rural women are vulnerable group and most of the violent behaviors against them are held by their husbands. Still now women are facing threats to their live, and well-being as a result of being over burdened with work and of their lack of power. Women's own knowledge and potentiality are unrecognized. Women's empowerment cannot be possible unless women come out from patriarchal social system. There is a need to reduce feminized poverty, promoting education of women, elimination of violence against women and change the attitude of the husband. Women have to achieve the power and autonomy to stand on their own legs. Raising awareness about their right and status is very much important for their empowerment. Women need to come out from patriarchal social system. They have to be changed at first and build up their strong inner mind to empower themselves. Women need to build up their capacity to enhance self-esteem and ability of independent right to make choice of their lives. Women have to take new challenge and develop self-confidence to overcome obstacle which hides their empowerment. Empowerment of women is important as goal and as means to achieve gender equality and women can stand alone against their poverty. The empowerment and autonomy of women and the improvement of their social, economic and health status may be important for reducing gender discrimination in the country. Thus the involvement of rural women in income generating activities is important for achieving their empowerment. Small-scale dairy farming may be one of the best ways to utilize the capabilities and empowerment of rural women in Bangladesh.

1.5 Review of Literature

There is a wide range of studies available in the context of women empowerment and this section deals with the review of literature of the works done related to the empowerment of women in different countries. Here, some interesting findings on the different aspects of women empowerment are mentioned. The section is divided into five aspects. The first part reviews all the articles relating to decision-making power of empowerment. Without improving decision-making power, a woman cannot achieve empowerment and she cannot do any work for bringing welfare for her in future. Decision-making power of women can play important role for women empowerment and

this aspect is related to modern dairy farming. When a woman involves with modern dairy farming activities, she has to take many decisions regarding farming activities like when to feed dairy cattle, how much feed, what types of feed they will provide, when vaccination is needed etc. In this way, she can improve her decision-making power through involving in dairy farming.

The second part reviews the articles regarding economic aspects of women empowerment. This aspect is also related to modern dairy farming. If a woman is financially self-sufficient, she can fulfill her personal willingness very easily. Independence in spending and saving money is very much important for women empowerment. Modern dairy farming can create this opportunity for rural women. But rural women have to improve their retaining capacity to control the money earned from farming. Women's improving controlling power helps women to control the household income.

The third parts will review social aspects of women empowerment. The social aspect of women empowerment is also related with modern and traditional dairy farming. A woman may involve in microcredit for starting dairy cattle and may take loan for running the dairy farming. Participation in microcredit program may help women to interact with other women and open the door for gathering knowledge about dairy cattle feeding, management and health care. Dairy farming also helps to increase their freedom of mobility. They have to go outside home for dairy cattle grazing, cutting grass and purchase of feed for dairy cattle from the shop. By doing all of these activities a rural woman can increase her mobility. When a woman improves her condition and also brings family welfare through rearing dairy cattle, her social status can also improve.

The fourth part will review the role of awareness in empowerment. If the woman is unable to raise voice and bargain power to protect violence, discrimination and injustice, she will be far away from empowerment. Modern dairy farming is also related with raising awareness among women. Involving in modern dairy farming can increase their thinking capacity and this will raise their consciousness of their right and injustice.

Finally fifth part will review the psychological aspects of women empowerment. Women's involvement in modern dairy farming may increase confidence level of rural women. Increasing confidence level of rural women may foster their empowerment process and able to break down traditional socio-cultural norms. Through involving

in modern dairy farming, rural women can get the scope to earn money and they may be able to improve their position in the family by improving controlling power. In this way, they will feel improved self-esteem.

1.5.1 Autonomy in Decision-making, Participation in Household Decision-making of Empowerment

Islam et al. (2012) found in their study that homestead poultry rearing among rural women in Bangladesh promoted empowerment by encouraging independent decision-making and involvement in family affairs. Samar Singhe (1993) reveals in his study women's decision-making power to control the resources is important for their empowerment. Control over resources helped women's empowerment as it provided them authority to make decisions about the use and supervision of those resources. It also played a vital role in determining a person's bargaining control within the household (Mishra and Dale, 1996). On this point, Orso and Fabrizi (2016) state that improving bargaining and decision-making power within the household lead to better performance in terms of empowerment. Shahidul (2013) argue women's decision-making power can reduce the rate of school dropout of their daughter. Anwar et al. (2013) emphasized women's enhanced role in household decision-making had its effect relevant to achieving gender equality. Women's autonomy increases their role in decision-making at household level also increases. On this point, Mainuddin et al. (2015) state women's empowerment in decision-making reflects the acceptance of women's opinion in the family and dependence on women household need. Women's decision-making ability is an important indicator of women's autonomy and empowerment as found in many studies (Bloom et al., 2001; Basu, 2006; Dyson and Moore, 1983). So, decision-making power of women is necessary for women empowerment. That means higher the level of autonomy in decision-making there is more chances of a woman to become more empowered.

1.5.2 Income and Women Empowerment

There are a number of studies which related to income and independence in spending money of women. Thapa and Gurung (2010) concluded in their study that engage in income generating activities is the most important way to empower women as it will reduce dependency upon the family. Sultana and Hossen (2013) found that employed women are more empowered than unemployed women and that increasing household income also have a

positive effect on women empowerment. Moreover, Blumberg (2005) revealed the women who are earning have at least some control over income than those who are not earning. Women's economic empowerment can be a successful key for reducing gender discrimination in the family and society. Ali et al. (2014) analyzes impact of small business firms on women's economic empowerment. Using primary data it was found that small business firms have positive impact on women's economic empowerment. These firms provided employment opportunities, income to the women and facilitated women's economic empowerment. Gupta and Yesudian (2006) highlighted in their study that those women who work and earn cash have high autonomy in spending money than the non working women. From the above findings of women empowerment as we have seen that earning potentiality and independence in spending money are important for women's empowerment. Through women's engagement in income earning activities, they can overcome obstacles, reduce dependence on others and stand on their own legs.

1.5.3 Participation in Microcredit

Several recent studies have studied the impact of participation of women in microcredit on women empowerment (Sarkar and Baishya, 2012; Prabhakara, 2012; Hosseini et al, 2012; Gowda and Manjula, 2012; Shanthi and Ganapathi, 2012; Das, 2012). Most of the studies put forward a view that microcredit facilitates women's empowerment. Hashemi et al. (1996) found that the Grameen Bank and Bangladesh Rural Advancement Committee (BRAC) have had significant positive effects on women's empowerment. They have found microcredit has indeed reduced domestic violence in Bangladesh. Ravichandra (2014) studied on impact of microcredit on the women's empowerment in Kerala. The study found that there was a high perception of social empowerment with participation in microcredit. Most of the respondents (more than 80%) perceived improvement in the aspects of social empowerment. The highest perception of improvement was the status of women in the society. The study concluded that participation in microcredit helped women to become more creative, intelligent, innovative, proactive, inclined toward planning, and better organized. In addition, Cheston and Kuhn (2002) found that microcredit program provided women the tools and skills, increased women's knowledge and widen their social networks though increasing mobility. On this point, Modi et al. (2014), Morduch (1999) and Arrora (2011) discuss

in their study that microcredit has been contributing to women's empowerment to improve their economic condition, family development for getting credit for housing repairs and marriage of their children.

All these studies have highlighted the potential of microfinance institutions and microfinance services as a means to reduce the financial constraints of women especially in rural areas. From the above literature, it can be said that participation in microcredit programs are important for women's empowerment. Through participation in microcredit, rural women can improve their autonomy, social status and freedom of mobility.

1.5.4 Awareness in Women Empowerment

Parveen (2007) found that the majority of the rural women were not aware of gender inequality because of traditional beliefs kept them in the shadow of their fathers, husbands and sons. The subordination of women in Bangladesh is a consequence of the existing patriarchal social system which determines power relations within households and the bargaining power of household members through the organization of the family, marriage, inheritance patterns, gender segregation and associated ideologies (Kabeer 1999). Women's powerlessness arises from their low educational level, lack of awareness, and poor knowledge (Lazo, 1995). Gupta and Yesudian (2006) and Hazarika (2011) state that discrimination against women due to lack of awareness among the women and education violate their basic human right and hampers women's abilities to realize their full potential suggested women's increasing educational level and awareness help to protest domestic violence against them. So we have seen that for reducing domestic violence against women and achieving gender equality, it is important to create awareness among the women about their right and injustices.

1.5.5 Self-confidence and Self-esteem aspects of Women Empowerment

A number of studies have been conducted which focus on self-confidence and self-esteem of women empowerment. Mazumdar and Ahmed (2015) reveals that women's involvement in small-scale business played an important role in ensuring the survival of poor household and increasing women's confidence, skills and socio-

economic status. Parveen and Leonhauser (2004) found in their study that 41% of the wives have bad relationship¹⁵ with their husband that might effect on the confidence level of women. As rural women started to earn and contribute to their family expenses, their husband's behavior towards them has changed considerably. The study also indicates that the living standard of their family has improved. They are asked by their husbands to take part in making family decisions (Mahmud and Sultan, 2010). Jan and Ashraf (2008) conducted study on the assessment of self-esteem among women. Self-esteem has enormous influence on mental health of women. Self-esteem comprises self-worth and self-image which affects women's adjustment in various spheres of life. They analyzed the relation of age, family income and family type¹⁶ with self-esteem among women. The study reveals women in nuclear families have high level of overall self-esteem and in joint family women have medium level of overall self-esteem. Family income has also show significant association with women's self-esteem in family relations. Husbands may give freedom and support their wives, this will not only bring women empowerment but also improve spousal relationship. So, husband's positive attitude towards their wives is important for women's empowerment. These literature reviews suggests that increasing confidence and self-esteem may facilitate women's empowerment.

The above review of literature explained the different study related to women empowerment on different aspects (decision-making, economic, social, legal and psychological). Now we will see how different author define women's empowerment in a different way.

1.6 Definition of Women's Empowerment

United Nations International Conference on women in 1995 held in Beijing stressed on the need to reduce gender inequality and to increase women empowerment. Women's equal participation in decision-making is not only a demand for justice but can also be seen as a necessary condition for women's interest to be taken into account. Without the active participation of women and the incorporation of women's perspectives at all levels of decision-making, the goals of equality, development and peace cannot be achieved. The human development report

¹⁵ Here, bad relationship means there is no harmony between couples in terms of intimacy, cooperation, mutual understanding and respect.

¹⁶ Here, family type indicates nuclear family and joint family.

(1995) also emphasize peoples participation in decision-making process that shape their lives and empowerment is one of the four essential components of the human development paradigm, the others being productivity, equity and sustainability. Alsop et al. (2006) argue empowerment as the process of enhancing an individual's or group's capacity to make effective choices, that is, to make choices and then to transform those choices into desired actions and outcomes the full participation and partnership of both women and men are necessary in productive and reproductive life, including the sharing of responsibilities for the care and nurture of children as well as the maintenance of the household. Mahmud and Johnston (1994) insist that empowerment leads to increase autonomy and decision-making power and provides women with an alternative power base that is independent of the domination of men. Rahman et al. (2009) used several indicators for defining women empowerment such as ability to participate in decision-making, capability to take independent decision, and freedom of mobility. Roy and Niranjana (2004) insist empowerment is associated with education and work participation of women, and female autonomy such as decision-making, mobility that can be viewed both as an outcome and a process. In accordance with Jejeebhoy (2000), the ability to make choices can be a function of several factors, such as women's autonomy in decision-making, freedom of movement and power relations with their spouse. Holcombe (1995) has defined women's empowerment as the sharing control and ability to participate in decisions regarding the allocation of resources. The above literature have emphasized important elements on defining women empowerment like autonomy in decision-making, participation in decision-making, freedom of mobility. Based on these indicators, in this thesis we will use these indicators to define women's empowerment for the study.

According to United Nations Population Network (1995) insist women's empowerment as women having awareness of right and injustice, options and power to practice them, control over their own lives, and influence over their direction to social change. Batiwala (1994) argue that women empowerment is not only feelings of greater extent of control over lives but also increasing self-confidence, awareness that enable one to overcome external barriers to access resource and change traditional ideology. On this point, Longwe (2001) state increasing awareness is an essential step in women's empowerment. Understanding of the difference between gender roles are socially created and changed to promote gender equality. Thus, awareness building about women's situation, discrimination,

rights and opportunities is a step towards greater gender equality (Karl, 1995). Some important indicators are derived from the above definition of empowerment of women such as awareness and self-confidence.

In some of the definition of women empowerment, economic independence and income earning potential have been emphasized. According to Bharthamma et al. (2006), empowerment of women is defined as equipping women to be economically independent. They should have positive self-esteem to enable them to face any difficult situation and they should be able to participate in development activities. In addition, Suguna (2006) states economic empowerment is the initial aspect of women development. The economic empowerment indicates income earning potentiality through access to financial resources inside and outside of the household. It is also linked with reducing vulnerability of rural poor women in emergency situation such as famine and food crisis. In the same way, Banu et al. (2001) conceptualizes empowerment as the capacity of women to reduce their socio-economic vulnerability and their dependency on their husbands or other male counterparts, in terms of their ability to become involved in income generating activities and freely spend the income thus generated over which they have the right, increase their contribution to household expenditure and household decision-making. Moser (1993) emphasizes the importance of women's self-reliance and internal strength. Keller and Mbwewe (1991) and Rao and Kelleher (1995) argue that by increasing their self-sufficiency, women can assert their independent right to make choices and to control resources which will assist them in eliminating their own subordination. Mayoux (2000) applies the term economic empowerment as one of the defining dimensions of women empowerment. Female economic empowerment usually indicates increasing access of women to financial resources, income generating assets or activities, savings, increase financial decision-making power, and more economic independence.

Littlefield et al. (2003) hypothesize that women can be empowered when they have access to micro-credits which give them the inspiration to be more self-assured and be more proactive. Mayoux (2006) argue that participation of women in micro-credit not only give credit and saving to women but also give the power to contribute in her family expenditure by which they are being empowered. On this point, Alhassan and Akudugu (2012) discuss participation in micro-credit has the power to improve the productive capacity and development in income generating activities to the women and facilitate their empowerment. Microcredit helps women to meet their practical needs and increase efficiency in their traditional roles which lead to increase self-esteem (Swain and

Wallentin, 2007). Hashemi, et. al. (1996) insisted women's participation in microcredit programs increased their freedom of mobility to visit market place for buying products, medical center for medication, and cinema hall for watching movie, other houses in the village, and outside village for more relations. Empowerment of rural women in Bangladesh through participation in microcredit can reduce gender inequality and improve their social status (Roy, 2013). These literatures have emphasized on participation in microcredit, freedom of mobility, self-esteem and social status for defining empowerment. So, we will use these indicators to define women's empowerment for this study

The above definition of women empowerment shows different meaning of empowerment in differences views. A review of all these definitions of women empowerment suggests that empowerment has certain key indicators. These are independence in decision-making, involvement in major household decision, income earning potential, independence in spending money, social status, and freedom of mobility, participation in microcredit, self-confidence and self-esteem. All these indicators are applicable at the individual level to understand the process of empowerment.

Based on these important indicators derived from definitions given by different authors on women empowerment, it will be necessary to construct the concept of women empowerment to be used in the study. In this study our definition of women's empowerment is as follows:

“Woman empowerment comprises of woman's capability to make independent decision and participation in household decision, increased self-confidence, self-esteem, freedom of mobility, awareness about their right and injustices, income earning potential and independence in spending money, participation in microcredit and finally improved social status”.

1.7 Research Question and Hypothesis

The research question of the study is “What is the relationship between empowerment of women and modern dairy farming?”. This study attempts to explore the women's empowerment through modern dairy farming in a village of Mymensingh district in Bangladesh. For this purpose this study chooses V1 (M), V1 (T) and V2 (T).

There are three hypothesis of the study which is as follows:

- i) Modern dairy farming may have positive impact on improving the economic situation of rural women.
This will be described in chapter 3.
- ii) Improving economic situation can be expected to increase overall empowerment of rural women and this will be discussed in chapter 4.
- iii) Modern dairy farming also may have important effect on the empowerment of rural women in the study area which will be explained in chapter 5.

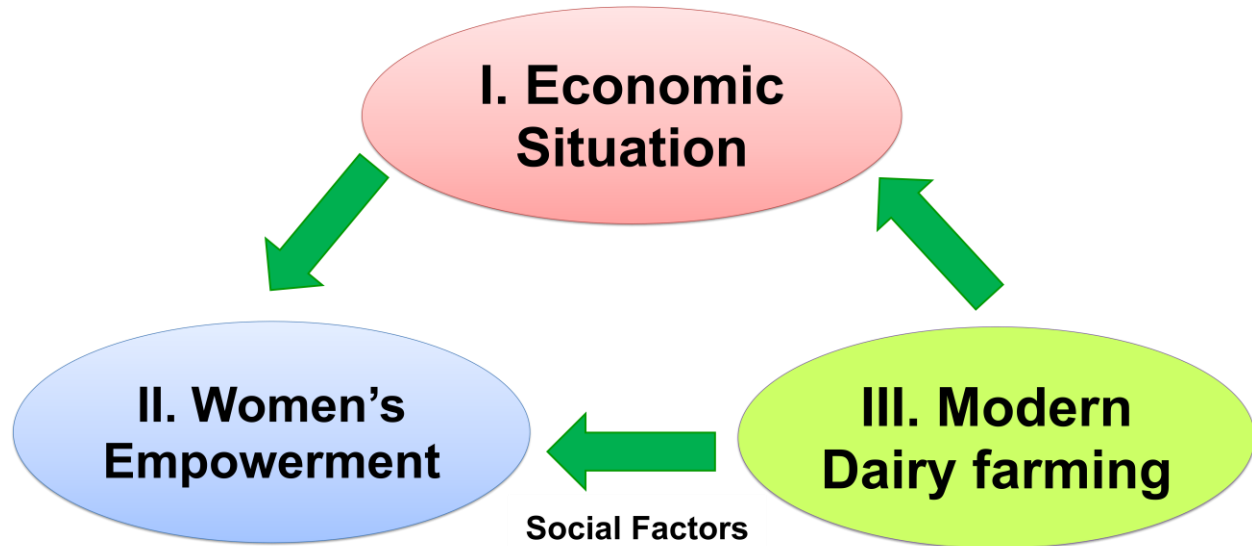


Figure 1.8: Hypothesis of the study

1.8 Objectives of Dissertation

The general background information of V1 and V2 location of the study area and life style of the respondents, dairy farming system and poverty profile will be described to obtain whole view of the study area. V1 adopted modern technology of dairy farming (crossbred cattle) and also reared traditional dairy cattle (local cattle).

On the other hand, V2 is based on traditional dairy cattle (local cattle). The villages of V1 (Modern), V1 (Traditional) and V2 (Traditional) were chosen to compare the empowerment of rural women through modern and traditional dairy farming in the study area. On the basis of definition of women empowerment, several empowerment indicators have been used to measure the level of empowerment among women living and working on small-scale dairy farms in V1 (Modern), V1(Traditional) and V2 (Traditional). In this study, women's empowerment index will be constructed to quantify the empowerment index to get comparative feature of V1 and V2. Furthermore, the study will discuss how extent of contribution of women in dairy farming activities affect women's empowerment in V1 (Modern), V1 (Traditional) and V2 (Traditional).

Thus, the present study is undertaken to fulfill the following objectives:

- i. To investigate the background feature of selected two villages of Mymensingh district, Bangladesh;
- ii. To measure women's empowerment through small-scale dairy farming and factors affecting women's empowerment;
- iii. To analyse the extent of contribution of rural women in dairy farming activities and women's empowerment;
- iv. To develop appropriate policies in fostering women's empowerment in Bangladesh;

The findings of this study will contribute to the suggestive applicable implications in development and empowerment of rural women in Bangladesh. Rural women are not treated as only housewife, they have potentiality to develop themselves. Through small-scale dairy farming, they are able to find out the way to empower themselves, establish their own right in the family and society, and ultimately they are able to enjoy their freedom and happy life.

The study consists of six chapters. Chapter 1 introduces the current situation of women and empowerment in Bangladesh. Dairy farming in Bangladesh is provided in Chapter 2. General description/ background of the study areas are presented in Chapter 3. In Chapter 4, findings about women's empowerment through small-scale dairy farming in selected villages are presented. Extent of contribution of rural women in dairy farming activities for

women's empowerment in selected villages are discussed in Chapter 5. Finally, Chapter 6 presents conclusions of the study and also contains policy recommendation for women empowerment in Bangladesh.

CHAPTER 2

DAIRY FARMING IN BANGLADESH

2.1 Overview of Bangladesh

Bangladesh emerged as an independent and sovereign country in 1971 after nine months liberation war against Pakistan. Victory day (Bengali: *Bijôy Dibôś*) is a national holiday in Bangladesh celebrated on December 16. The 1971 Bangladesh Liberation War (*Muktijuddho*) was a war of independence and established the sovereign nation called Bangladesh known as “Peoples Republic of Bangladesh”¹⁷.

Bangladesh is a low-lying country located in the South Asian region and surrounded by India and Bay of Bengal. Map of Bangladesh is shown in Figure 2.1.



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Official Name: *Gano Projatontri Bangladesh* (The People's Republic of Bangladesh)



Figure 2.1: Map of Bangladesh

Source: Google map

Bangladesh ranks 8th position in the list of developing countries by population with an estimated population of 162 million. It is a small country and covers an area of 130,172 square kilometer. It is one of the most densely populated countries in the world.

Table 2.1 shows Gross Domestic Product (GDP) per capita in Bangladesh from 2006/07 to 2014/15. It was observed from Table 2.1 that Gross Domestic Product was 511.33 US\$ per capita in 2006/07 and 750.42 US\$ per capita in 2014/15. GDP per capita was an increased trend from 2006/07 to 2014/15. GDP growth rate per capita was 5.3% in 2006/07, reduced to 4.8% in 2014/15. During this period GDP growth rate per capita was fluctuating.

Table 2.1: Gross Domestic Product per capita of Bangladesh in different years

| Year | GDP per capita US dollar | GDP growth rate per capita (% per year) |
|---------|--------------------------|--|
| 2006/07 | 511.33 | 5.3 |
| 2007/08 | 541.48 | 5.8 |
| 2008/09 | 568.18 | 4.8 |
| 2009/10 | 590.72 | 3.9 |
| 2010/11 | 616.94 | 4.4 |
| 2011/12 | 649.36 | 5.2 |
| 2012/13 | 683.51 | 5.3 |
| 2013/14 | 715.83 | 4.7 |
| 2014/15 | 750.42 | 4.8 |

Source: World Bank (2015), <http://www.tradingeconomics.com/bangladesh/gdp-per-capita>
and <http://data.worldbank.org/indicator/NY.GDP.PCAP.KD.ZG>

In Bangladesh, Human Development Index (HDI) was 0.570. It ranks 142 of 188 countries in the world as medium human development country (Human development report, 2015). The HDI is a tool developed by the United Nations to measure and rank countries level of social and economic development. The HDI is an average measure of basic human development achievement in a country. The HDI makes it possible to track changes in development level over time and to compare development levels of Bangladesh with different countries. Neighboring country India ranked at 130 (HDI 0.609), Nepal at 145 (HDI 0.548), Pakistan at 147 (HDI 0.538) and Sri Lanka at 73 (HDI 0.757). Bangladesh has shown a positive trend in human development for the last few years. Between 2010 and 2014, Bangladesh's HDI value increased from 0.546 to 0.570 with an average annual HDI growth 1.07(Table 2.2). This indicates Bangladesh's progress in the HDI indicators. The HDI index is created to emphasize that people and their capabilities are the ultimate criteria for assessing the development of a country.

Table 2.2: Human Development Index (Bangladesh)

| Year | HDI | Average annual HDI growth |
|------|-------|---------------------------|
| 2010 | 0.546 | 1.07 |
| 2011 | 0.559 | |
| 2012 | 0.563 | |
| 2013 | 0.567 | |
| 2014 | 0.570 | |

Source: Human Development Report (2015)

The Gender Development Index (GDI) measures gender gaps in human development achievements by accounting for disparities between women and men. The GDI is the ratio of the HDIs calculated separately for females and males using the same methodology as in the HDI. It is a direct measure of gender gap showing the female HDI as a percentage of the male HDI. The Gender Development Index (GDI) is an index designed to measure of gender equality. The GDI shows how many women are lagging behind their male counterparts in Bangladesh. Table 2.3 shows Bangladesh's GDI value relative to other countries.

Table 2.3: Bangladesh's GDI value relative to other countries

| Country | GDI | GDI group | HDI | | HDI Rank |
|---------------|-------|-----------|-------|-------|----------|
| | | | F | M | |
| United States | 0.995 | 1 | 0.911 | 0.916 | 8 |
| Japan | 0.961 | 2 | 0.870 | 0.905 | 20 |
| Sri Lanka | 0.948 | 3 | 0.730 | 0.769 | 73 |
| Bangladesh | 0.917 | 4 | 0.541 | 0.590 | 142 |
| India | 0.795 | 5 | 0.525 | 0.660 | 130 |

Note: Group 1 (comprises countries with high equality), Group 2 (comprises countries with medium to high equality), Group 3 (medium equality), Group 4 (medium to low equality), Group 5 (low equality) of HDI achievement between women and men.

Source: Human Development Report, 2015

From the Table 2.3 we can see that Bangladesh's Gender Development Index (0.917) is lower than United States, Japan and Sri Lanka. Still now Bangladesh cannot progress in Gender Development Index compared with other high valued GDI country. To eliminate gender discrimination and inequality, the government should take necessary steps especially for women including poor elderly women, working women, widows and women abandoned by their husbands.

2.2 Importance of Livestock in Bangladesh Economy

2.2.1 Share of Livestock in GDP

Total contribution of agricultural sector in GDP is about 12.29 % in 2014 (Bangladesh Economic Review, 2015)¹⁸ of which animal farming sub-sector contributes 1.73% (Table 2.4).

Table 2.4: Contribution of agriculture and its sub-sector to GDP (Base year 2005-06)

| Year | Agriculture | (in percentage) | | |
|---------|-------------|-----------------|------------------------------|--------|
| | | Sub-sector | | |
| | | Crop | Animal farming ¹⁹ | Forest |
| 2005/06 | 15.33 | 11.10 | 2.38 | 1.86 |
| 2006/07 | 15.17 | 11.08 | 2.27 | 1.83 |
| 2007/08 | 14.89 | 10.88 | 2.19 | 1.82 |
| 2008/09 | 14.58 | 10.63 | 2.13 | 1.82 |
| 2009/10 | 14.65 | 10.79 | 2.06 | 1.81 |
| 2010/11 | 14.27 | 10.50 | 1.98 | 1.79 |
| 2011/12 | 13.70 | 10.01 | 1.90 | 1.78 |
| 2012/13 | 13.09 | 9.49 | 1.84 | 1.76 |
| 2013/14 | 12.81 | 9.28 | 1.78 | 1.74 |
| 2014/15 | 12.29 | 8.79 | 1.73 | 1.72 |

Source: Bangladesh Economic Review (2015)

The share of animal farming sub sector in GDP is small; it makes tiny contribution towards meeting the requirement of daily essential animal protein. Although livestock sector also play very small role in GDP but this

¹⁸ Economic Adviser's Wing, Finance Division, Ministry of Finance, Government of the People's Republic of Bangladesh.

¹⁹ Animal farming or livestock farming includes cattle, buffalo and goats. Here, we use data on animal farming because there is no data available for dairy farming.

sector has potentiality and prospects for employment opportunity, income generation, poverty reduction and empowerment of rural women in Bangladesh which will be discussed in the next section.

2.2.2 Employment Opportunity

Bangladesh economy depends on agriculture. Agriculture employs largest portion (45%) of the people (Table 2.5) among the three main sectors of economy in Bangladesh. Despite steady progress towards industrialization, agriculture remains the most important sector in Bangladesh in terms of employment. The development of agriculture sector is very much urgent for poverty reduction, food security and sustainable development of our country. Improvements in agricultural sector are also necessary for developing nutritional outcomes.

Table 2.5: Distribution of employed persons by broad economic sector

| Sector | Employed person (Percentage) |
|-------------|------------------------------|
| Agriculture | 45 |
| Service | 34 |
| Industry | 21 |

Source: Labor force survey, 2013

Cattle of Bangladesh are an inseparable part of the agricultural farming systems (Rabbani et al., 2004). Attainment of high growth rate in agricultural sector has the potential to get smallholder producers and create an opportunity for employment and income generation through involve in milk processing and marketing. Dairy cattle are important for employment opportunity, additional income and improving the livelihood. The availability of this form of traditional self-employment (household cattle rearing) to rural dwellers, particularly women, is important where there is scarcity of alternative income generating opportunities. Household cattle rearing widen the scope for the poor women. Table 2.6 shows employment of men and women in livestock farming. It was observed that in 1988, 43.18% women and 28.70% men were involved in livestock farming. Women's participation in livestock farming has increased in 2008 (68.93%) and 34.52% men involved in livestock farming. There is an increasing trend

of women's involvement in livestock farming compared to men (Table 2.6). That means in rural area of Bangladesh, normally women conduct the livestock farming. The livestock sector offers important employment and livelihood opportunities for the rural women, many of whom dairy farming among the livestock sector as a main livelihood option.

Table 2.6: Employment of men and women in livestock farming

| | 1988 | 2000 | 2008 |
|-------|-------|-------|-------|
| Women | 43.18 | 50.77 | 68.93 |
| Men | 28.70 | 25.09 | 34.52 |

Source: Jaim and Hossain, 2011

2.2.3 Nutritional Contribution of Dairy Milk

Milk is one of the most nutritious drinks. Milk is the important source of vital vitamins, minerals, proteins and also source of nutrition. In Bangladeshi 48% of children are chronically malnourished and 30% of the total population is below the minimum level of dietary energy consumption (Curtis, 2011). The mortality for children under 5 years in Bangladesh was 53 per 1,000 live birth and nearly 45 percent of these child deaths are responsible for under nutrition (NIRPOT et al., 2013). Dairy cattle can play a leading role to build a healthy child folk through reducing malnutrition of the country's people.

Dairy cattle are the source of protein and nutrient which are essential for health and growth of human body. Animal protein in the form of milk and meat is extremely important for the proper physical growth of human being. Proteins are the fundamental building blocks of muscles, skin, hair, and cellular components. Proteins are needed to help muscles relax, and help repair damaged tissues. They play a critical role in many body functions as enzymes, hormones, and antibodies. Proteins may also be used as an energy source by the body. Cow milk is extremely rich in iodine. It has good amount of minerals like calcium, phosphorus and protein. Cow milk has vitamins such as vitamin D, B12 and B2. 100 grams of cow milk has 56 calories. Cow milk is beneficial for healthy bones, dental health, and obesity reduction in children, protection from thyroid, and protection of the heart. The energy in milk comes from its

protein, carbohydrate and fat content. Carbohydrates are the primary source of energy for activity. Fat is the main storage form of excess energy in the body²⁰.

2.2.4 Role of Dairy Cattle in Rural Life

The dairy cattle play a significant role in maintaining a strong agricultural economy of Bangladesh. Rural women consider dairy cattle as their asset because of its huge implication in their daily rural life. The cattle are of multipurpose in providing milk, draught power, meat and cow dung as fuel and organic fertilizer, biogas, transportation, bones, hides and skin, and strongly linked with the livelihood of rural people (Figure 2.2).

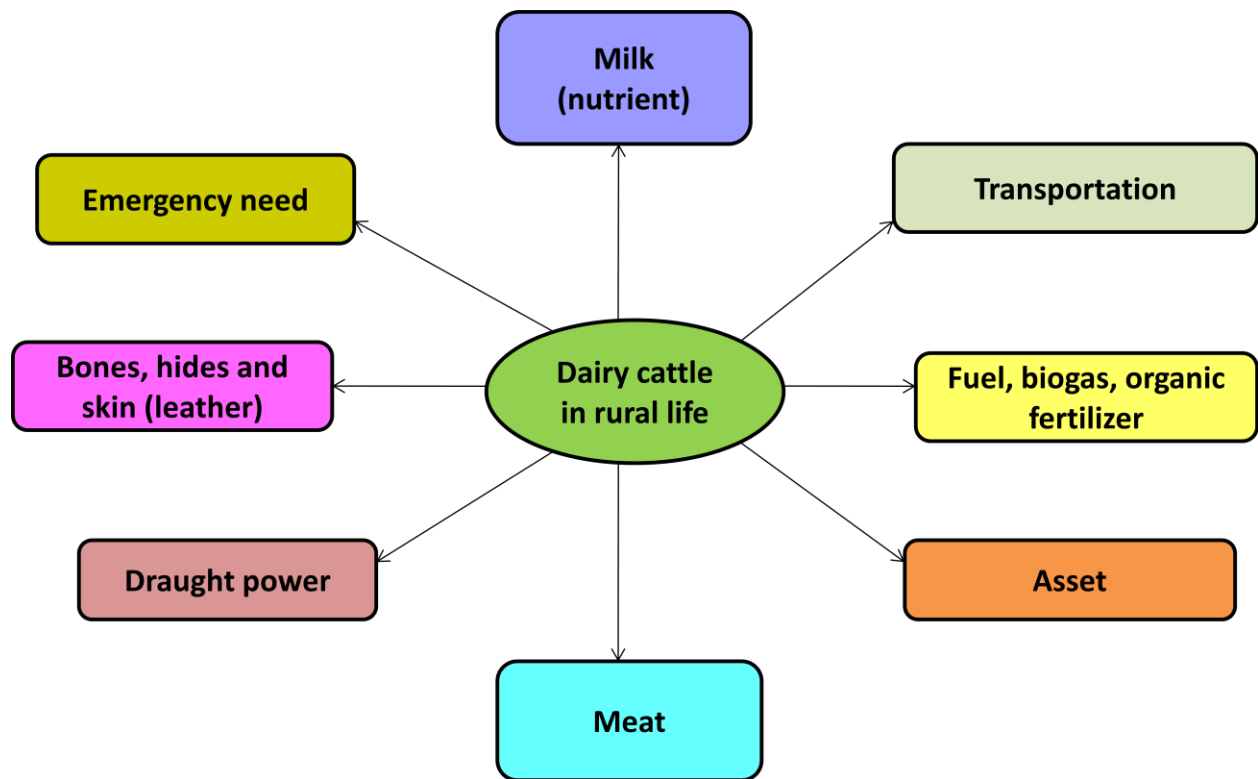


Figure 2.2: Role of dairy cattle in rural life

Source: By the author

²⁰ <http://milkfacts.info/Nutrition%20Facts/Nutritional%20Components.htm>

These products may provide a reserve to poor farmers that can be converted to cash in times of need which overcome an unforeseen crisis.

Dairy farming encompasses animal health care and welfare, and effective rearing is necessary for the expansion of farming. Draught power for tilling the land, the use of cow dung as manure and fuel, and animal power for transportation play role for the economy and rural life. Dairy farming is the most potential sector within agriculture and a part of mixed farming system²¹ in Bangladesh (Saadullah, 2001). Cow dung is essential material for soil fertility maintenance. Dried cow-dung is being used as a fuel for cooking purpose. Dairy farming provides cash income through sales of cow dung. This is also used to produce biogas²².

Milk production in rural areas generates supplementary income for the family and uses this income for various purpose of their daily life.

Moreover, the bones, horns, and hooves have economic value. Bangladesh earns' foreign exchange by exporting crushed and uncrushed bones every year. Cattle are the major skin and hide producing species. Hides and skins are mainly used as raw materials in different industries. Table 2.7 shows that livestock sub sector generates foreign exchange through the export of hides and skins, leather products, bones, horns, hooves. Notable leather-made commodities are shoes, suitcase, bags, etc.

Table 2.7: Leather and leather manufacturing export earnings

| Year | Total export(\$ million) | Export of leather (\$ million) | % of total export |
|------|--------------------------|--------------------------------|-------------------|
| 2009 | 15565 | 177 | 1.14 |
| 2010 | 16597 | 226 | 1.36 |
| 2011 | 22928 | 298 | 1.30 |
| 2012 | 24288 | 330 | 1.36 |

Source: Bangladesh Economic Review (2013)

²¹ Mixed Farming is a system of farming where crops, livestock are raised in a farm. In other words, mixed farming utilizes cropping patterns which involve the raising of crops, animals, and or trees. Napier grass production can play an important role in mixed farming system. Farmers can be benefited more by selling the grass as well. Napier grass can easily meet the roughage demands of crossbred dairy cow as well as local (<http://dx.doi.org/10.4172/2332-2608.1000156>).

²² https://energypedia.info/Biogas_Technology_in_Bangladesh

2.3 Present Condition of Dairy Sector in Bangladesh

2.3.1 Dairy Cattle and their Population in Bangladesh

Cattle among other livestock species available are the most versatile component in relation to existing farming system in Bangladesh (Kamal, 2010). The dairy sector in Bangladesh is mainly operated by the private entrepreneurs. Bangladesh has one of the highest cattle densities: 145 large ruminants per square kilometer compared with 90 for India, 30 for Ethiopia and 20 for Brazil (National Livestock Development Policy, 2007)²³.

The population of rural area is mostly poor and they keep cattle in order to produce milk for family consumption and sale. The raising of cow is done in a very traditional way without any special care but in case of modern dairy cattle (crossbred) require regular care. In Bangladesh, dairy farmers are mostly small farmers (90% farmers have 1-3 cows), medium farmers are 6% (3-10 cows) and large farmers are 4% who have more than 10 cows²⁴. Cattle feed primarily by grazing on pasture but in modern dairy farming their diet is ordinarily supplemented with prepared animal feeds.

Dairy development through increasing cattle productivity can play a vital role in improving rural economy of the developing countries like Bangladesh. In order to promote dairy cow rearing and to increase milk production to meet increased demand, at present, government organization such as Department of Livestock Service (DLS), and several non-government organizations (NGOs) are providing facilities and services such as artificial insemination, supplementary feed and medication to the poor farmers.

Figure 2.3 represents the trend of cattle production in Bangladesh from 2002-03 to 2013-14 with an average growth rate 0.39%. It was observed from the Figure 2.3 that there was an increased trend of cattle population in this period due to increase in income and rapid growth in demand for dairy products.

²³ Government of the People's Republic of Bangladesh, Ministry of Fisheries and Livestock

²⁴ Dairy in Bangladesh- Board of Investment. boi.portal.gov.bd/...bd/.../valueproposition_Dairy.pdf

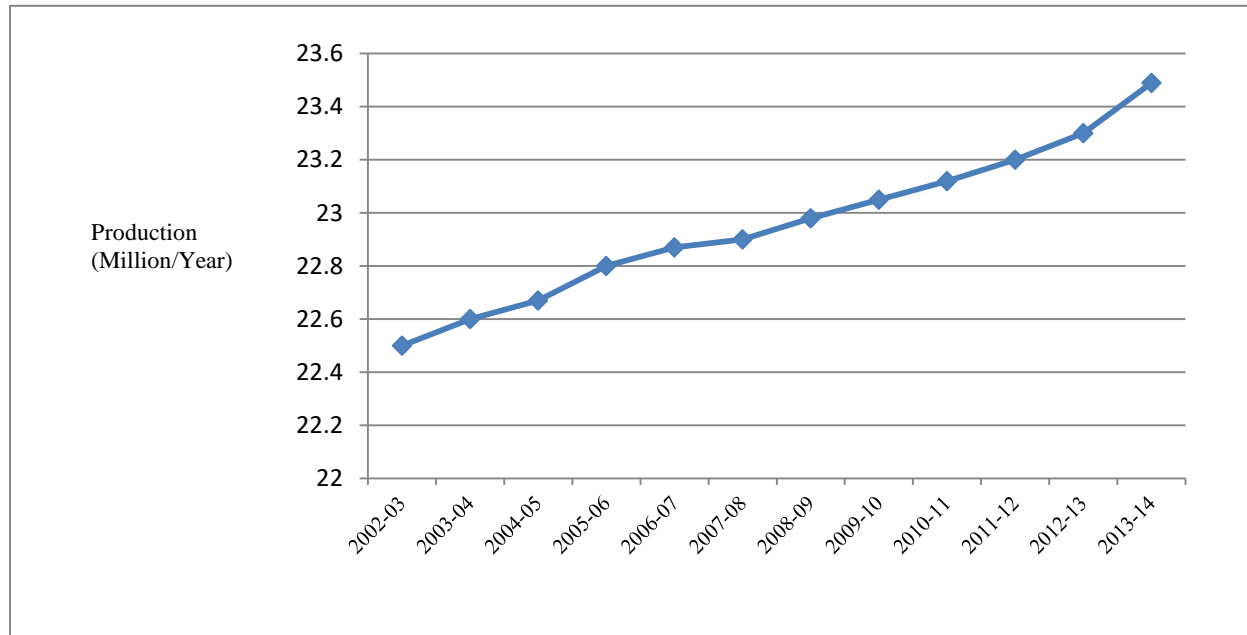


Figure 2.3: Trend of cattle production in Bangladesh

Source: Department of Livestock Service (2014)

2.3.2 Milk and Meat Production in Bangladesh

Milk and meat production is one of the most important economic activities in Bangladesh. Most of the milk is produced by the rural households. The number of milking cow was 3.75 million which was 35 percent of all cattle population of Bangladesh (Islam et al., 2010). The production of animal protein like milk and meat has been increasing over the past several years. As a result, per capita availability of animal protein is rising. The production of milk and meat during the period from 2006-07 to 2013-14 are shown in Figure 2.4.

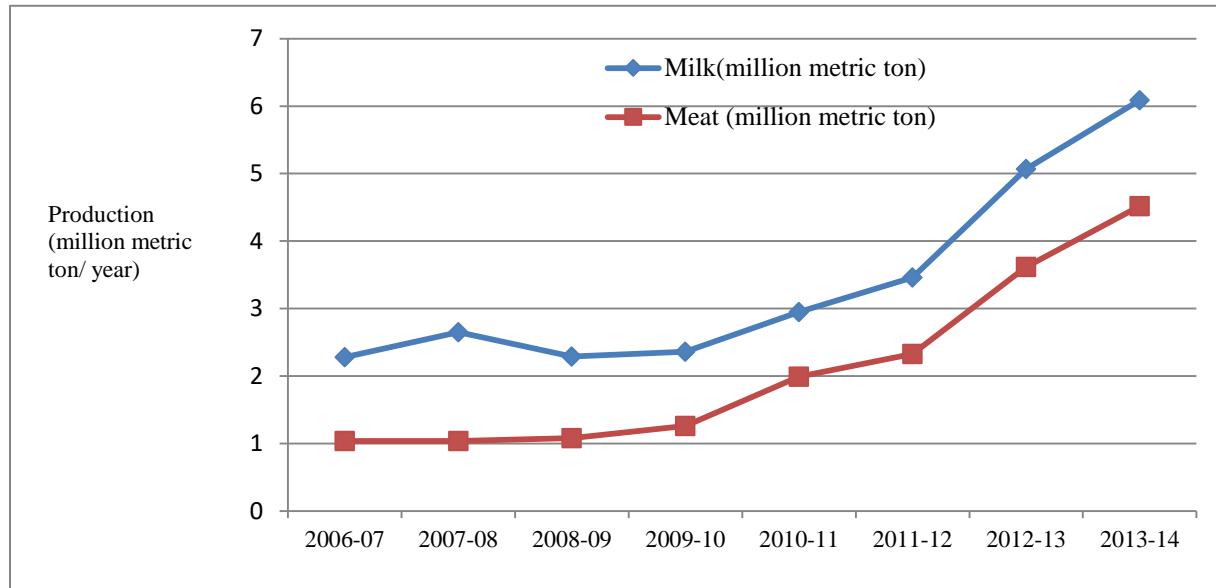


Figure 2.4: Trend of milk and meat production

Source: Department of Livestock Service (2014)

Figure 2.4 shows that milk production increased from 2.28 million metric ton (2006-07) to 6.09 million metric ton in (2013-14). On the other hand, meat production is also showing the same increasing trend (Figure 2.4).

Comparison of the milk productivity of Bangladesh with other countries is shown in Table 2.8. It was observed that milk productivity was the highest in United States 9,118 kg/head/ year, in Pakistan 1,253 kg/head/year, in India 1,087 kg/head/year. Lastly in Bangladesh where milk productivity was very low that was 206 kg/head/year compared with other countries due to unavailability of appropriate breed and lack of information about modern dairy farming. Bangladesh has a huge potential for cattle growth due to growing domestic demand for milk that comes from rising income and changing diets.

Table 2.8: Compared milk productivity with other countries

| Country | Average milk productivity (kg/head/year) |
|---------------|--|
| Bangladesh | 206 |
| India | 1,087 |
| Pakistan | 1,253 |
| United states | 9,118 |

Source: Food division, Ministry of food and disaster management (2013)

2.3.3 Consumption of Milk in Bangladesh

Due to increasing awareness about health and getting nutrient from milk, consumption of milk in Bangladesh has been increased from 1991-92 (387,000 metric tons) to 2011-12 (1892,000 metric tons) which is shown in Table 2.9. Consumption of milk in the country is carried out in different ways: directly from the producers, from the vendors and from the commercial milk processors and manufacturers. In Bangladesh, it is a very common and prestigious feature to serve and consume dairy products as dessert in all festivals and occasions. Many people cannot get milk because of low milk production. But a huge number of dairy based sweet shops are located every corner of the country (Shahnaz et al., 2004) and people are mostly like to buy sweetmeats (one kind of milk product) from shop which is available at reasonable price.

Table 2.9: Trend in consumption of milk

| Year | Milk consumption ('1000 metric tons) |
|---------|--------------------------------------|
| 1991-92 | 387 |
| 1993-94 | 462 |
| 1995-96 | 608 |
| 1997-98 | 787 |
| 1999-00 | 808 |
| 2001-02 | 829 |
| 2003-04 | 851 |
| 2005-06 | 874 |
| 2007-08 | 897 |
| 2009-10 | 921 |
| 2011-12 | 1892 |

Source: Bangladesh Bureau of Statistics (2012)

2.3.4 Requirements and Availability of Milk in Bangladesh

World Health Organization (WHO) and Food and Agricultural Organization (FAO) recommend 280gm per day for a person (Curtis, 2011). Total milk production of the country is 6.09 million metric ton/year but the requirement is about 14.02 million metric ton/year. The shortage in milk is 56.5% (Table 2.10).

Table 2.10: Requirement, production and deficiency of milk in Bangladesh

| | Per year (million metric ton) | % |
|-------------------------|-------------------------------|-------|
| Requirements | 14.02 | 100.0 |
| Production/Availability | 6.09 | 43.5 |
| Deficiency | 7.93 | 56.5 |

Source: Department of Livestock Service (2013)

There is huge gap between demand and supply of milk to fulfill the demand. To meet up shortage of milk, Bangladesh has to import powder milk and cream from abroad (New Zealand, United States, European Union, India and Australia)²⁵. For this reason, the country loses foreign currency every year which is about USD 93 million (Bangladesh Bank, 2013). Table 2.11 shows import of powdered milk and cream.

Table 2.11: Yearly powdered milk and cream import status of Bangladesh

| Years | Amount (metric ton) | Import cost (million USD) |
|-----------|---------------------|---------------------------|
| 1999-2000 | 16,000 | 60 |
| 2000-2001 | 19,000 | 62 |
| 2001-2002 | 20,000 | 59 |
| 2002-2003 | 18,600 | 61 |
| 2003-2004 | 16,250 | 57 |
| 2004-2005 | 17,600 | 86 |
| 2005-2006 | 51,500 | 73 |
| 2006-2007 | 58,500 | 83 |
| 2012-2013 | 20,000 | 93 |

Source: Bangladesh Bank (2013)

²⁵ Source: Global Agricultural Information Network. USDA Foreign Agricultural Service, GAIN Report Number: BGB011, 6/25/2013.

2.3.5 Milk Price

In Bangladesh the price of liquid milk is influenced by milk powder prices because milk powder is a substituted for fresh milk. Local milk processor will increase their use of skimmed milk powder instead of fresh milk, if the price of imports including tariffs falls below the local milk price. The price of milk per kg from 2003/04 to 2015/16 is shown in Figure 2.5.

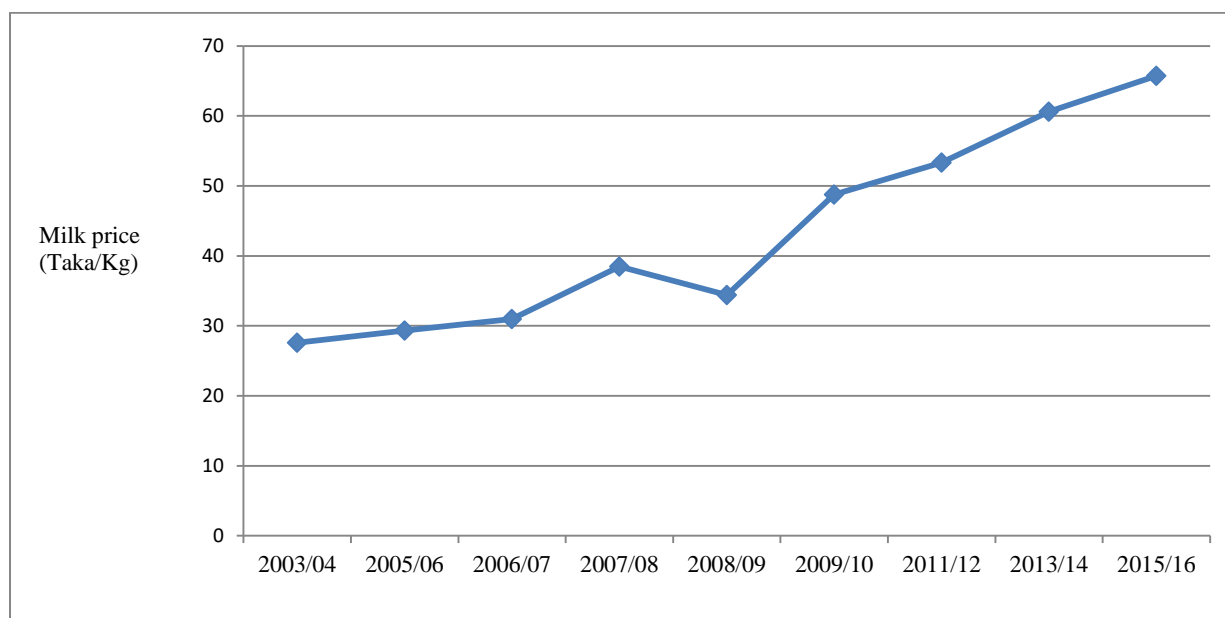


Figure 2.5: Milk price

Source: Bangladesh Bureau of Statistics, Statistical Yearbook of Bangladesh (2012), Bangladesh Bureau of Statistics, Statistical Pocketbook of Bangladesh (2013) and http://www.numbeo.com/food-prices/country_result.jsp?country=Bangladesh

From the Figure 2.5, it was observed that the retail price of liquid milk per kg was 28 Taka in 2003/04, price increased to 31 Taka/kg in 2006/07 and further increased to 38.50 Taka/kg in 2007/08. The melamine crisis in China²⁶ affected the consumption of powdered milk in Bangladesh in 2008/09. At that time, they preferred milk more than imported powder milk for consumption purpose or prepared dairy products. In 2008/09, powder milk

²⁶ https://en.wikipedia.org/2008_Chinese_milk_scandal

price in the International market was 5000-5500 per ton and this affected the price of liquid milk in the local market in Bangladesh. After that, again milk price increased to 48.75 in 2009/10. From 2009/10 to 2015/16, we observed from Figure 2.5, there is an increased trend of milk price.

2.3.6 Milk Marketing Channel

There is no systematic marketing network and market information system for milk to support smallholder dairy farmers in the rural areas. Farmers sell milk either in the local market or to *goala* or milk men who continue to render useful services to the rural community, and sometimes work as supplying agents to private firms. Normally from small-scale farmers, more than 90% milk is sold through informal channel such as neighbors and relatives or at the local market through milk men and less than 10% is sold to formal milk processing companies (Curtis, 2011). Milk marketing channel is shown in Figure 2.6.

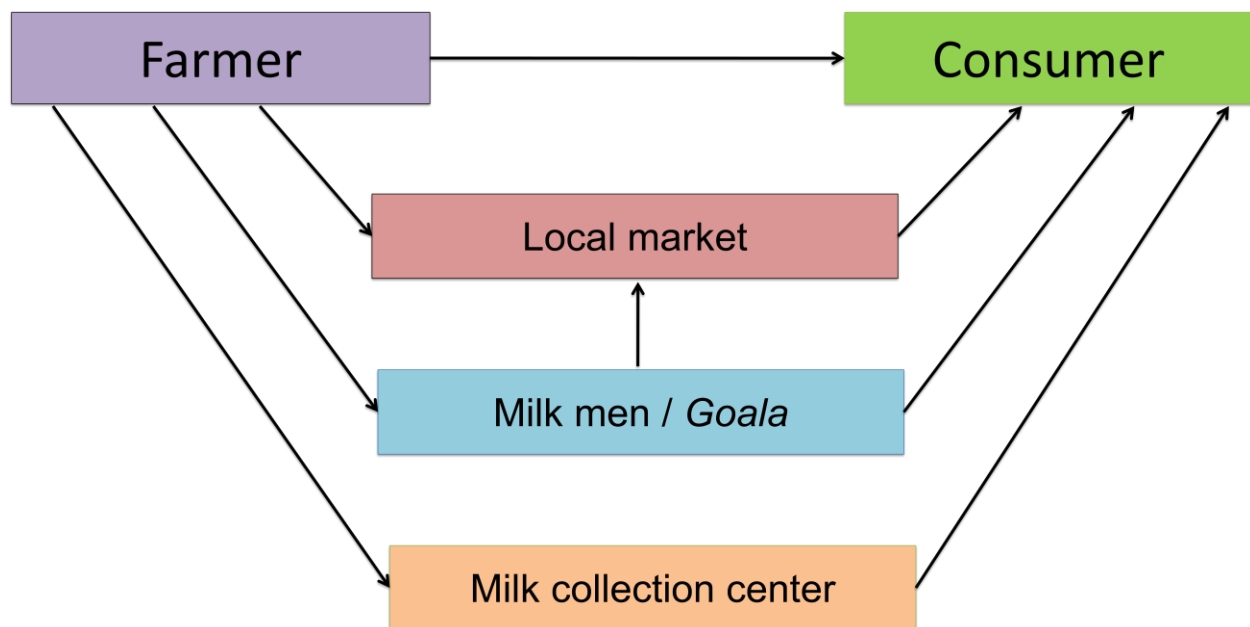


Figure 2.6: Milk marketing channel

Source: By the author

Now, the country has developed commercial dairy farming. Commercial marketing of milk started in the late 1970s by Milk Vita. Milk Vita has established milk-processing plants in various places and collects milk from its cooperatives members. BRAC²⁷, PRAN²⁸ and CLDDP²⁹ (Community Livestock and Dairy Development Project) have also recently installed milk processing, and a small number of other private farms are dealing with pasteurized milk. These enterprises process and distributed milk throughout the country.

2.3.7 Breed Information

The indigenous breed of cattle is common in Bangladesh. On the other hand, crossbred cattle are the results of crossing between traditional dairy cattle (local) with different exotic breeds like Holstein Friesian, Sindhi, Shahiwal, Jersey.

To meet an increasing demand for milk, the dairy sector in Bangladesh need improved breed through genetic improvement. In order to maximize overall profitability, the herd must have appropriate combination of genetically high potential breeds along with better feeding, management and health care.

Introduction of cattle crossbreeding programs is one of the main strategies in Bangladesh. Crossbreeding program for improving traditional dairy cattle was initially introduced during the later period of the British rule in certain areas of Bangladesh with high potential for dairy development and such programs were redesigned several times with foreign technical assistance in more recent years (Islam et al., 2002).

²⁷ **BRAC**, an international development organization based in Bangladesh, is the largest non-governmental development organization. BRAC was started in early 1972 as a relief measure following the war of liberation. Soon it became a community development organization providing health, family planning, education and economic support to different sectors of the rural community, but with particular emphasis on the most disadvantaged, such as women (<http://www.gdrc.org/icm/brac.html>).

²⁸ **PRAN** is a food processing brand in Bangladesh and established in 1981. PRAN has become one of the largest food and beverage brands in Bangladesh and has been exported to 95 countries. PRAN produces a number of agro products under the banner of PRAN such as juice, soft drink, snacks, biscuits, dairy products and sauce (<https://en.wikipedia.org/PRAN>).

²⁹ **CLDDP** is to support national efforts for poverty alleviation by providing a model for sustainable rural development through livestock-based income generating activities at the rural community level which reduces the incidence of poverty, enhances development opportunities for women, improves household food security and nutrition, sustainably increases family income (<http://www.fao.org/ag/againfo/themes/documents/LPS/dairy/FDP/FDP.htm#bangladesh>).

Artificial insemination (AI) facilities have also been extended to dairy cattle to sustain breed improvement efforts. The Department of Livestock Services (DLS)³⁰ has been playing a pioneer role for improvement of cattle through Artificial Insemination (AI)³¹ program in Bangladesh. This program for genetic development of dairy cattle in the country started from 1973. Many private and cooperative enterprises and NGO's are working for development of livestock resources. Government also encourages the private sectors and entrepreneurs to take part in the development process of dairy sector of the country.

Milk Vita, the trade name of BMPCUL³² is the largest dairy cooperative in Bangladesh, started dairy business based on genetic improvement of dairy cattle through Artificial Insemination (AI) services of their cooperative farmers in 1972. Bangladesh Rural Advancement Committee (BRAC), an international NGO, started cattle breeding program with AI services using government liquid semen in 1985 in Manikganj district of Bangladesh using trained AI technicians. At present, BRAC is in the process to expand more AI services throughout the country.

2.4 Importance of Dairy Farming for Poverty Reduction

Poverty is one of the main human problems in the world that affects human development and well-being where people cannot maintain standard of life. In rural area, women are mostly poor and vulnerable. Rural women have to address many challenges to achieve and maintain their socio-economic livelihood.

³⁰ The **Department of Livestock Services (DLS)** of the Bangladeshi Ministry of Fisheries and Livestock provides targeted livestock services to farmers throughout Bangladesh. The DLS encourages and supports planning and implementation of all livestock-related extension activities at the grass-roots level and works in partnership with government organizations, NGOs, and the private sector to develop the national livestock sector (<http://www.worldfishcenter.org/department-livestock-services-bangladesh>).

³¹ **Artificial insemination (AI)** is the process of collecting sperm cells from a male animal and manually depositing them into the reproductive tract of a female. Artificial insemination allows males to produce more offspring, fewer males are needed. Therefore, one can choose only the few best males for use as parents, increasing the selection intensity (<http://www.naweb.iaea.org/nafa/aph/resources/technology-ai.html>).

³² **Milk Vita** a trade name for dairy products manufactured by the Bangladesh Milk Producers Co-operative Union Limited (**BMPCUL**). Established under the co-operative fold, the organization, popularly known as Milk Vita, makes necessary efforts to fulfill the demand for milk and milk products of city dwellers by collecting milk from remote places of the country (http://en.banglapedia.org/index.php?title=Milk_Vita).

The population in Bangladesh is predominantly rural, with almost 80 percent of the population living in rural areas. Many people live in remote areas that lack services such as education, health clinics, and adequate roads, particularly road links to markets. They suffer from food insecurity, own no land and assets, and may also suffer serious illnesses or disabilities.

The incidence of poverty in Bangladesh is one of the highest in the world. Millions of people are suffering from the hardship of poverty (Titumir and Rahman, 2011). Like many other developing countries, poverty is still a major concern and challenge for Bangladesh. Alleviating poverty and meeting up basic needs are the primary goals of the government. The poverty incidence (1.25 US dollar per day) is shown in Table 2.12. A notable feature of poverty reduction between 1992 and 2010 was a significant decline in the incidence of extreme poverty. The incidence of extreme poverty was declined by 70.2% in 1992, 60.9% in 1996, 58.6% in 2000, 50.5% in 2005 and 43.3% in 2010. It was observed from Table 2.12 that the head count ratio (1.25 US dollar/day) has been reduced, from 1992 to 2010. Thus, it can be seen that poverty has been consistently declining in Bangladesh by almost similar rates when poverty is measured by \$1.25 PPP per day.

Table 2.12: Poverty incidence (1.25 US dollar / day)

| Year | Head Count Ratio(1.25 US dollar) |
|------|----------------------------------|
| 1992 | 70.2 |
| 1996 | 60.9 |
| 2000 | 58.6 |
| 2005 | 50.5 |
| 2010 | 43.3 |

Source: Millennium Development Goals Indicators. unstats.un.org/unsd/mdg/data.aspx

Poverty trends (Head Count Ratio) of National is shown in Table 2.13. National poverty headcount ratio declined from 56.7 percent in 1991-92 to 31.5 percent in 2010. From Table 2.12 and Table 2.13, we observed that between 2000 and 2010, the percentage of declining long term poverty trends was lower than the incidence of extreme poverty. This led to the decline in the absolute number of poor people. The remarkable progress in respect

of eradication of poverty was largely possible due to decline in population growth rate, increase in income and improvement of infrastructure.

Table 2.13: Long term poverty trends (Head Count Ratio)

| Year | National |
|---------|----------|
| 1991-92 | 56.7 |
| 1995-96 | 50.1 |
| 2000 | 48.9 |
| 2005 | 40.0 |
| 2010 | 31.5 |

Source: Bangladesh Household Expenditure Survey, 1991-92 and Bangladesh Household Income and Expenditure Survey, Bangladesh Bureau of Statistics (various years)

A rapid progress in poverty reduction is not possible without an acceleration of economic growth. The level of poverty is closely linked to the level of deprivation of women's right and nature of inequality prevailing in the country.

There are widespread gender gaps in access to and control of resources, in power, voice, economic opportunities. Women bear the largest and direct costs of inequalities. The gender disparities in economic power sharing are important contributing factor to the poverty of women (Beijing Platform for action, 1995).

In rural area of Bangladesh many women and girls in particular often face additional challenges, food and nutrition insecurity, fewer incomes earning opportunity. Poverty remains the primary cause for food insecurity in Bangladesh and poverty also linked with unemployment, social marginalization and vulnerability of women and girls. Women's involvement in dairy farming can be a potential pathway out of poverty in Bangladesh and improve food security, enhance supply of quality protein and reduce poverty level in rural areas of Bangladesh. Many NGOs are involved in the promotion of microcredit for small-scale farming including dairy cattle and other livestock.

Small-scale dairy farming is an effective and beneficial anti-poverty tool for poverty reduction strategy, which is applicable in other developing countries along with Bangladesh. Only a small amount of money is needed to start small-scale dairy farming. Women can easily raise dairy cattle along with their regular household activities.

Highly productive dairy breeds are available and suitable for farming in Bangladesh according to its weather, climate and circumstances. Small-scale farmers can successfully run the dairy farming in order to improve their livelihoods (Hemme et al., 2005). Miyan (1996) also stated that dairy farming is the source of income generation which helps in alleviating poverty in rural area.

Dairy cattle constitute an important part of the asset of a country. Dairy cattle can provide with a regular cash flow from milk sales and nutritional milk for home consumption. In the rural area, women's participation in dairy farming can help to reduce poverty in the family in various ways which is shown in Figure 2.7. Through dairy farming rural women can get the scope to earn money and contribute the family expenses during economic crisis. Dairy farming may help to bear the educational expenses of the children and rural women can purchase new household items and clothing. They can also use their income for treatment purpose and improve housing. From dairy cattle, they can provide milk to their children and help meet the nutritional demand of the family. Dairy farming may help to raise the total household income that improves consumption pattern and livelihood of rural families.

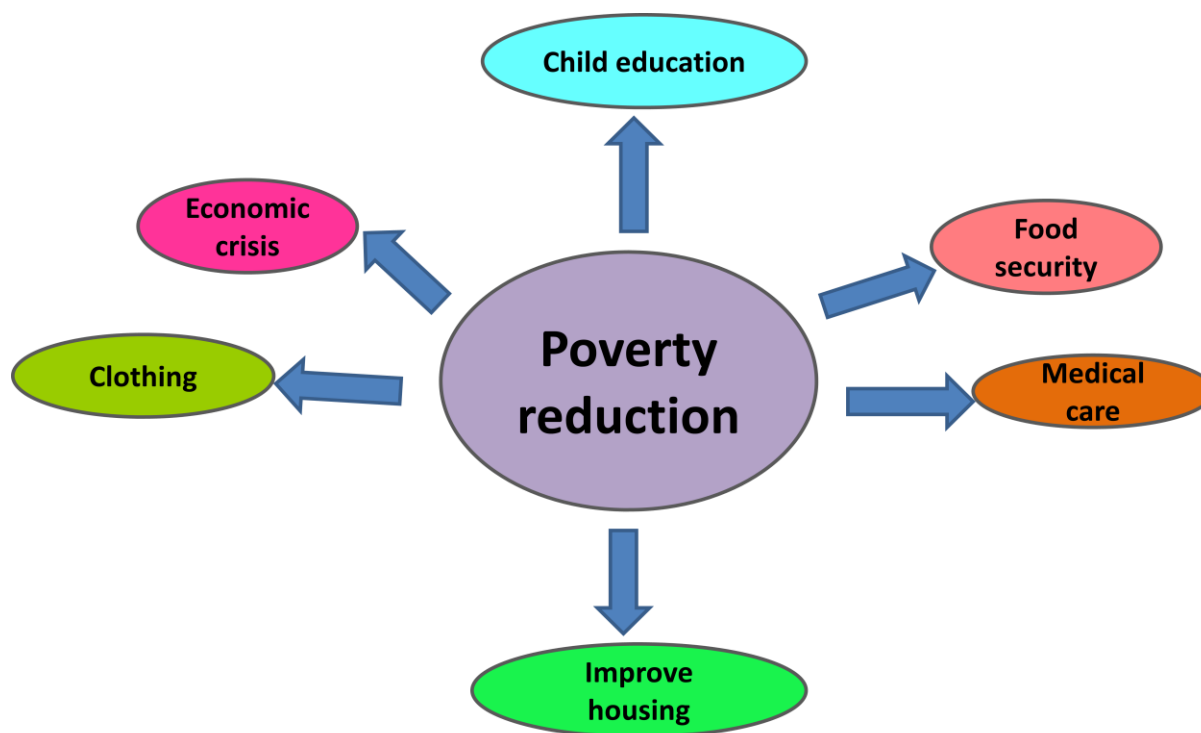


Figure 2.7: Importance of dairy farming for poverty reduction

Source: By the author

Many dairy cattle are slaughtered during Eid-ul-Adha³³ every year. Increasing demand for quality meat, beef production is considered to have high income generating potential. The dairy cattle are reared by farmers for milk production and the cow give birth of female calf used as future milking animal and male calf used as future to sale for cash and money.

Small-scale dairy farming would be really very helpful for income generation, poverty reduction and nutritional improvement of farm family. Through involving in small-scale dairy farming, rural women in Bangladesh can get out of poverty.

³³ Eid-ul-Adha, the most important Islamic festival for the Muslim, with prayers and the sacrifice of animals to Allah.

2.5 Women Empowerment through Dairy Farming

Cattle rearing can be the most useful way for women's empowerment in Bangladesh. In Bangladesh, apart from government initiatives, a large number of NGO are operating in rural areas, concentrating on rural women to change their livelihood. Due to the direct and indirect support from these organizations, the capabilities of the women are increasing, motivating them to participate in various income generating activities which are expected to contribute to their household income and empowerment. Dairy cattle provide a viable subsidiary occupation for the unemployed rural poor women so as to raise their income earning capacities (Kulandaiswamy, 1986).

In general, the conventional social attitude does not recognize women's hard working in any activities. During the recent years, growing awareness about the need for recognition of women's economic activities, rural women's involvement in livestock farming activities have increased (see Table 2.6). Rural women's involvement in dairy farming becomes important, particularly in improving capability in managing the farming. By controlling dairy farming, rural women can strengthen their decision-making power and capability which are key aspects in promoting women's empowerment. Through involving in dairy farming, rural women can get the scope to become empowered. Women's economic empowerment reduces the chances of intimate partner violence (Bayes, 2005).

In Bangladesh, dairy animal rearing is a component of farming system since ancient time. Women's contribution to the family welfare in case of emergency will improve their position in the family and society. After earning money their condition in the eye of husband, neighbor and relatives will also change, they will start to respect women. Women's income earning potential from dairy farming will not only increase their status but also help to reduce gender discrimination. Through their contribution in the family, they can raise their bargaining and controlling power. Control of household income may help women empowerment as it gives power to the use and supervision of household resources for family welfare.

Involving in small-scale dairy farming, rural women in Bangladesh can improve their mobilization and socialization, raise their socio-economic condition and awareness. In rural area, small-scale dairy farming has increased significantly with the support of credit, feed, veterinary services and women's self-interest to utilize their

skill and capability. Moreover, dairy farming is one of the ways, by which rural women can reduce dependency. So, dairy farming can be one of the important mechanisms for rural women to get out from disempowerment situation.

2.6 Conclusions

It was concluded that dairy farming in Bangladesh play numerous roles in the economy though the share of animal farming in GDP is small. Milk contains nutritional value having all ingredients, which is important for human being. Raising awareness about nutrition, consumption of milk, milk product, and dairy cattle production increased in Bangladesh. Different NGOs, extension workers, and social workers encouraged rural women to rear dairy cattle, and provided various facilities, artificial insemination service and health care service. Meat production is also increasing due to establishment of various restaurants where meat is used. Bangladesh has shortage of milk. To fulfill the deficiency of milk, Bangladesh has to import milk from abroad every year. For this reason, the country has to lose foreign currency.

Dairy farming is the potential tool for employment of rural poor people, especially women. This also helps to reduce poverty in rural area. Rural women can find out the pathways for empowerment through dairy farming. They can increase their self-determination and economic power through earning money from dairy farming. Rural women contribute more to the family expenses, which can raise their bargaining power and voice against any violence. In rural area, through involvement in dairy farming, rural women have more possibility for being empowered by improving decision-making capability, income earning potentiality, increasing status, self-esteem, self-confidence and they also can play important role for changing the traditional rural society in Bangladesh.

CHAPTER 3

GENERAL DESCRIPTION AND BACKGROUND OF THE VILLAGES

[Deleted Chapter 3 from the thesis and the contents of this chapter are anticipated to be published in a paper in a scholarly journal. The paper is scheduled to be published within 5 years]

CHAPTER 4

WOMEN'S EMPOWERMENT THROUGH SMALL-SCALE DAIRY FARMING IN SELECTED AREAS OF BANGLADESH

4.1 Introduction

Women's empowerment is one of the significant issues for upholding status of rural women in Bangladesh. The women are subjected to aggressive behavior at the hands of their husbands and other male members of husband's family. This oppression is a common experience for every woman in the traditional rural Bangladesh society and highlights the importance of fostering women's empowerment to remove gender inequality both within the family unit and in society. The rural women must be taught and encouraged in building a strong independent mindset to escape the patriarchal society. Women need to tackle existing norms and culture in order to increase their confidence and self-esteem which necessitates intervention at the social and cultural level. Women's empowerment required sustained action to advance women's opportunities and rights and to ensure that women can participate.

Additionally, gender equality and empowerment of women are vital to achieve sustainable improvement in the rural society (Afzal et al., 2009). Shefner-Rogers et al. (2009) stated that women's empowerment is necessary for the construction of a route to foster women's ability to be self-reliant and to improve internal power. Economic empowerment among the women will promote to improve their economic well-being. Rural women's economic empowerment is their capacity to bring about economic changes for themselves is viewed as the most important factor to achieving equality between women and men. This sets a direct path towards gender equality. Financial independence among the women will help to establish their position in the family and society by increasing voice, bargaining power and raising awareness about discrimination and injustices.

Freedom of mobility is also important for the social empowerment of women. If the women have no freedom to interact with other people, going outside of the home, they will remain far away to develop themselves. The ability to decide one's own course in life consists of numerous interconnected capabilities such as the ability to identify and express needs, establish goals and expectations and plan of action to achieve them, identify resources,

make rational choices from various alternatives. Autonomy in decision-making can promote rural women to gain liberty. Liberation of oneself from the existing traditional roles, help to find out new opportunity and scope in perceiving existing resources, redefine their identities and future roles. Rural women's empowerment can foster the development of increased self-confidence, self-motivation, and general autonomy.

Rural women in Bangladesh are particularly affected by socio-cultural norms and they have less controlling power, little choice about governing their own lives and less scope to change their situation to become empowered. Dairy farming run by rural women are growing increasingly popular in Bangladesh due to the limited costs of rearing dairy animals on personal homesteads. Dairy farming is gender specific work. It is traditionally rural women's work. This farming operation may be one of the best ways for these rural women to utilize their limited resources and to develop skills that will contribute to their empowerment. In the previous chapter, we have seen that V1 (M) women have good socio-economic condition than V1 (T) and V2 (T). So, in this chapter we will investigate the empowerment situation of V1 (M), V1 (T) and V2 (T) and construct women empowerment index to measure women's empowerment. Thus, the purpose of this chapter is to quantify the empowerment of rural women in the Bangladesh villages V1 (M), V1 (T) and V2 (T) and factors affecting overall women's empowerment.

4.2. Methodology

4.2.1 Women Empowerment Indicators

The following indicators are identified from the definition of women's empowerment used in this study:

Take decision independently

An empowered woman has the power to control her life by taking decision independently. She is self-determinant to take decision regarding her health and personal willingness.

Involvement in major household decision

Woman's power to participate in the household decision like health of children, children education and purchase of food item.

Income earning potential

A rural woman's ability to earn money from dairy farming. This variable indicates that how much extent a woman is capable to earn money from dairy farming.

Independence for spending money

Women's retaining capacity about controlling her money and autonomy to spend her money according to her wish (fulfill personal need or purchasing any item for children).

Social status

Recognitions of the position of a woman in the society and the authority she holds in consequence on the basis of status system. Status is the position that a woman holds in a given system. It means the location of the individual within the group her place in the social network of reciprocal obligations and privileges, duties and rights. Social status is the position or rank of a woman within the society. Rural women can earn their social status by their own achievements. In a non-egalitarian rural society, women are more likely to have a lower social status.

Freedom of mobility

Freedom of mobility is women's rights to travel from place to another place (relative's house, health care center, market etc).

Participation in microcredit program

A rural woman's involvement with microcredit that indicates how many years she was involved with microcredit.

Legal awareness

A rural woman's raising awareness about her legal right (divorce, property right, remarries etc.) and raise voice about domestic violence.

Self-confidence

A rural woman's inner strength to express her capability, knowledge and experience. She does not fear to take any risk or face challenges. The feeling of self-confidence is very much inspiring for women to remove sadness and overcome uncertain shocks and help to become strong minded.

Self-esteem

Self-esteem means woman's overall emotional evaluation about own worth, consideration of self-respect, a favorable and high opinion about herself. Self-esteem is how women value themselves and how valuable women are to others. Positive self-esteem gives women the power and flexibility to change of the lives and grow from mistakes without the fear of rejection. In contrast, a person with low self-esteem feels rejected, incapable, hopeless and worthless.

4.2.2 Construction of a Women's Empowerment Index

In this study, women's empowerment was quantified by making a women's empowerment index using the dimensions. The dimensions used are: decision-making, economic empowerment, social empowerment, legal empowerment and psychological empowerment. Figure 4.1 represents these different dimensions with their relevant indicators for the construction of the women's empowerment index.

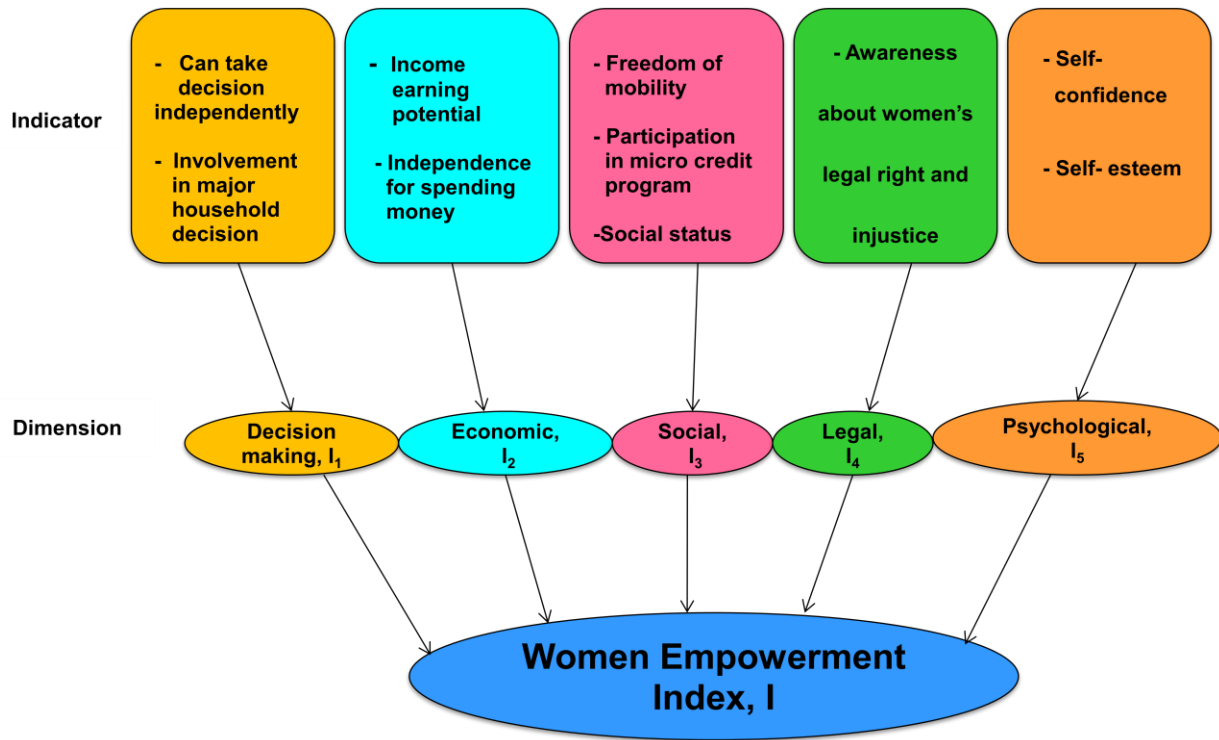


Figure 4.1 : Framework of the women's empowerment index

Source: By the author

Questionnaire responses regarding women empowerment indicators were based on a four point Likert scale (1 = not at all, 2 = to some extent, 3 = to an average extent and 4 = to a great extent). In order to standardize the results and generate a scale with minimum and maximum levels of empowerment, the score for each dimension was assigned a maximum possible value of 1 for highest empowerment and minimum value of 0 for lowest possible empowerment. Thus, the standardized scale ranges from zero to one.

Empowerment in dimension index is represented by following formula:

Dimension index, $1 < X_i < 4$

$$0 < X_i - 1 < 3$$

$$0 < (X_i - 1)/3 < 1$$

$$I_i = \sum X_{ij}/n_j$$

4.2.2.1 Decision-Making Index

Independent decision-making and the involvement in major household decisions indicators have been used for the dimension of decision-making.

4.2.2.2 Economic Empowerment Index

Incomes earning potential and autonomy of choice over how their income is spent have been used for the dimension of economic empowerment.

4.2.2.3 Social Empowerment Index

Woman's freedom of mobility, participation in a microcredit program and social status indicators has been used for the dimension of social empowerment.

4.2.2.4 Legal Empowerment Index

Awareness about injustices and women's corresponding legal rights indicator has been used for the dimension of legal empowerment.

4.2.2.5 Psychological Empowerment Index

Women's increases gained in confidence and self-esteem indicators have been used for the dimension of psychological empowerment.

4.2.2.6 Overall Women's Empowerment Index

The overall women's empowerment index was calculated with the following formula:

Overall women empowerment index, $I = (I_1 + I_2 + I_3 + I_4 + I_5)$

Where, I_1 - I_5 represents the standardized levels of empowerment as classified in Decision-making, Economic empowerment, Social empowerment, Legal empowerment, and Psychological empowerment, respectively.

4.2.3 Relationship among the Indicators

Pearson's correlation was used to test the relationship between the women's empowerment indicators.

4.2.4 Factors Affecting Overall Women's Empowerment Index

The variables that may affect women's overall empowerment index are: age of the women, dummy (educational level of women), age difference between husband and wife, dummy (educational level of husband), dummy (modern dairy cattle), dummy (village) and dummy (source of fund).

The following Ordinary Least Square (OLS) method was used to estimate the effect of different independent variables like age of women, dummy (education of women), age difference between husband and wife, dummy (education of husband), dummy (modern dairy cattle), dummy (village) and dummy (source of fund) on overall women's empowerment index:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + e_i$$

Where,

Y = Women empowerment index

X_1 = Dummy, village ($V_1 = 1$ and $V_2 = 0$)

X_2 = Dummy, modern dairy cattle (Modern cattle = 1 and local cattle = 0)

X_3 = Age of women

X_4 = Dummy, education of women (1 = completed primary education and 0 = did not complete primary education)

X_5 = Age difference between husband and wife

X_6 = Dummy, education of husband ((1 = completed primary education and 0 = did not complete primary education)

X_7 = Dummy, source of fund (loan support) (1= yes and 0 = no)

X_8 = Dummy, source of fund (own money) (1= yes and 0 = no)

X_9 = Dummy, source of fund (inheritance) (1= yes and 0 = no)

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8$ and β_9 are the corresponding coefficients, and e_i is the error term.

It is hypothesized that all independent variables such as age of the women, dummy (educational level of women), age difference between husband and wife, dummy (educational level of husband), dummy (modern dairy cow), dummy (village), dummy (source of fund) (availability of loan), dummy (source of fund) (own money) and dummy (source of fund) (inheritance) are expected to increase overall empowerment of the women.

4.3 Results and discussion

4.3.1 Women Empowerment Indicators

In this study, empowerment indicators have been used to measure the level of empowerment among women living and working on small-scale dairy farms in rural Bangladesh villages, V1(Modern), V1 (Traditional) and V2 (Traditional). Regarding the different empowerment indicators, the percent distributions of V1 (M), V1 (T) and V2 (T) women's responses are shown in Table 4.1 and Table 4.2.

Table 4.1: Percent distribution of V1 (M) and V1 (T) women's response on empowerment indicators

| Women empowerment Indicators | V1 Modern (M) | | | | V1Traditional (T) | | | |
|--------------------------------|-----------------------|--------------------------|--------------------|----------------|-----------------------|--------------------------|--------------------|----------------|
| | To a great extent (%) | To an average extent (%) | To some extent (%) | Not at all (%) | To a great extent (%) | To an average extent (%) | To some extent (%) | Not at all (%) |
| Independent decision | 74 | 19 | 7 | - | 21 | 21 | 16 | 42 |
| Major household Decision | 55 | 36 | 7 | 3 | - | 26 | 21 | 53 |
| Income earning Potential | 68 | 23 | 10 | - | - | 11 | 37 | 53 |
| Independence in spending money | 39 | 48 | 10 | 3 | - | 5 | 37 | 58 |
| Freedom of mobility | 29 | 39 | 32 | - | | 37 | 63 | - |
| Participation in Microcredit | 36 | 42 | 7 | 16 | - | 42 | 21 | 37 |
| Social status | 29 | 45 | 23 | 3 | | 16 | 47 | 37 |
| Injustice and legal right | 32 | 61 | 3 | 3 | 5 | 16 | 26 | 53 |
| Confidence | 61 | 29 | 10 | - | 11 | 21 | 42 | 26 |
| Self-esteem | 42 | 29 | 23 | 7 | 16 | 11 | 37 | 37 |

Source: Field survey, 2014

Table 4.2: Percent distribution V2 (T) women's response on empowerment indicators

| Women empowerment indicators | V2 Traditional (T) | | | |
|--------------------------------|-----------------------|--------------------------|--------------------|----------------|
| | To a great extent (%) | To an average extent (%) | To some extent (%) | Not at all (%) |
| Independent decision | 16 | 40 | 26 | 18 |
| Major household decision | 14 | 24 | 26 | 36 |
| Income earning potential | - | 22 | 54 | 24 |
| Independence in spending money | 18 | 24 | 26 | 32 |
| Freedom of mobility | 10 | 18 | 68 | 4 |
| Participation in microcredit | 6 | 28 | 54 | 12 |
| Social status | 6 | 20 | 50 | 24 |
| Injustice and legal right | 14 | 28 | 28 | 30 |
| Confidence | 18 | 24 | 32 | 26 |
| Self-esteem | 8 | 32 | 40 | 20 |

Source: Field survey, 2014

From the Table 4.1 and Table 4.2 we can see that 74% of the women in V1 (M) can take decision to a great extent while in V1(T), it was only 21% and in V2 (T), 16%. Rural women in V1 (M) have improved their decision-making power to achieve empowerment. Without improving decision-making power, she cannot make any choices about her life from many alternatives and her future success depends on her rational choice. On the other hand, V1 (T) and V2 (T) women cannot improve their decision-making power because of the existence of traditional thinking among women. Still now rural women in V1 (T) and V2 (T) believe that after marriage, in every matter regarding their life, husbands will take the decision.

V1 (M) women also improved their power to participate in the major household decision. In V1 (M), majority of the women (91%) can participate in the household decision while in V1 (T) it was only 26% and in V2

(T) (38%). V2 (T) women have no right to take household decision; husband control everything and take decision on the household matter.

Majority of the women in V1 (M) have increased their income earning potential while in V1 (T) it was only 11% and in V2 (T), 22% of the women have increased income earning potential to an average extent. They earn less money due to the lower productivity of animal which was explained in Chapter 3.

In V1 (M), majority (87%) of the farmer have improved their independence in spending money while in V1 (T), it was only 5% and in V2 (T) (42%), women cannot improve their financial independence due to male dominancy in the family, they have no power to retain the money and have no right to spend the money. In V1 (T) and V2 (T), husbands have the sovereign power to spend her money.

In V1 (M), 68% of the women have increased their freedom of mobility while in V1 (T), it was only 37% and in V2 (T) (28%). Security problem, patriarchal social system, work burden and transportation problem limited mobility of women in V1 (T) and V2 (T).

In V1 (M), majority (78%) of the women participated in microcredit program than V1 (T) and in V2 (T). Due to their poor socio-economic condition, they cannot continue to repay the loan and sometimes stop their participation from the microcredit program. So, their extent of participation in microcredit was low.

In V1 (M), 74% of the women have been able to increase their social status. They are earning money; contribute their family welfare, so their social statuses have been increased by improving living condition. On the other hand in V1 (T) and V2 (T), social status of the women was low.

In V1 (M), 90% of the women have increased their confidence but not in V1 (T) and V2 (T). They are dependent on men, less financial power and decision-making capability so their confidence level was very low. They are afraid to take any new initiative or face any difficulty due to lack of confidence.

In V1 (M), 71% of the women have increased their position and able to feel self-esteem about themselves. On the other hand, women in V1 (T) and V2 (T) have low self-esteem.

In general, higher scores for most variables were observed for V1 (M), indicating that women's overall empowerment was higher in V1 (M) than V1 (T) and V2 (T) (see Table 4.1 and Table 4.2).

4.3.2 Women Empowerment Index

Based on the review of literature, five dimension indexes are selected for the measurement of women empowerment in the study area. Each dimension index contains several indicators that are based on the definition of women empowerment used in this study. The five dimension index is decision-making index, economic, social, legal and psychological empowerment index. These dimension indices are constructed to get overall empowerment of women in V1 (M), V1 (T) and V2 (T). The fitted women's empowerment index of both villages is shown in Figure 4.2, confirming a higher empowerment level for V1 (M) than V1 (T) and V2 (T). V1 (M) women were much more empowered than V1 (T) and V2 (T) women.

4.3.2.1 Decision-Making Index

Decision-making power of women in household is one of the important dimensions of women empowerment. To analyse women's decision-making power, decision-making index was constructed to indicate their extent of participation in decision-making. Independence or autonomy in decision-making refers to the liberty for expression of a women's personal preference, a freedom of choice when presented with many alternatives, and eventual achievement of target future goals. The higher a woman's level of independence, the greater the potential for her to be empowered (Panda, 2000).

Here we used two indicators to quantify the dimension of decision-making: 1) the power of taking independent decisions and 2) the extent of involvement in major household decisions. By comparing these factors between the two villages, from the Figure 4.2, it was found that decision-making index was higher in V1 (M) (0.84) than V1 (T) (0.32) and V2 (T) (0.45). Women in V1 (M) have more power to make independent decisions and work freely than do women in V1 (T) and V2 (T).

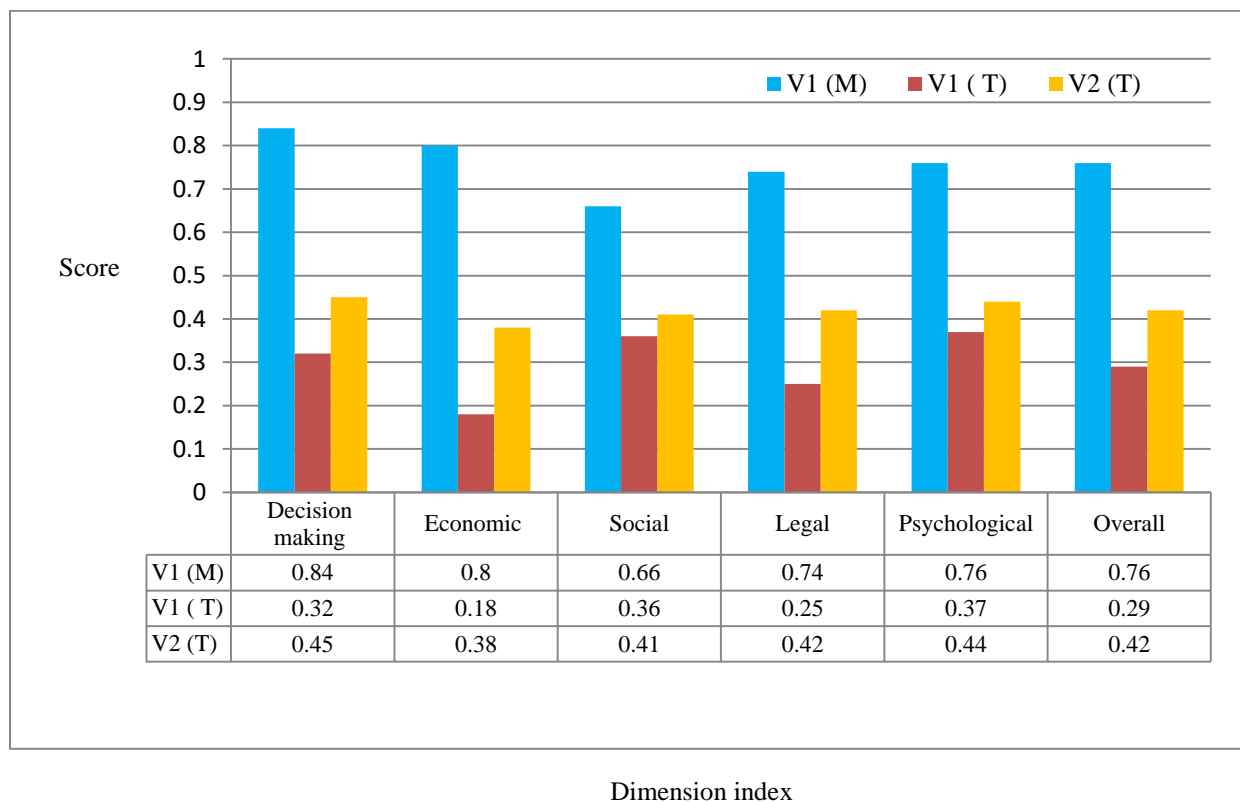


Figure 4.2: Women's empowerment index of V1 (M), V1 (T) and V2 (T)

Note : The empowerment index score ranges between 0 and 1

Source: Primary data analysis (2014)

In V1, historically the lives of the women have been dominated by a patriarchal social system and upon marriage, typically a woman is expected to obey all the rules mandated by her husband, is prohibited from making independent decisions, and has no right to challenge her husband's authority. All decisions regarding activities

within and outside of the household are made solely by male members (Mujahid et al., 2015). During childhood, women are dependent on male family members and not educated or taught self-dependency. Upon marriage, bearing children, and in particular a son becomes a prime responsibility for these women, along with household duties such as cooking for family members. This historical treatment of women has changed notably within V1 (M) through improving decision-making power and as a result, women's self-determination has increased. Through our research we found that rural women in V1 (M) served significant decision-making roles in family affairs, including decisions about their own health and the health of their children (same as boys and girls). In particular, in the face of sickness, pregnancy, or related health matters, the women in V1 (M) were able to choose independently to visit a hospital or health clinic. Women were also allowed to make decisions regarding the health and general care of their children, such as choosing to vaccinate their newborns, making nutritious food choices, and opting to seek better treatment for their sick children. The women from V1 (M) also exhibited increased expression of personal preference and had the freedom to make good daily food and nutritional choices for their family and had similar authority in deciding how to feed their dairy cattle to improve productivity. Participation in decision-making refers to the extent of women's ability to participate in formulations and executing decisions. The women were also involved in major family decision-making on issues related to family members, the marriage of a son or daughter, household repairs, and large purchases. In contrast, women in V1 (T) and V2 (T) had few decision-making rights within the family because they had little autonomy and power. Ultimately, the increased decision-making power exhibited by the women in V1 (M) is one of the significant progresses toward the achievement of gender balance in their society.

4.3.2.2 Economic Empowerment Index

To analyze the women's economic power we constructed women's economic empowerment index. Economic empowerment is another significant dimension of women's empowerment and it has been suggested that economic empowerment of women enhances through their participation in economic activities (Parveen and Chowdhury, 2009). They studied the impact of invention of microcredit on rural women's economic empowerment in Bangladesh. They found significant difference between BRAC and non BRAC women in their level of economic empowerment. Economic empowerment can be improved through increasing income, savings and assets. By the use

of those resources women empowerment likes to remove gender discrimination, poverty reduction, family power exercise and self-reliance has increased day by day. Rural women involved in income-generating activities experience greater empowerment rather than those who are not engaged in any economic activity (Nessa et al., 2012). Economic empowerment implies a better quality of life through sustainable livelihood and ensured economic security. From the results gathered in this study, the economic empowerment index was found to be higher for women in V1 (M) (0.80) than V1 (T) (0.18) and V2 (T) (0.38). V1 (M) women earned much more money from dairy farming than the women in V1 (T) and V2 (T) (as shown in Chapter 3), due to their ability to provide adequate nutrition to dairy cattle and thereby improve farm productivity. The economic strength of women fosters independence with regard to making expenditures for her and also spends money for buying cloth for children. In contrast, V2 and V1 (T) women did not exhibit the same economic success as women in V1 (M).

4.3.2.3 Social Empowerment Index

Social empowerment is essential for the improvement of poor rural women in Bangladesh (Afrin, 2008). They are socially empowered through the improvement of their practical knowledge, self-perception, and physical mobility and this process serves to remove social barriers and superstition. Social empowerment among the women in V1 (M), V1 (T) and V2 (T) was quantified by considering three indicators: mobility, participation in a microcredit program and social status. As can be seen in Figure 4.2, social empowerment was determined to be higher in V1 (M) (0.66) than V1 (T) (0.36) and V2 (T) (0.41). Indeed, women from V1 (M) exhibited greater freedom of mobility than women from V1 (T) and V2 (T) and were able to leave their home and visit the market, health care center, or the house of a neighbor or relatives without permission from their husband or other elder members of the family³⁴. The women were able to extend their social network and mobility, increase communication with those outside of their family, and develop further independence. According to Handargama et al. (2013), the women involved in economically productive work like small-scale entrepreneurial activities, received better decision-making power, status and privileges in the society. In addition, they enjoy more freedom, social recognition than the women who

³⁴ Women's participation in micro credit program increased women's mobility for buying products, medical center for medication, other houses in the village and outside village for more relation (Afrin, 2008).

are not engaged in economic work. For many women in V1 (T) and V2 (T), we found that permission is still required for going outside of the home and their mobility is restricted. Women in V1 (M) participate in the microcredit program, where they can interact with other women and exchange knowledge, skills, and experiences. Research evidence has previously demonstrated that microcredit programs can improve the capability of women in income-generation to support household livelihoods. Beneficiary women are more empowered and improved gender relations, social cohesion and solidarity among women (Alhassan and Akudugu, 2012). Involvement in the microcredit program did expand the social network of women in V1 (M) and enhance their social status and social recognition. However, for the women in V1 (T) and V2 (T), participation in the microcredit program did not lead to the same social empowerment. Due to lack of controlling power of women in V1 (T) and V2 (T), there exists gender discrimination and inequality. So, their participation in microcredit contributed little to alter the social status and mobility of women.

4.3.2.4 Legal Empowerment Index

The foundation of legal empowerment is awareness of rights. The poor women must know their rights and understand contexts in which those rights exist and function. Following the above trend, the legal empowerment index was also found to be higher in V1 (M) (0.74) than V1 (T) (0.25) and V2 (T) (0.42). Since becoming involved with dairy farming, V1 (M) women are now more conscious of their legal rights. Through the process of earning money and using this income for family purchases, the women acquired bargaining skills and could express their differing opinions and disagree with their husband or other family members. Banu et al. (2001) have shown that rural women who involved in Bangladesh Rural Advancement Committee's Program, are able to acquire more knowledge of property rights and other legal issues such as lawful marriage age, dowries, and divorce. For example, some women learned that it is illegal for their husbands to remarry without the first wife's consent. In contrast, many women from V1 (T) and V2 (T) are less conscious about their legal rights and powerless to seek them. For example: A women in V2 (T), told her situation during interview that if she becomes late to cook rice and curry her husband start to torture her physically and psychologically but she never raised her voice against him and do not want justice against violence.

4.3.2.5 Psychological Empowerment Index

Psychological empowerment is vital for the development of poor rural women in Bangladesh. This empowerment refers to the development of self-confidence and self-esteem through which women are able to motivate into action. The results revealed that women in V1 (M) have experienced an increase in their confidence level and this has helped to enhance their efficiency and productivity in dairy farming. Level of self-respect is another important indicator for psychological empowerment and an important aspect of an individual's identity. In comparison with women in V1 (T) and V2 (T), women in V1 (M) exhibited an increase in self-respect and enhanced status in their family after becoming involved with dairy farming. Self-esteem influenced on mental health of rural women in V1 (M). Self-esteem comprises of self-worth and self-image which affected women's adjustment in various spheres of lives. In V2 (T), the patriarchal social system is still strong and the women are dependent on their family, have limited self-confidence, and are less inclined to take initiative.

4.3.2.6 Overall Women Empowerment Index

Combining these empowerment indices, we find that overall women empowerment index in V1 (M) (0.76) is higher than V1 (T) (0.29) and V2 (T) (0.42). So, between the villages, V1 (M) women exhibited more empowered than V1 (T) and V2 (T) women.

4.3.3 Relationship among the Indicators

Pearson's correlation coefficient has been used to determine the relationship among the women empowerment indicators and also to identify the most important indicator. The relationship among the indicators of V1 (M), V1 (T), V2 (T) and all groups (V1M, V1T, and V2T) were shown in Table 4.3, Table 4.4, Table 4.5 and Table 4.6.

From the Table 4.3, we can see that among the women empowerment indicators income earning potentiality of women was highly correlated with other indicators. Modern dairy cattle created income earning opportunity for rural women in V1 (M). Modern dairy cattle are more productive than traditional dairy cattle. So they are able to earn more money from modern dairy farming and facilitated their empowerment process (Figure

4.3). When they were housewives they were totally dependent on their husband and they have no power or autonomy to express their own opinion. Through modern dairy farming rural women in V1 (M) obtained economic solvency and increased their decision-making power.

Table 4.3: Relationship among the indicators of V1 (M)

| Indicator | a | b | c | d | e | f | g | h | i | J |
|-------------------------------------|---|---------|----------------|----------------|----------------|--------|----------------|----------------|----------------|----------------|
| Independent decision (a) | 1 | .599*** | .492*** | .638*** | .397** | .241 | .457** | .602*** | .380** | .614*** |
| Sig. (2-tailed) | | .000 | .005 | .000 | .027 | .191 | .010 | .000 | .035 | .000 |
| Major household decision (b) | | 1 | .483*** | .518*** | .407** | .211 | .427** | .460*** | .212 | .487*** |
| Sig. (2-tailed) | | | .006 | .003 | .023 | .255 | .017 | .009 | .253 | .005 |
| Income earning potential (c) | | | 1 | .517*** | .473*** | .336 | .486*** | .514*** | .638*** | .588*** |
| Sig. (2-tailed) | | | | .003 | .007 | .064 | .006 | .003 | .000 | .000 |
| Independence in spending money(d) | | | | 1 | .453** | .339 | .482*** | .485*** | .284 | .506*** |
| Sig. (2-tailed) | | | | | .011 | .062 | .006 | .006 | .122 | .004 |
| Freedom of mobility (e) | | | | | 1 | .365** | .565*** | .578*** | .404** | .633*** |
| Sig. (2-tailed) | | | | | | .043 | .001 | .001 | .024 | .000 |
| Participation in microcredit (f) | | | | | | 1 | .237 | .193 | .191 | .485*** |
| Sig. (2-tailed) | | | | | | | .199 | .298 | .304 | .006 |
| Social status (g) | | | | | | | 1 | .427** | .543*** | .450** |
| Sig. (2-tailed) | | | | | | | | .017 | .002 | .011 |
| Injustice and legal right (h) | | | | | | | | 1 | .323 | .577*** |
| Sig. (2-tailed) | | | | | | | | | .076 | .001 |
| Confidence (i) | | | | | | | | | 1 | .443** |
| Sig. (2-tailed) | | | | | | | | | | .013 |
| Self-esteem (j) | | | | | | | | | | 1 |

Note: *** indicates significance at 1% level and ** indicates significance at 5% level

Source: Primary data analysis (2014)

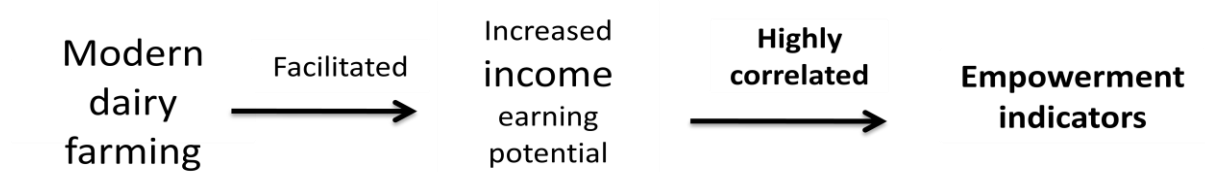


Figure 4.3: Relationship between income and empowerment indicators of V1 (M)

Source: By the author

By earning money they achieved the right to spend money more independently and fulfill their own demand. Women's contribution from modern dairy farming to household income helped to reduce their poverty and increased their power to involve in the household decision-making matters and control the household income. By earning money rural women increased their mobility and can seek better health care for themselves. The women who earned more income from modern dairy farming, they improved their economic well-being facilitated to increase their social status. Earning money from modern dairy farming also helped to create awareness among the women about their right and injustice. They got the scope to become self-dependent, protect violence against them and increased their bargaining power to achieve their right. Earning more income from modern dairy farming, they were able to feel increased confidence level and willing to take new challenges to improve their well-being and status. Increased income earning potentiality among the women also facilitated their increased self-esteem. The women who earn more income and become self-sufficient, their position in the family also improved. By earning more money they become valuable in the eye of their husbands and other members of the family.

Table 4.4: Relationship among the indicators of V1 (T)

| Indicator | a | b | c | d | e | f | g | h | i | J |
|-----------------------------------|---|------|-------|---------|--------|-------|---------|---------|---------|---------|
| Independent decision(a) | 1 | .418 | -.282 | .599*** | .504** | .387 | .307 | .293 | .631*** | .327 |
| Sig. (2-tailed) | | .075 | .242 | .007 | .028 | .102 | .201 | .223 | .004 | .172 |
| Major household decision (b) | | 1 | .358 | .351 | .494** | -.121 | .710*** | .320 | .784*** | .252 |
| Sig. (2-tailed) | | | .132 | .141 | .032 | .620 | .001 | .182 | .000 | .298 |
| Income earning potential (c) | | | 1 | -.159 | .315 | -.227 | .260 | .077 | .273 | .180 |
| Sig. (2-tailed) | | | | .516 | .189 | .350 | .281 | .754 | .258 | .461 |
| Independence in spending money(d) | | | | 1 | .492** | .351 | .369 | .522** | .529** | .634*** |
| Sig. (2-tailed) | | | | | .032 | .140 | .121 | .022 | .020 | .004 |
| Freedom of mobility (e) | | | | | 1 | .078 | .546** | .581*** | .573** | .377 |
| Sig. (2-tailed) | | | | | | .752 | .016 | .009 | .010 | .111 |
| Participation in microcredit (f) | | | | | | 1 | .274 | .017 | .054 | .110 |
| Sig. (2-tailed) | | | | | | | .256 | .944 | .828 | .654 |
| Social status (g) | | | | | | | 1 | .329 | .539** | .087 |
| Sig. (2-tailed) | | | | | | | | .169 | .017 | .722 |
| Injustice and legal right (h) | | | | | | | | 1 | .297 | .180 |
| Sig. (2-tailed) | | | | | | | | | .216 | .461 |
| Confidence (i) | | | | | | | | | 1 | .583*** |
| Sig. (2-tailed) | | | | | | | | | | .009 |
| Self-esteem (j) | | | | | | | | | | 1 |

Note: *** indicates significance at 1% level and ** indicates significance at 5% level

Source: Primary data analysis (2014)

From the Table 4.4 and 4.5, we observed that income earning potentialities of women were less correlated with other women empowerment indicators compared with V1 (M). In V1 (T) and V2 (T), they reared traditional dairy cattle and were able to earn less money due to less productivity of traditional dairy cattle. So, less income earning potentiality of women from traditional dairy cattle did not facilitate their empowerment process (Figure 4.4).

Table 4.5: Relationship among the indicators of V2 (T)

| Indicator | a | b | c | d | e | f | g | h | i | J |
|------------------------------------|---|---------|------|------|------|--------|---------|---------|--------|--------|
| Independent decision (a) | 1 | .617*** | .170 | .198 | .082 | -.043 | .122 | .461*** | .312** | .010 |
| Sig. (2-tailed) | | .000 | .239 | .169 | .569 | .766 | .397 | .001 | .027 | .942 |
| Major household decision (b) | | 1 | .198 | .270 | .087 | -.031 | .237 | .361** | .327** | .102 |
| Sig. (2-tailed) | | | .167 | .058 | .549 | .830 | .097 | .010 | .021 | .479 |
| Income earning potential (c) | | | 1 | .223 | .222 | .287** | .254 | .207 | .346** | .246 |
| Sig. (2-tailed) | | | | .120 | .122 | .044 | .075 | .150 | .014 | .085 |
| Independence in spending money (d) | | | | 1 | .032 | .221 | .220 | .376*** | .091 | .106 |
| Sig. (2-tailed) | | | | | .826 | .123 | .125 | .007 | .530 | .463 |
| Freedom of mobility (e) | | | | | 1 | -.104 | .399*** | .043 | .354** | .266 |
| Sig. (2-tailed) | | | | | | .474 | .004 | .767 | .012 | .062 |
| Participation in microcredit (f) | | | | | | 1 | -.036 | .190 | .133 | .094 |
| Sig. (2-tailed) | | | | | | | .802 | .187 | .357 | .515 |
| Social status (g) | | | | | | | 1 | .446*** | .293** | .304** |
| Sig. (2-tailed) | | | | | | | | .001 | .039 | .032 |
| Injustice and legal right (h) | | | | | | | | 1 | .323** | .163 |
| Sig. (2-tailed) | | | | | | | | | .022 | .258 |
| Confidence (i) | | | | | | | | | 1 | .136 |
| Sig. (2-tailed) | | | | | | | | | | .346 |
| Self-esteem (j) | | | | | | | | | | 1 |

Note: *** indicates significance at 1% level and ** indicates significance at 5% level

Source: Primary data analysis (2014)

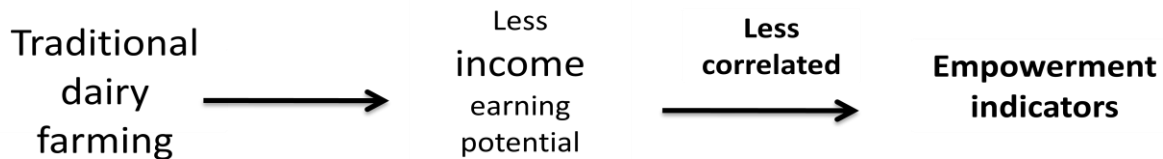


Figure 4.4: Relationship between income and empowerment indicators of V1 (T) and V2 (T)

Source: By the author

Table 4.6: Relationship among the indicators of all groups (V1M, V1T and V2T)

| Indicator | a | b | c | d | e | f | g | h | i | J |
|------------------------------------|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Independent decision (a) | 1 | .684*** | .460*** | .513*** | .373*** | .313*** | .437*** | .583*** | .553*** | .396*** |
| Sig. (2-tailed) | | .000 | .000 | .000 | .000 | .002 | .000 | .000 | .000 | .000 |
| Major household decision (b) | | 1 | .593*** | .531*** | .378*** | .245** | .543*** | .554*** | .567*** | .396*** |
| Sig. (2-tailed) | | | .000 | .000 | .000 | .014 | .000 | .000 | .000 | .000 |
| Income earning potential (c) | | | 1 | .536*** | .473*** | .421*** | .574*** | .526*** | .616*** | .501*** |
| Sig. (2-tailed) | | | | .000 | .000 | .000 | .000 | .000 | .000 | .000 |
| Independence in spending money (d) | | | | 1 | .328*** | .409*** | .489*** | .576*** | .398*** | .422*** |
| Sig. (2-tailed) | | | | | .001 | .000 | .000 | .000 | .000 | .000 |
| Freedom of mobility (e) | | | | | 1 | .241** | .564*** | .377*** | .498*** | .493*** |
| Sig. (2-tailed) | | | | | | .016 | .000 | .000 | .000 | .000 |
| Participation in microcredit (f) | | | | | | 1 | .296*** | .318*** | .304*** | .362*** |
| Sig. (2-tailed) | | | | | | | .003 | .001 | .002 | .000 |
| Social status (g) | | | | | | | 1 | .568*** | .550*** | .445*** |
| Sig. (2-tailed) | | | | | | | | .000 | .000 | .000 |
| Injustice and legal right (h) | | | | | | | | 1 | .495*** | .404*** |
| Sig. (2-tailed) | | | | | | | | | .000 | .000 |
| Confidence (i) | | | | | | | | | 1 | .439*** |
| Sig. (2-tailed) | | | | | | | | | | .000 |
| Self-esteem (j) | | | | | | | | | | 1 |

Note: *** indicates significance at 1% level and ** indicates significance at 5% level

Source: Primary data analysis (2014)

4.3.4 Factors Determining Overall Women's Empowerment Index

Ordinary Least Square regression model was used to estimate the effects of different factors on women's overall empowerment index. The results of OLS regression analysis are shown in Table 4.7.

Nine independent variables have been chosen to identify the factors determining rural women's empowerment in the study area. The Ordinary Least Square Regression model identified age of the women, dummy

(educational level of women), dummy (educational level of husband) and dummy (modern dairy cattle) as the key factors contributed towards empowerment of rural women.

Table 4.7 : Factors affecting overall women's empowerment index

| Variable | Coefficient | Standard error | t | P value |
|---|-------------|----------------|-------|----------|
| Constant | 0.038 | 0.105 | 0.37 | 0.713 |
| Dummy, village | -0.172 | 0.048 | -3.60 | 0.001*** |
| Dummy, modern dairy cattle | 0.323 | 0.056 | 5.70 | 0.000*** |
| Age of women | 0.006 | 0.001 | 3.46 | 0.001*** |
| Dummy, education of women | 0.101 | 0.045 | 2.21 | 0.029** |
| Dummy, education of husband | 0.107 | 0.037 | 2.88 | 0.005*** |
| Age difference between husband and wife | 0.003 | 0.004 | 0.76 | 0.451 |
| Dummy, loan | 0.061 | 0.059 | 1.04 | 0.302 |
| Dummy, own money | 0.084 | 0.062 | 1.35 | 0.180 |
| Dummy, inheritance | 0.040 | 0.093 | 0.43 | 0.667 |
| R ² | 0.624 | | | |
| Total sample | 100 | | | |

Note: ***indicates significance at 1% level and ** indicates significance at 5% level

Source: Primary data analysis (2014)

Dummy, modern dairy cattle

Modern dairy cattle were considered in this model as an important determinant for women empowerment. The sign of coefficient of this variable was found to be positive and highly significant with women's overall empowerment index in the regression model. Rural women's involvement in income generating activities through modern dairy farming enhanced their access to and control over economic resources, enabling them to establish and realize their rights. Earning money from modern dairy cattle are essential means to empower them to be more economically solvent and more autonomy in decision-making. By earning more money from modern dairy farming, the rural women were more empowered.

Age of the women

Age of the women is considered as an important factor for empowerment of rural women. The coefficient of age of the women was found and significantly related with women's overall empowerment index in the regression model (Table 4.7). When a woman grows older, she gathers experience which can equip her to emphasize herself. A woman's behavior varies across the stages in the life cycle (Mason, 1986). As a woman grows older, experience can teach her to stand up for her own right. When women are getting older they gain autonomy in household decision-making which enhanced their empowerment. Higher aged women move out extended family responsibility and become more independent to control their own lives.

Dummy, educational level of the women

The socio-economic development of any society depends upon women empowerment and women's education has been found to be striving for sovereign to and self-confidence. Education is one of the most important means of empowering women with the knowledge, skills and self-efficacy necessary to participate fully in the development process. Education is important for everyone but it is especially significant for girls and women because educated women can recognize the importance of health care and know how to seek it for themselves and their children. In this study, educational level of the dairy farmer was observed to be another important factor contributing to the greater empowerment of rural women. The sign of coefficient of dummy educational level of the dairy farmer was found 0.101 and highly significant with women's overall empowerment index in the regression model. Education helped to increase gender consciousness among rural women, enabled them to interact with public sphere and provided support for challenging traditional socio-cultural norms which removed gender inequality and bring empowerment among rural women. Education increased their feeling of self-worth and self-confidence which was more important feature for empowerment. Greater education reduced women's unwillingness to seek care of their own health. Improvement in educational level promote the autonomy of women and build up women's capacity to control resources and promoted positive self-perception, self-confidence, awareness of rights and the ability to achieve them. Education affected women's ability to make their own decision which increased their empowerment level. Women with high education level were more likely to make decision about their own health care compared to

those who have less education. Education increased their bargaining and decision-making power within the household and leads to better performance in terms of women empowerment.

Dummy, educational level of the husband

The sign of coefficient of dummy for educational level of husband was found positive and highly significant with overall women's empowerment index in the regression model. If husbands are well educated, then they are more understanding and helpful towards their wives. Educated husbands are more supportive to their wives and give freedom to run their own business. They think positively towards their wives and maintain good relationship. Husband's higher educational level is protective against domestic violence in rural area because it helps to fight the conventional gender norm which is very strong in rural area (Naved and Persson, 2005). Furthermore, educated husband helped to reduce gender inequality in the family as well as society and fostered their wives desire for independence.

Age difference between husband and wife

From the regression analysis it was found that age difference between husband and wife have no significant association with the women's overall empowerment index.

Dummy village

In the regression model it was found that the coefficient of dummy village was 0.172 and significant negative association with overall women's empowerment index.

Dummy fund (availability of loan)

From the regression analysis, it was found that the coefficient of dummy source of fund (loan) was positively associated with women's overall empowerment index. But it has no any significant impact on their empowerment.

Dummy fund (own money)

The result presented in the Table 4.7 also revealed that dummy sources of fund (own money) has no significant impact on women's overall empowerment index but it has positive association with women's overall empowerment index.

Dummy fund (inheritance)

The coefficient of dummy sources of fund (inheritance) was found to be positive but no significant relationship with women's overall empowerment index (Table 4.7).

4.4 Conclusions

From this study, we have observed that V1 (M) women have increased empowerment though less progress has been made in V1 (T) and V2 (T). Rural women in V1 (M) are more empowered than women from V1 (T) and (T) with regard to decision-making, in achieving economic, social, and legal rights, and are experiencing more general psychological growth. V1 (M) women improved their decision-making power by making choice independently. Economic empowerment promoted rural women of V1 (M) to become self-reliant and improved their autonomy in spending money. In V1 (T) and V2 (T), they have no right to spend their money, so they can not improve their financial decision-making power. Rural women in V1 (M) have increased their self-confidence and established their own position in the family and society, so now they can raise voice about any aggression and also raise bargaining power about their right. Their participation in microcredit helped to increase their mobility, interaction and also bring social status. Psychological empowerment among women in V1 (M) helped to bring happiness and psychological well-being in their life. V2 (T) women cannot achieve psychological empowerment as like as women in V1 (T) due to low level of self-esteem and self-confidence. Overall we find empirically, that the women in V1 (M) are more empowered than the women of V1 (T) and V2 (T). This study also found that relationship among the women empowerment indicators. In V1 (M), the most important indicator was income earning potential from modern dairy farming and highly correlated with other indicators of women empowerment. On the other hand, in V1 (T) and V2 (T) income earning potentiality were less correlated with other empowerment

indicators due to traditional dairy cattle. In V1 (M), woman's increasing income earning potentiality facilitated to take decision independently, involved in the household decision. Income earning potentiality also helped to spend money more independently and increased the social status and freedom of mobility of women. Self-sufficiency among the women promoted awareness about their right, injustice, and gender inequality and raised bargaining power to protect domestic violence. By earning more money from modern dairy cattle, rural women also feel increased self-esteem and self-confidence.

The major contributing factor for higher empowerment level was found in the Ordinary Least Square regression analysis was women's engagement in modern dairy cattle. Through modern dairy farming rural women were able to earn and increase their income earning potentiality. Rural women got the scope to become self-sufficient and improve economic well-being facilitated their autonomy and empowerment. Another factor women's age was also more responsible in the process of empowerment. When the women are getting older they are able to feel more empowered because at this stage they can reduce pressure from parents in law and less chance of divorce. So higher aged women were able to express their own opinion independently that facilitated their empowerment rather than young aged women. Profitability is important as the economic factors affect empowerment. But modern dairy farming is more important for overall women empowerment because modern technology needs more conditions such as higher education level of dairy farmer. From the analysis it was also observed that women's educational qualification has significant effects on empowerment level. This study reveals that higher educated women have greater chance to achieve high empowerment level. Education of women was an important factor which improved the position and status of women within their families. Women who are more educated are likely to be less abused by their partner than women with lower level of education. Education helped rural women to know about their right and to gain confidence facilitated empowerment. Education facilitated to create awareness among the women related to their social status, and injustice and increased economic independence which contributed empowerment of women. In this study, husband education also played important role for women's empowerment. Educated husband are more cooperative towards their wives and encourage their wives to involve in income generating activities. Therefore, in this study we found from Ordinary least Square regression analysis that women's

engagement in modern dairy cattle, is the most significant determinant for women's overall empowerment in the study area.

CHAPTER 5
INVOLVEMENT IN DAIRY FARMING AND WOMEN EMPOWERMENT

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CHAPTER 6

CONCLUSIONS AND POLICY IMPLICATION

6.1 Conclusions

This study attempts to investigate the women's empowerment through dairy farming in selected villages of the Mymensingh district in Bangladesh. In Bangladesh rural women's are deprived their right, health, mobility, status, decision-making and controlling power in every steps of life. From the childhood, they have learned that they have to tolerate many things in their whole life than men. They have to keep silent always in front of their husbands and have no right to express their own opinion. In every matter, men get priority than women in the family and society. Women do not get any opportunity to involve in income generating activities outside house. They are married so early to reduce family burden and after that they have to give birth a child as so early age. After marriage rural women cannot lead life with freedom because they are regularly tortured either physically or psychologically by their husbands or husband's family member. In the family, husband and husband's family member control the lives of women. They destroy women's dream, control their earnings and create limitation on their independence. They are continuously over burdened with household works and less recreation in their life. In a patriarchal social system like Bangladesh, women have to live and work with social assertiveness and restrictions. In the cultural tradition of the rural society, women suffer from male reservation about a woman's role and capacity. Women face constraint not only from males but also from elderly female who have accepted gender inequality. This is the general picture of every rural woman in Bangladesh. Women empowerment is necessary to overcome disadvantaged situation of women in Bangladesh. Empowering women would increase their involvement in various activities and also in the decision-making process and would significantly enhance their position in the family and society. Empowerment among the women would eliminate traditional socio-cultural norms, values and beliefs.

This study focuses on the relation of extent of contribution of rural women in dairy farming activities with women empowerment in V1 (Modern), V1 (Traditional) and V2 (Traditional) of Mymensingh district of Bangladesh. The villages are different on the basis of their using technology of dairy farming (types of breed). V1 (M) women is started to become urbanized (improving infrastructure, electricity) used modern technology of dairy

farming and more empowered. But on the other hand, V2 is traditional village, no electricity, less infrastructural facility, used traditional technology of dairy farming (traditional or local cattle) and less empowered. So these villages were selected for this study to compare their empowerment through modern and traditional dairy farming. In both villages, majority of the rural women involved in dairy farming to upgrade their livelihood, reduce poverty and purpose of achieving empowerment.

In chapter 2, the present situations of dairy farming in Bangladesh are discussed. Dairy farming is vital for earning additional income and improving economic well-being. The availability of this form of traditional self-employment (household cattle rearing) to rural dwellers, particularly women, is important where there is scarcity of alternative income generating opportunities. Household cattle rearing can increase the scope for the poor rural women to become empowered. Modern dairy cattle can play a leading role to build a healthy child folk through reducing malnutrition of the country's people. Rural women consider dairy cattle as their asset because of its huge implication in their daily rural life. Modern dairy farming is also the source of income of rural women from milk sale and generates gainful employment opportunities for them besides their household works. Dairy farming may help to raise the total household income and improve livelihood of rural women in Bangladesh. Modern dairy farming is not only an effective role to fight against poverty but also as a means of promoting the empowerment of marginalized section of the society. Through involving in modern dairy farming, rural women can improve their earning capacity, raise bargaining and controlling power, increase confidence, self-esteem which may facilitate their empowerment process.

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In chapter 4, we quantified the empowerment of rural women in the Bangladesh villages V1 (M), V1 (T) and V2 (T). Small-scale dairy operations run by rural women are growing increasingly popular in Bangladesh due to the limited costs of rearing dairy animals on personal homesteads. In this study, women's empowerment was quantified by making a women's empowerment index using the dimensions of decision-making,

economic empowerment, social empowerment, legal empowerment and psychological empowerment. From this study, we have observed that dairy farming is increasing empowerment among women in V1 (M), and less progress has been made in V1 (T) and V2 (T). Rural women in V1 (M) are more empowered than women from V1 (T) and V2 (T) with regard to decision-making, in achieving economic, social, and legal rights, and are experiencing more general psychological growth. In V1 (M), majority of the women have improved their decision-making power and their involvement in household decision-making. They achieved the right to take decision on personal health care and also children's health. In contrast, women in V1 (T) and V2 (T) had limited autonomy, decision-making power and had few decision-making rights within the family. V1 (M) women are also economically empowered through improving income earning potential and independence in spending money. On the other hand, V1 (T) and V2 (T) women did not achieve economic empowerment due to less income earning potential and less economic independence. V1 (M) women have increased their confidence level and this helped to enhance their efficiency in modern dairy farming. In contrast, V1 (T) and V2 (T) women have limited self-confidence and less motivation. V1 (M) women were also improved self-esteem and increased their status in the family than V1 (T) and V2 (T) women. Overall, we find empirically that the women of V1 (M) are more empowered than the women of V1 (T) and V2 (T). The study found that most important women's empowerment indicator was income earning potentiality of women. Through modern dairy farming in V1 (M), rural women have high income earning potentiality and it was highly correlated with other indicators. In this chapter, we also analyzed the factors affecting the empowerment of rural women in the study area. The study found that age of the women, high educational level of the women and husband and modern dairy cattle significantly affected the overall empowerment of rural women in the study area. But the most important factor is women's engagement in modern dairy cattle for the overall empowerment of rural women.

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6.2 Policy Implication

In many rural areas in Bangladesh, women are not aware and have no idea about modern dairy farming. Rural women face many problems conducting dairy farming that need to be prevented for its development. Availability of modern breed and information about modern dairy farming should be spread among the women in rural area. Rural women have less motivation for the adoption of modern dairy cattle because they have lack of confidence, knowledge, and information about farming. In many rural areas of Bangladesh, modern farming is not being introduced, still now the dairy productivity was low due to rearing traditional dairy cattle. As a result, rural people especially children are able to intake low nutrition, protein from dairy cattle. Through rearing traditional dairy cattle, they are not much more benefitted to improve their livelihood and reduce poverty. For this reason, sometimes rural women feel discourage to rear dairy cattle and stop practicing to rear dairy cattle. Availability of information about modern dairy farming is very much important for the rural women to reduce poverty and achieve empowerment. Likewise dairy farming, the poultry rearing can be used to empower women economically because women perceived poultry keeping as a source of small cash, source of nutritious food to the family at a very low cost (Adisa and Akinkunmi, 2012). Backyard poultry farming develop the situation of rural women and improve their social status. Hence, backyard poultry farming and other similar business project should be encouraged by Government and Non Government Organizations development agencies as it increases independent decision-making authority and the involvement of women in family welfare which enhances the socio-economic development of the rural sector. Furthermore, the role that women play in poultry production and in rural development needs to be supported by adequate policies (Singh, 2015). Other agricultural farming activities like vegetable farming may also help empowerment of women if it is based on new technology. The introduction of new technology of vegetable farming may have the same result on rural women's empowerment like modern dairy farming. But this is not possible in case of traditional vegetable farming. In this case, GO and NGO can play vital role to provide information about modern technology to the rural women. These organizations can also facilitate support, input for conducting modern agricultural farming and should encourage rural women to become empowered through modern farming. These organizations can provide instruction on a regular basis regarding how to conduct and manage modern agricultural farming to the rural women. Through guidance rural women can get the scope to increase their

knowledge about modern agricultural farming, exchange their ideas and views with others. In this way they can get information, raise awareness about modern agricultural farming and also motivate other women to involve modern agricultural farming for improving their situation. Rajkumar and Kavithaa (2014) stated that there is a need for strengthening the extension work by Government and Non Government Organizations to ensure a continuous flow of information to the rural women to overcome the obstacles in goat rearing practices and to enhance their productivity and program

In Bangladesh, rural communities are patriarchal and male has sovereign power to control household resources. Male domination is high in the family as well as in the society. Rural women have no right to say anything against husband or husband's family member. They have old traditional thought and they do not think that they are deprived their right, autonomy, power in the family and society. Rural women are also responsible for limiting their potentiality and disempowerment. Their traditional thinking limited their mobility and autonomy in decision-making. From childhood, they are habituated to obey all the traditional norms and values. They have to come out from patriarchal social system they have to increase their controlling power and should be confident to take any new challenge. They have to play the vital role to meet their individual needs, willingness and become financially independent. Women's empowerment is necessary to upgrade the status of rural women in the family and society, to reduce gender discrimination and violence against them. If they do not facilitate their own development by themselves, they will never achieve empowerment. If the same opportunities are given to the women as like as men, rural women can bring more welfare for the family. Rural women have ability to perform activities very well. So, women's higher extent of contribution in modern dairy farming activities can be one of the suitable ways for empowerment of rural women in Bangladesh and thereby change the patriarchal social system in Bangladesh. In this case, GO, NGO, extension worker and social worker also can play important role to remove old traditional thought from rural people. They should give advice to the husband that they have to think positive towards their wives, give emphasize to their wives opinion and also give freedom them to take decision independently. Every woman in rural area must work hard for the family welfare. So, they have right to get reward and husband should also respect towards their wives. They have no right to control the women's earning. Women's choices of governing their own lives totally depend on women. Husband should not interfere to control women's lives. They should give

support to their wives in their daily life. Husband's friendly behavior will facilitate them to achieve empowerment. The full participation and partnership of women and men are necessary in their lives, including the sharing of responsibilities for the care and nurture of children as well as maintenance of the household.

Furthermore, in rural area, formation of women group is necessary where they will discuss their problem and help each other. This will facilitate their empowerment process in the rural community. In rural area, establishment of adult school is also essential to improve the skill and knowledge of illiterate women. To achieve empowerment, rural women have to be educated and education can bring awareness in them related to their social status, injustice and discrimination. Rural women should give more emphasize on children education especially girl education for their empowerment, stop early marriage and raise bargaining power to protect violence against them. Awareness programs need to be organized for creating awareness among women especially belonging to weaker sections about their right. The women need to be encouraged, motivated and educated through capacity building program and empowerment activity (Adisa and Akinkunmi, 2012). Government has to be vigilant for ensuring that there is no discrimination against the girl child and her rights are protected. Consciousness raising approach has the potential to bring about long lasting change in the position of women in the family and society.

Lastly, Government should take necessary steps about the proper application of different laws against any crime in rural Bangladesh. The application of law should be strong about dowry, early marriage, domestic violence and women's security. Already there are many notable actions are adopted in Bangladesh for the empowerment of women like Dowry Prohibition Act, 1980, Nari-O-Shishu Nirjatan Daman Ain, 2000, Acid Crime Prevention Act, 2000, Family Violence Prevention and Protection Act, 2010 and National Women Policy, 2011. But due to lack of proper application of law, many women do not get right justice and as a result, different kinds of violence (physical, psychological and economic) are continuously happening inside and outside house in Bangladesh.