

**GENDER IN
AQUACULTURE**
Division of Power and Work

Hamidul Huq

This book is written drawing upon an empirical research commissioned by Gender and Water Alliance (GWA), conducted by Center for Sustainable Development (CSD), University of Liberal Arts Bangladesh (ULAB).

Published 2015 in Bangladesh by
Center for Sustainable Development (CSD)
University of Liberal Arts Bangladesh (ULAB)
House 56, Road 4/A, Dhanmondi, Dhaka 1209, Bangladesh
www.ulab.edu.bd/csd

National Library of Bangladesh cataloguing-in-publication data
A catalogue record of this book is available at National Library of Bangladesh

ISBN 978-984-33-9945-8

© All rights reserved. No part of this book may be reproduced or utilized in any form or by any electronic, mechanical or other means, now known or hereafter invented, including photocopying and recording, or in any information storage and retrieval system without permission in writing from the publishers.

Research Team

Dr. Hamidul Huq
Shafiqul Islam
Khalid Bahauddin
Farzana Shabnam
Rizwana Sultana
Khashrul Alam
Amit Saha

Foreword

The southwest coastal region of Bangladesh belongs principally to the agro-ecological zone of the Ganges Tidal Floodplain. The tidal floodplain has an almost level landscape crossed by innumerable, often interconnecting, tidal rivers and creeks. Following the Krug Mission's recommendations (1959), the government of the day implemented the Coastal Embankment Project (CEP) under which 39 polders, coastal embankments and other engineering structures like sluice gates, canals, etc. were constructed in the southwest region. The southwest region consists of five districts in Khulna Division. The total population in the southwest coastal zone stands at 14.11 million, with a population density of 555 per sq. km. The incidence of poverty in Khulna Division is 32.1% while the national average is 31.5% (BBS, 2011). Polderisation has dramatically increased the rice production in the region. But, the agriculture was displaced by saline water shrimp farming was initiated, owned by external businessmen, in collaboration with local large farmers and local power elites in the region, taking more lands on lease from small and medium farmers applying force/muscle power. After a few decades, many shrimp farm owners left, because of losses inflicted by cyclones, storm surges, disease, etc. The farmers were back to their own land and started using a new approach of 'rice-prawn-fish' cultivation on their land. Over this period, women, apart from domestic chores, participated in aquaculture as an economic activity for the improvement of their household livelihoods.

Documentations on 'gender in aquaculture' in the polderised tidal floodplains of coastal southwest Bangladesh has not been sufficient, though the amount of material is increasing and elucidations are diverse. This particular collaborative research is based on the common research interest of both the Gender and Water Alliance (GWA) and Center for Sustainable Development (CSD), ULAB. GWA has a mission to promote women's and men's equitable access to and management of safe and adequate water, for domestic supply, sanitation, food security and environmental sustainability. To aim of the research conducted by CSD was explore the question: 'who (men and women) does which type of labor and why that

particular job is being taken' related to aquaculture and to understand the social construction of the division of the tasks involved. The research also attempts to find options to address issues related to women empowerment and gender in aquaculture as well as the household livelihoods of the disadvantaged rural people inhabiting the southwest region of Bangladesh. The complexities of livelihoods attached to land, water, decisions, and the tasks and work of women and men in aquaculture in Bagerhat, Khulna and Satkhira districts were explored and documented. This research allowed us to create a knowledge platform on the people and thus contribute to addressing their sustainable livelihoods. The findings of this study can be a guidance instrument for GWA in designing future project related to aquaculture. On the other hand, CSD can use them as teaching materials in the classroom for further reference and addressing the new research agenda.

Hamidul Huq, PhD

Professor and Director

Center for Sustainable Development, ULAB

Acknowledgement

I am grateful to the female informants of the research area for their sincere and kind cooperation during data collection despite their many tasks in household work and aquaculture related activities. I am also grateful to the male informants for their sincere cooperation in providing us with information and support in collecting data from female members of their villages and households. I am thankful to the Key Informants for giving the research team so much time during close interviews with them. I am indebted to Ashroy Foundation (Khulna), CODEC and Uttaran and their field level staff members for helping the research team during data collection.

I would like to express my gratitude to Solidaridad for their kind cooperation in collecting data from their SaFaL project areas. My sincere appreciation goes to the SaFaL project field level staff of Uttaran for their sincere assistance in identifying the informants among SaFaL project beneficiaries.

I am very much grateful to the Gender and Water Alliance Program Bangladesh (GWAPB) of the Gender and Water Alliance (GWA) for commissioning ULAB-CSD to conduct this very important empirical research on 'Gender in Aquaculture: A Study in the Division of Power and Work' in southwest coastal Bangladesh. I am very much indebted to Ms. Joke Muylwijk, Executive Director of GWA, and Ms. Nazmun Naher, Program Specialist – Gender and Integrated Water Resources Management (IWRM) of the Gender and Water Program Bangladesh (GWAPB) of GWA for extending their ever kind and sincere supports for this study and book. I am highly indebted to Ms. Shila Shahid, the Team Leader of GWAPB and all of her team members for their intellectual inputs and kind cooperation throughout the whole study process. My high appreciations and gratefulness go to Mr. Oliver Scanlan, ULAB-CSD's visiting PhD Researcher from the Dublin City University for his great contribution in English editing of this book. I owe a debt to ULAB-CSD team members for their academic and technical inputs in the study process and publishing this book.

Hamidul Huq, PhD, WUR

03 December 2015

Dhaka

Table of Contents

Glossary of Terms	8
Executive Summary	9
1. Introduction	21
2. Justification of the study	23
3. Objectives of the Study	24
4. Methodology	26
5. Ethical Considerations	27
6. Study Limitations	28
7. Output of the Study	29
8. Dissemination of the Results	29
9. Literature Review	29
10. Result and Discussion	36
10.1 Division of Task and Labor between Man and Woman	36
10.2 Exploring the Level of Involvement of Women in Aquaculture: A Reality Check	45
10.3 The obstacles to Women's participation in aquaculture	51
10.4 Gender in the market chain	53
10.5 Is it Feminization of the Workforce? Finding the Facts	59
10.6 Empowerment or Exploitation: Unveiling the Truth	60
10.7 Searching the Status of Empowerment of Women	64
10.7.1 Socio-cultural Empowerment	66
10.7.2 Economic Empowerment	69
10.7.3 Political Empowerment	74
10.7.4 Physical Empowerment	78
11. Myths regarding Women in Aquaculture	81
12. Myths in development work as often expressed by NGOs, Project people, Government officials, etc	83
13. Conclusion	84

Reference

Glossary of Terms

Arotdar: actor in the fish value chain. Arranges or negotiates sales for the sellers on a commission basis. They often act as wholesalers and are a main provider of fisheries credit to fishers / fish farmers.

Dadon: this is a type of loan given to fishers / fish-farmers by arotdars and mohajans (traditional moneylenders) on condition that fish are sold to them only. Sometimes prices are predetermined.

Foria: intermediaries in the fish value chain who purchase small quantities of fish from fishers / fish farmers far away from the market and carry it to the terminal point and sell it to the arotdar or retailer.

Gher: enclosure for combined production of vegetables, rice, fish and prawns made by modifying rice fields by building higher dikes around the field and excavating a canal several feet deep inside the periphery of the dikes to retain water during the dry season.

Ghon: fry collection periods during peak season.

Paiker/bepari: an intermediary in the fish marketing chain; he often covers the assembly function in the chain, acting as dadondar; depending on the location they are also called a wholesaler or retailer. They are also called bepari.

Shaowla: combination of aquatic plants considered as weeds.

Thana: Police station.

UnionParishad: lowest tier of local government.

Upazila: immediate tier of the district administrative unit.

Executive Summary

The study explores the important but hitherto largely unacknowledged activities that women carry out in household-based aquaculture. The women carry out the lion's share of tasks in this sector, tasks which come in addition to their everyday traditional household work. Women shoulder this role for the economic benefit of their household and the wellbeing of their family members, especially children. Women's participation in aquaculture is never opposed by husbands and other male members in the household, but women's leadership, decision making power and control over assets is not recognized. The study revealed women's leadership and empowerment in aquaculture was hindered by several socio-economic factors and certain policy and infrastructure related issues. The study also gives an insight into whether the aquaculture sector can be considered as adding to women's empowerment and providing a viable option for their sustainable livelihoods. It further assessed the context of women's leadership in aquaculture, providing a useful perspective for external actors as they formulate strategies for mainstreaming gender in the aquaculture sector in the southwest delta of Bangladesh.

Division of tasks and labor between men and women in a household having gher

In the study areas, generally, men are the heads of the family, in charge of household management and female household members depend on their earnings. Traditionally, the task of women in the study areas was mostly confined to the homestead.

In daily 'time uses' in the households, this study found that men enjoy more leisure time. Women work longer hours than men, averaging 15 to 16 hours a day. Men work on average 7 hours per day. The findings reflect that both men and women still believe in a traditional gender division of labor in which men are responsible for work outside the household (public space) and women for household work (private space).

However, with the introduction of small scale aquaculture activities in the area, there have been more recent changes in the attitude of the people towards the activities of women in various

aspects of household management, economic decision making and income generating activities, and increasingly women's involvement have grown in a number of activities associated with aquaculture. Most women reported that they manage gher (aquaculture-pond) regularly in two ways; first, women manage most routine operations, such as fertilization and feeding and, secondly, they take a leading role in day-to-day gher operations when their husbands are away from home for other work (i.e. business, selling and buying products). In various cases, children help the women catching fish from gher for family consumption, and husbands only help them when the gher is far away (beyond two km) from home and the gher water is very deep. Women's regular participation is 80 % in feeding fish and 60% in feed preparation in comparison to men. In addition, women and men both participate in post-harvest management including the sorting, grading and washing of fish; on the other hand, women's involvement is very limited in fish stocking, transporting and marketing.

This study found that though women perform the majority of tasks, e.g., 21 out of 29 tasks independently and jointly with men (mainly husbands) their work in aquaculture is largely unrecognized. Women also face other challenges, including the lack of resources, inputs, technology transfers, education, skills, finance, representation and decision-making opportunities and rights. It was found that there are fewer women in aquaculture than men due to a lack of knowledge, skills, lack of control over earning and profits, restrictions over their mobility, and a lack of access/ownership over lands and gher, weak to non-existent support from external projects of government and NGOs, and lack of other resources of fish culture.

The study findings highlight the deprivation of women and their exploitation in different forms in the aquaculture sector. One example is that women are paid low wages for their labor in the shrimp gher. The gher owners set unequal wages between male and female laborers, because according to them, not one woman has ever resisted this discrimination. The women said, it is very normal for men to get higher wages than women just because they are men. The main reason for women to continue working for low wages is that the supply of potential female workers exceeds demand, and there is no other employment option for them.

Most male respondents believed that women's engagement in aquaculture processes is very important in operating the gher efficiently and further expanding aquaculture. The gender issues should not be overlooked, they opined. To them, government and NGOs need to support women empowerment projects and community-based management of natural resources in such ways that recognize women as major contributors to aquaculture. Similarly, the processes should help both men and women to recognize the needs and relevance of natural resources for women for their participation in the aquaculture sector.

Gender in the market chain

The aquaculture sector in Bangladesh is clearly expanding. It is a sector that provides significant economic opportunities to middle and upper level participants in the market and value chain and livelihood opportunities to the rural poor who are overwhelmingly the participants in the lower segments of the chain. Shrimp is grown in ponds or gher from fry caught in the wild or supplied by hatcheries. A variety of intermediaries ensure that the fry reach the farmers. The mature shrimps are sold on to more intermediaries who ensure that they eventually reach the processors and exporters. Women, men, and children work throughout the chain, but women and children are located in segments of the chain where employment is more flexible and insecure, most notably in fry catching, and casual labor in farming and shrimp processing. Female employment is characterized by highly gendered and informal employment relations where women constitute the bulk of the casual and contingent labor supplied throughout the chain.

The dichotomy: Is it feminization of the workforce and gender pay discrimination? Finding the facts

In both project and non-project parts of the study areas, there was a significant degree of women's participation in aquaculture; however, they were located at the lower end of the market, namely fry collection and processing factories (peeling, de-heading and cleaning), which means lower power and control than their male counterparts. This study showed that only a few women own shrimp farms. Women are self-employed in the shrimp fry collection, and none of them

have been involved in fry trading. The research shows that in similar jobs as men, women get significantly lower wages. Many women, however, view the wage difference as usual and normal:

“They are men, and we are women, and that’s why they get more than what we’re getting”,

(Most woman workers revealed during interviews, January 2015)

The employers randomly set differential wages for man and woman workers, with practically no resistance. When this difference was problematised to the employers, one of them responded by suggesting that

“Equal wages for both man and woman workers for the same job with the same amount of labor is obviously an ideal one, but we continue this practice as nobody told us before, and the female workers are okay with this.”

The abundance of women in the aquaculture labor market and the increased gender pay gap reflects i. issues of economic inequality which have been entrenched in the social systems of which women are a part (women accepting or not revolting against the unequal pay) as well as ii. lack of alternative employment opportunities for women.

Empowerment or exploitation: unveiling the truth

This study in both project and non-project areas found that the gher owners prefer female workers to male workers, because women can be paid less than the man workers and usually women don’t resist such exploitation. In both project and non-project areas, data collected from FGDs found that women continue to accept the low wages only because they have no other choice, there is no alternative work.

This study found that the work environment is not free of problems for women in the aquaculture sector. During shrimp fry collection from the river young girls and women are harassed either physically or verbally. All female FGDs reported that insecurity has risen

among the vulnerable groups. Some of the major points to which all participants agreed are summarized below:

Insecurity of women and children has increased.

Although economic needs push women and children to work in aquaculture related activities, they work in a context of occupational risks, hazards as well as in the absence of social laws. The women and children have no means to challenge these obstacles.

The majority of female worker respondents stated that harassment and violence against them and the children is quite visible in the society. The main problems the female worker respondents identified are as follows:

They were not allowed to leave if they are sick;

They were jeered at and verbally and physically harassed by male guards, managers and male youths inside the gher;

They were fired from work if they arrived late.

This study showed that women are not aware of the diseases that might be caused by working in the water for such long periods. There is a lack of proper health care facilities in the study areas. Further, unequal power relationships between men and women hinder women's access to those basic health services that are available. On the other hand, the prevailing social and cultural norms prevent women from having a public role. Therefore, in the study areas there are no reported incidences of women collectively protesting against low wages and sexual harassment. The interviewed women mentioned that they have little option of seeking justice for such harassment, violence, torture or oppression. This study found that there are Microfinance Institutions (MFIs) like ASA, BRAC, Grameen Bank who work with the rural poor in the study areas but their major focus is limited to credit disbursement and not much attention is given to social justice issues. In project areas Solidaridad Network Asia, in partnership with the Embassy of the Kingdom of the Netherlands in Bangladesh, has begun to implement the Sustainable Agriculture, Food Security and Linkages (SaFaL) project which is providing technical support to

fisheries, aquaculture and horticulture but this includes no activities focused on the empowerment of women. FGDs reported the lack of organizational support to women and children in the study areas which is depriving them of any justice.

The status of women empowerment

Socio-cultural empowerment

Women are working in gher because of their economic hardship and insecurity. Most of the male respondents in Satkhira district said,

“It is not possible to meet household expenditure through one person’s income. So we send our wives against our will to work in the gher.”

One of the key informants in Bagerhat, a fish trader said,

“Society (people of the study areas) sees it as undesirable that a woman works in the gher”.

With regard to the decision making in the household, men commonly perceive their role to be superior to that of women. During the FGDs, men said that they think ‘men have the right to dominate and control the family decisions’. As they emphasize their own status at the expense of women, they assume the primary role of safeguarding the status and welfare of the households, particularly concerning household income, and making other important decisions in buying, selling or leasing land, selling cattle etc. Some women during the FGDs in the project area of Khulna, reinforced men’s perceptions as stated above.

Economic empowerment

Almost all men and women suggested that girls should get education during FGDs. The majority of them think that parents should secure higher education for their female children. Both men and women think educated girls who generally have jobs are comparatively happier in their conjugal lives. They also believe educated daughters can be married off without dowry and can also take care of their

parents in the future. A respondent at Bagerhat (project area) stated in an individual interview,

“The daughter of Kadir Mia is a primary school teacher. She was married to a man from a nearby village a few years ago without any dowry. After meeting her own household expenditure, she gives some money to her parents. Her husband does not mind if she helps her parents from her own earnings.”

But often parents do not think spending money on girls’ education is worthwhile as they will not get any return in the near future if she does not get a job. Some of the men and women said that it is very difficult to get perfect matches for highly educated girls.

In the study, data from both project and non-project areas found that, men and women do not get the same wages for the same work. In some work (weeding, earth work), women perform to a similar standard as men, if not better. However, they do not get same wages for the same work. One of the man respondents assertively said, *“Women do not work like men. They are weak and they are very slow in working.”*

Table 1: Wage distribution of gender in the study area [source: FGD with the women informants]

Area	Wage/ day in Taka	
	Men	Women
Shatkhira	170-180	120-130
Khulna	220-300	200-220
Bagerhat	300-350	200-250

Respondents in the study areas think that men have the responsibility to maintain their family and the income of women is treated as a bonus. Most of the female workers said,

“I work in the gher to reduce the economic hardship of my husband.”

It was seen from this study that, while both husbands and wives

participate in the decision making process concerning family income and expenditure, the husband still plays a dominating role.

Many NGOs give micro credit to women in the project and non-project areas but where and how this loan will be used or how it will be repaid depends on decisions made by men. Most of the time, men decide where the money is to be used while women face the pressure of loan repayment as her partner is often not at home at the time of repayment. During FGDs most women said that they do not like to go to public places like the bazaar as these belong to men in general. But women of younger age who differed from this general perception suggested that in modern times women should take the responsibility for much of the work outside the home (for example going to school for education, hospitals, clinics etc.).

Political empowerment

Man and woman both take part in voting but the ratio is not the same. Some women cast their vote based on their own judgment, but most of them do so only after discussing the issue with their elder family members (father-in-law, mother-in-law, father and elder brother) or their husbands. *“Before casting my vote I consult with my husband”*, said one of our woman participants. The majority of the men identified their wives’ participation in development work as a cause of developing tension in household relations. However, they welcome such participation on the part of those women who are distressed or who do not have a male family member to support them. It should be noted here that women’s participation in development is relatively a recent phenomenon. In the beginning people had a very bad opinion about women’s participation in development work. Some elderly and religious leaders convinced most people to think negatively about such work, saying that it would lead to people converting to Christianity and after death they would be buried in a black cloth. But today, people do not have such bad perceptions about development work implemented by NGOs, if genuinely implemented. They think that women may participate in development activities if it is within their own village. Most men think their wives should participate in development activities if they only involve women. Some men consider such work as anti-religious, which may cause harm to their family; some also think that NGOs are working to destroy their

family life by bringing women out into public places. Contrary to these men, most women think that they should be involved in development work (by NGOs) as this helps them to contribute to the welfare of the family.

Most men believe that women working in a leadership role where they are above male members cannot perform better than men due to some structural problems. To them the most difficult problem for women is their own security. Many think politics has become violent and only strong men can become successful politicians. They think women can only survive if they are backed by their male family members. Moreover, men think that women's physical structure also makes participation in politics difficult for them. For example, they suggested that women should not participate in public functions like meeting local people in emergencies for distribution of relief that help to build a positive image for politicians, due to security issues. When discussing female UP members, most men said they should not attend such public functions unless there is any special need or emergency meeting. If they need to attend, those that do should be accompanied by a male family member as a form of protection.

They also added that women should not be involved with infrastructural development issues, relief and rehabilitation activities, social justice and law and order issues as these are subject to power politics or, in other words, belong to the male domain. However, some women and a few men said that women members should be involved in all kinds of activities as UP members. In general, the majority of both men and women think a politician needs to take authoritative decisions which women cannot make. As a result they should prioritize their family responsibilities. For example, one male respondent said in a FGD, *"Women are so simple that they cannot even maintain their households, how will they participate in a complex game like politics?"*

Physical empowerment

The study found that families are dominated by men whilst girls are depended on the male head of the family for decision making concerning marriage. But in life of a couple, husband and wife take decisions jointly about family planning. One of the male respondents

in Satkhira said, *“we sit together for discussion and exchange our opinions and finally take the decision about family planning. It is difficult to take decision with only one person.”* In another example from Khulna district, one female respondent said that *“family planning is not the task of the man; only the woman should take the decision about this matter.”* Health is one of the major issues for those who are working in the gher. From this perspective, female workers are more susceptible to waterborne diseases. Health care facilities are not provided by gher owners for workers. One female worker said *“Gher owners never care about our health, they just want work.”*

One key finding is that the three study areas i.e. Khulna, Bagerhat and Satkhira have huge water problems, being polluted by arsenic and high levels of salinity. In these areas, women fetch water from long distances and men do not help them with it. One man respondent from Khulna said *“I do not have time to fetch water; I am busy with earning income.”* In study areas, most of the respondents use sanitary toilets provided by the government but there are none in the female workplace. During menstruation, women do not work at the gher. One female respondent said *“we cannot work at the gher because there are no toilets.”* In addition, people in the study area think that the gher is a holy place, women are a source of pollution during menstruation, and thus they should not work during that time.

Men's perceptions about sexual and reproductive health care during pregnancy suggest more caring attitudes towards women. During the FGDs most of the younger women reported that their husbands are more caring with regard to their health during pregnancy. For example, they stated that most of their husbands accompanied them to health clinics or doctors. However, women who were older (above 50) said that their husbands consider pregnancy as a natural phenomenon, so they are not too bothered about this. They think women should perform their regular activities during pregnancy as they would when they are not pregnant. It seems that men consider wife battering a way to exercise their power. During the FGDs most men said that husbands have the right to beat their wives for any wrong doing. They usually think that they have authority and control over their wives. Men also believe, Islam has given men the power to control their wives. Husbands think that if wives are not battered, they do not obey their husbands. There were very few men who

did not agree with wife battering as opposed to consultation with their wife in solving problems. Many other respondents, including women, gave the same opinion:

“Women should obey their husbands...the husband has the right to protect as well as to rule over his wife...and most of the time problems arise when both the husband and wife argue with each other...in such situations one should keep silent...the wife should do this...”

Men’s perception of sexual harassment or eve teasing suggests a strong masculine bias. In the study areas, both project and non-project, during FGDs most men said that women should be careful while going out of their houses. They think women should cover their bodies with the Burkha (veil) to protect them from the gaze of other men. Most men expressed the opinion that they are not against women’s mobility and a ‘good girl’ never becomes the victim of eve teasing or sexual harassment, as she knows how to move alone in public. For example, a male respondent stated, “A girl should keep herself safe from evil eyes for this she should wear decent clothes and maintain normal porda; with these she can do anything she wants for her prosperity”. But women generally opposed this view and suggested that in many cases, even though women were wearing veils, they were still the victims of eve teasing or sexual harassment. They also stated that many young school going girls also become victims of such violence even though they are not fully grown up. Therefore, they blamed men for their attitude towards women for such evil incidences.

Myths regarding women in aquaculture

The increasing role of women in aquaculture has resulted in the emergence of a number of myths surrounding the practice. Although generally baseless, such myths continue to exercise a high degree of influence within local communities, and a commonly accepted as fact. They include:

Myth 1: Women are unable to do hard work.

Myth 2: Gher is a holy place; women should not do work in the gher during menstruation.

Myth 3: Women have low intelligence and intellectual capacity so it

is easy to cheat them in weighing of products.

Myth 4: Women should not go to the market place.

Myth 5: The wife should not hold a position superior to her husband.

Myth 6: Women have no need to get high wages; they should not be equal like men.

Myth 7: Women must not go outside as they are good at household chores.

Myth 8: Female leadership is not good for the family.

Myth 9: The man who takes suggestions from his wife is a Habla (fool/idiot).

The obstacles to women's participation in aquaculture

A detailed review of field data of involving women in aquaculture in the study areas revealed that women are gradually more involved in these activities. However, women's participation is hindered by several socio-economic constraints. Besides, there are certain policy related and infrastructural issues that creates barriers to the enhancement of women's leadership in aquaculture. A brief account of the most commonly reported constraints is presented in Table 2.

Table 2: Constraints to women's participation in aquaculture

Challenges
Low literacy
Limited access to skill development using modern technology
Lack of government strategies for addressing gender issues
Women's work is not recognized
Risk of credit and finance and control over it
Lack of women's organizations and female extension workers
Lack of understanding about women's engagement in the supply chain
Male dominated society: mobility is limited for women, outside work is frowned upon
Lack of access to resources
Lack of access to the organized market (forward and backward linkages), rural infrastructure, absence of product marketing system
Men who harass women are left free whilst women are blamed: "blame the victim"

1. Introduction

In Bangladesh today, more women are employed in economic activities than ever before. Apart from domestic chores, Bangladeshi women work in offices, commerce and agriculture including fish and shrimp farming. At the same time, while the agriculture sector in Bangladesh was downsizing its personnel, the aquaculture sector was absorbing more people than ever before. One consequence of all these shifts was the higher proportion of women in the active labor force. Woman workers now constitute one fourth of all those employed (BBS, 2009).

Unlike the agricultural sector where women tend to be more visible, women in aquaculture are not very noticeable. Globally, at least half of the population involved in small scale fisheries and aquaculture may be women, including those actively engaged in fish processing, distribution and marketing (FAO 2009). However, for Bangladesh, no known survey of women involved in aquaculture has been undertaken despite the fact that, in shrimp production, women and children from poor and middle income families do significant tasks in several steps of the whole value chain. The utilization of household labor is very important for small and marginal farmers as it does not require direct cash money for wage payment thus benefits/profits derived are higher. The *FAO 2012 State of World Fisheries and Aquaculture* highlighted gender mainstreaming as one of the key issues facing the fisheries and aquaculture sector stating: “Gender mainstreaming is not only a question of social justice but is necessary for ensuring equitable and sustainable human development. The long-term outcome of gender mainstreaming will be the achievement of greater and more sustainable human development for all.”

Employment in income earning activities is widely accepted as an indicator of women’s status. In general, this is because a woman who is employed is more likely than an unemployed woman to a) have direct access and control over economic and financial resources; b) be able to participate outside the domestic sphere; c) be in contact with people other than the immediate family, and hence, have exposure and access to the world outside the home; d) be able to translate the autonomy required for and embodied in being employed to autonomy and control inside the home. However, whether employment does

have all, or even some of these overlapping beneficial effects depends on different work-specific factors such as the nature of the work, where it is done and for whom, whether cash is earned, as well as culture-specific factors, such as social acceptance of women's work outside the home, and patriarchal control over women's earnings (Kishor, S. and Neitzel, K. 1996). They now tend to play a stronger role in economic decisions for the management of their households, including those concerning the education of children, attending social functions, inviting guests and attending religious functions (Shirajjee et al 2010). The same study suggests that women's involvement in aquaculture provides three basic improvements: economic, nutritional and social benefits, which are assumed to be interlinked in order to empower women. They have improved their socioeconomic conditions through their involvement in aquaculture activities. Such improved conditions were inferred from a number of qualitative indicators, including food consumption, sanitary and drinking water facilities through tube-wells, improvement of housing structures and the education of children. One study (Shiraji et al 2010) also suggests that women have broadly improved their standard of living, purchasing power and status as economic actors. Women respondents cited several examples of how the standards of living of their families have improved since their participation in aquaculture.

Unlike the traditional agriculture and livestock sector in Bangladesh where women do a significant part of the work, active involvement in aquaculture is yet to be seen in progress. In the case of shrimp farming, the Department of Fisheries (DoF) estimated that in 2010 there were over 200,000 farms covering approximately 0.2 million ha in coastal districts of Bangladesh. Wherever small-scale shrimp farming is conducted, women are engaged in a wide array of tasks. They repair dykes and plant crops on them, clean ponds, select and buy larvae for stocking, acclimatize and release the fry, collect feed and disperse it, monitor growth and guard small scale shrimp ponds located near their homes. As they participate more in fish farming activities, women have a greater sense of ownership (Kamaluddin, 2002, Shiraji et al 2010). Small-scale aquaculture communities tend to be poor and vulnerable due to landlessness.

The traditionally accepted role of women changed when they became involved in small-scale shrimp production and earned independent

incomes. The supplemental earning enabled them to meet some of their families' immediate practical needs (Halim, S. et al. 2001). The change in women's tasks was largely consequent on land use changes. A new land tenure system adopted by the farming community during the late 1990s led to the fragmentation of large-scale farms into smaller ones. Simultaneously this allowed easier access of women and children to productive economic activities such as fish farming. Small holdings enabled freer access for local land holders to develop small-scale farms for Golda shrimp (*Macrobrachium rosenbergii*) and Bagda (black tiger shrimp, *Penaeus monodon*) aquaculture (Nuruzzaman et al. 2001). In 2010, a Department of Fisheries (DoF) survey indicated that in over 65% of cases farm sizes in Khulna district were reduced from 0.01 to 0.5ha for Golda shrimp; and over 30 % of farms in Bagerhat district also were split up. By 2009 over 68 % of the Bagerhat farms were from 0.01 to 1.0 ha. In both cases the small-scale farms were owned by individual households.

Women's contribution to small scale aquaculture, as to any sector, is often unrecognized and the real benefits from their involvement have not been objectively assessed. The present study focuses on women's participation as compared to that of men in small scale aquaculture in three coastal Districts of Bangladesh; Khulna, Bagerhat and Satkhira.

2. Justification of the study

This particular empirical study arises from a research interest common to both the Gender and Water Program Bangladesh (GWAPB) and a university based research organization, Center for Sustainable Development (CSD) at the University of Liberal Arts Bangladesh (ULAB). The Gender and Water Alliance (GWA) has a mission to promote women's and men's equitable access to and management of safe and adequate water for domestic supply, sanitation, food security and environmental sustainability. It believes that equitable access to

¹ The purpose of the GWAPB is to support water programmes co-financed by the Embassy of the Kingdom of the Netherlands (EKN), civil society groups, water professionals, and government organisations in Bangladesh to adopt and implement a gender mainstreaming strategy in their water related policies and practices, in order to achieve measurable and positive impact on the lives of poor women and men. The Gender and Water Alliance (GWA) a Netherlands based INGO has developed this programme.

and control over water is a basic right for all, as well as a critical factor in promoting poverty reduction and sustainability. Thus the two organizations were able to collaborate effectively to address the question: 'who (men and women) does what type of labor and why they do that particular job' as it relates to aquaculture in Bangladesh, and to understand the cultural construction of this division of tasks. This research question is closely related to CSD's mandate, which includes a focus on sustainable water management and the inclusion of women. The issues to be addressed in the research are related to 'Water and Sustainability', a key issue in CSD's contribution to the building of a knowledge based society. The complexities of the livelihoods attached to 'water' in the three research areas: Bagerhat, Khulna and Satkhira, are explored and documented in the research. This will allow the creation of a knowledge platform regarding the people (women and men) and thus contributing towards addressing their sustainable livelihoods. The findings from this study also comprise a guidance instrument for the GWA, with a focus on the Gender and Water Program Bangladesh (GWAPB) in designing future projects related to aquaculture. CSD can use these findings as teaching materials in the classroom for further reference and in addressing a new research agenda.

3. Objectives of the Study

The main objective of this study is to explore and document the distribution of tasks between men and women involved in aquaculture, and understand the multiple indicators that determine men's work and women's work in the study region.

Specific objectives of the study are:

- To identify the current division of tasks in aquaculture; to explore who does which type of work and understand the factors that determine this division of labor.
- To explore the indicators those determine segregation of tasks between men and women in aquaculture.
- To compare between a 'non-intervened' (if it exists) and an 'intervened' situation with regards to decision making processes.
- To explore the level of involvement of women in aquaculture groups, and the reasons (if any) behind less involvement in

aquaculture groups.

- Explore and compare the level of empowerment (Economic, Socio-cultural, Political and Physical) of women involved in aquaculture.
- To understand the rights and status of men and women in aquaculture in terms of fresh water and saline water shrimp and fish production, collection, processing and marketing.
- To understand the attitude of both men and women towards women empowerment in aquaculture.
- To understand the level of women's participation in homogeneous and heterogeneous groups and to assess the differences if involved in aquaculture.
- To identify the myths regarding women in aquaculture and their influence on women's participation.
- To produce case studies related to women's empowerment through aquaculture.

Research Questions

- Who does which type of task in aquaculture and why?
- Who decides the choice of task and expenditure pattern in relation to aquaculture?
- Is there a strict line between the work of men and women, and if so why?
- Is the work of women equally recognized in aquaculture, and if not, why not?
- What type of attitude is common at the local level pertaining to the division of tasks and their response in relation to such segregation?
- What constitutes the empowerment of women in aquaculture (socio-cultural, economic, political and physical)?
- How far is the decision of women to work in aquaculture a conscious choice? Is this a choice or a situation that forces her to take up the task?
- What would women like to see to attain their real empowerment?
- What are the differences in functionality, feasibility and good practices associated within and across homogeneous and heterogeneous groups in the project area? [It is argued (Huq, 2001) homogenous groups, especially women's groups in Bangladesh context, function better than heterogeneous (men and women) groups in running projects and developing women's leadership and empowerment].

4. Methodology

The study is mostly qualitative in nature. It was conducted during the months of December, 2014 to February, 2015. Data collection was carried out in 15 villages in Khulna, Bagerhat and Sathkhira districts. Nine of these 15 villages were selected from three districts i.e. three villages from each district considered to be **without interventions** from the Sustainable Agriculture, Food Security and Linkages (SaFaL) project, and six villages were selected from areas where there were such interventions (see Table 1). We termed these areas '**non-project**' areas.

Field data were collected from three districts including Bagerhat, Khulna and Sathkhira. A total of nine villages was selected from the aforementioned three districts (three villages from each district) to conduct the part of the study focused on 'project free' situations. Primary data has been collected using individual interviews, group discussions, Key Informant Interviews (KIIs) and Focused Group Discussions (FGDs) using a set checklist and guidelines.

A similar approach was adopted in areas where the Sustainable Agriculture, Food Security and Linkages (SaFaL) project is working ('**project areas**') to compare the situation and the position of women and men where the Sustainable Agriculture, Food Security and Linkages (SaFaL) project interventions are either currently taking place, or took place in the past. A total of six villages were identified in the three districts mentioned above (two villages from each district) to conduct this part of the study. Primary data once again has been collected through in-depth interviews, group discussions and focused group discussions using a detailed checklist and open questionnaire. Secondary data were examined critically and organized to get in depth understanding of the structure of women's empowerment and how culture constructs the division of tasks in aquaculture. In this case, the initial three weeks of the study were used to conduct a literature review through assessing data from project documents, reports, relevant studies and other relevant secondary sources.

The analysis of the qualitative data was then analyzed. A content analysis was conducted, indexing data into various categories in order to find commonalities, differences and patterns. For this a

‘grounded’ approach was used, which was originally advocated by Glaser and Strauss (1967). In this approach, data is not pre-coded until collection to find out how it functions or nests in its context, and to determine how many varieties of it there are. The data is presented in a narrative style with verbatim quotes to support the findings. The study objectives, researcher’s role, informants’ profile, selection criteria, and data gathering context have been specified. Data was triangulated through multiple methods to strengthen reliability as well as internal validity.

Table 1: Detailed information regarding the sample size is given below for both project and non-project areas.

Districts	Non Project Area			KII [18]	FGD [6]	Case Study [3]	Interview (individual & group) [27]	Total
	Upazilla	Union	Village					
Satkhira	Debhata	Parulla	Chelte tola	2	2 FGDs per district	1 case per district	9 group interview and 18 individual interview	
			Parulla	2				
			Badortola	2				
Khulna	Dumuria	Shovna	Shibpur	2				
			Shovna	2				
			Madartola	2				
Bagerhat	Chitolmari	Sontospur	Dari-Umazuri(East para)	2				
			Dari-Umazuri(West para)	2				
			Daritalok	2				
Three districts, Nine villages				18	6	3	27	Sub Total= 54
Districts	Project Area			KII [12]	FGD [6]	Case [3]	Interview (individual & group) [12]	Total
	Upazilla	Union	Village					
Satkhira	Debhata	Kulia	Tiket	2	With Members of Mixed group (Male group:3, Female 3)	1 case per district	6 group interview and 12 individual interview	
			Norarchok	2				
Khulna	Dumuria	Shorafpur	Akna	2				
			Tipna	2				
Bagerhat	Chitolmari	Sontospur	Umajuri	2				
			Fakirhat	Mulghar				
Three districts, six villages				12	6	3	18	Sub Total=39
Days for Data Collection (excluding travel days)				8 days	6 days	6 days	7 days	Grand Total= 27days

5. Ethical Considerations

Most authors who discuss qualitative research design address the importance of ethical considerations (Locke et al. 1982; Marshall & Rossman, 1989; Merriam, 1988; Spradley, 1980). First and foremost, the researcher has an obligation to respect the rights, needs, values,

and desires of the informant(s). This is of particular concern in this study where the informant's position and institutions are highly visible. The following safeguards were employed to protect the informant's rights: the research objectives were articulated verbally and in writing so that they were clearly understood by the informants (including a short description of how data would be used), oral or written permissions to proceed with the study were taken from the informants where necessary. The informants were informed of all data collection devices and activities, verbatim transcriptions, and written interpretations, and reports were made available to the informants. The informant's rights, interests and wishes were considered first when choices were made regarding reporting the data, and the final decision regarding informant anonymity rested with the informant.

6. Study Limitations

Due to blockades (*hartal*) called by political parties during our field work, it was not always possible for the study team to move freely in the field, which was a constraint on establishing good rapport with the respondents. The team had tried to address this issue by means of data triangulation using multiple methods and data sources. Whenever and wherever data collection team members had doubts on a particular issue or information given by the respondent/s, they marked it and discussed with the other team members to verify from other sources. In some cases, when a person gave any information that the team members considered valuable, it was later cross checked with the other family members or neighbors.

Time constraints faced by the informants was a limitation during interviewing. The study was conducted during the harvest, and so women were busy with managing paddy and men were mostly in the field. Moreover, data collection at night was almost impossible due to the overall political unrest in the country during the data collection period.

It was difficult for the interviewers to reach the respondents at remote places or often to take interviews of older people. It was also very difficult to interview the women alone in most cases, as they were surrounded by other family members who tried to influence their responses.

Getting a written consent was a very difficult issue in this research as the respondent was not ready to give one. In most cases they also did not allow us to use voice recorders for recording the conversation. The interviewers had to employ the help of a note taker. The interviewers noted direct quotations and local terms; the dialogues were preserved without editing in order to represent the participants' spoken words accurately.

Bias originating out of the researcher's own subjective position during data collection was often unavoidable regarding some critical social issues like abuse, marriage, wife battering etc. which might have affected the subjects' responses. Moreover, it was often challenging for the researchers to ask questions about some private aspects of the respondents' lives.

7. Output of the Study

The output of this research has been made available in the form of this book report and a policy brief.

8. Dissemination of the Results

- Book, aimed at a general audience and broadly disseminated.
- Seminar to present the findings of the study.
- Academic paper to be published in peer reviewed international journals.

9. Literature Review

Bangladesh is fortunate enough having extensive water resources scattered all over the country in the form of small ponds, beels, lakes, canals, rivers and estuaries covering an area of about 4.34 million ha(DOF, 2001). Inland aquaculture together with coastal shrimp culture accounts for 40% and the inland open water capture fisheries contribute 40% of the total production. Development of these two sectors is vital in the context of making a major impact on production and the economic wellbeing of the rural people of the country (DOF, 2001). Fisheries are the second sub-sector of agriculture in Bangladesh. The export of fisheries is also the second most important source of export earnings and fish provides 60% of

animal protein. Fisheries hold great promise in maintaining a steady rise in contribution to the national GDP (Ahmed et. al., 2001). Presently 1.4 million people are engaged full time and 12 million part-time in the fisheries sector for livelihood and trade. In addition, over three million fish and shrimp farmers are cultivating fish both at subsistence and commercial level (Alam, K., 2010).

In Bangladesh, about half of the population are woman. Traditionally women have always played a major role in agriculture. They have always been intimately involved in the agricultural production process but a broad division of labour exists whereby women are mostly engaged in home based agricultural work while men perform agricultural activities in the field (Ahmed et. al., 1993). The study reveals that besides regular household work, 43% of women are involved in activities related to agriculture and 15% had taken agriculture as an additional occupation. It can, therefore, be assumed that about 58% of women are directly or indirectly engaged in agriculture related activities. Fishing is the full time occupation of many men; however, the involvement of women is also significant (Baluyut, 1999). Nevertheless, the full time engagement of women in fisheries is no longer a rare scenario. They are directly or indirectly engaged in activities like making fishing nets, gears (fishing instruments), repair and maintenance of the gears, sorting of fingerlings especially in coastal areas, fish processing, transportation, marketing etc. Yet, most women in fisheries lack access to physical and capital resources, to decision-making and leadership positions, to training and formal education (Halim, S. and M.K. Ahmed, 2006). Access to these critical resources and services would improve the efficiency, profitability and sustainability of their activities.

Although large-scale fisheries development projects, mechanization and improved technology may increase the productive capacities of fisheries but at the same time they can also increase the post-harvest workload of women. This extra burden is often undertaken without a rise in pay or at the expense of other possible income-generating activities. If a fisheries activity is enlarged or mechanized, it often becomes the domain of men. Women should be equal partners and productive participants in fisheries activities that will improve their own and their families' nutritional and living standards. They should be given the opportunity to acquire appropriate technologies

that will enable them to contribute effectively to sustained fisheries development and growth (Sultana et. al., 2001). It is, therefore, essential to increase women's participation and decision-making in fisheries development policies. Women and gender programs in fisheries cannot be left to the mainstream gender and social welfare agencies as these seldom give priority to fisheries. The fisheries' sector must develop its own gender approaches. In addition, within the fisheries sector, family and community-based approaches rather than women's activities are more likely to succeed and prove to be sustainable (Shelly, A.B. and M.D. Costa, 2001).

In the coastal areas, many women are engaged in collecting seed, transportation, and the marketing of the fingerlings. This has created self-employment opportunities for women. Dry fishes can be marketed during the lean season to make a good return on their investment. Besides, they can also buy fish from trawlers and deep-sea fishing boats directly and undergo the fish drying process. Marketing of the products can also be an important area for the involvement of women in greater numbers. In most regions, the large boats used to fish off-shore and deep-sea waters have male crews, while women manage smaller boats. Despite this active participation of women in the sector, their work is not fully recognized within their family and society (Sabur, S.A. and L. Rahman, 2008).

Significant numbers of women engage in fishing with small implements, wading and gleaning the shores for shellfish and collecting seaweed. In fishing communities, in addition, women are mainly responsible for performing the skilled and time-consuming jobs that take place on-shore, such as net making and mending, and processing and marketing the catch. The lack of women's access to livelihoods, assets and empowerment opportunities represent a further barrier in the livelihood systems of coastal fishing communities of Bangladesh. It seems important to identify key constraints hindering the participation of poor fishermen, particularly women, in relation to relevant institutional and policy decision making processes in the marine fish distribution and marketing system (Haque, M.T., Ahmed, M. and Forbes, A. 2000). It is recognized by their families and within wider society that women play significant roles in small-scale aquaculture development, and that the aquaculture activities of women at village level has enhanced their position in families.

Women tend to play a stronger role in economic decision making within the home regarding issues including the education of children, attending social functions, inviting guests and attending religious functions. Women's participation in aquaculture has changed the attitudes of family members, including their husbands, mothers-in-law and other female relatives as the additional income from their aquaculture activities helpsto meet their household responsibilities (Shiraji et al 2010).

Women play a crucial role in aquaculture production in many Asian countries. For example, in Cambodia, higher yields are obtained from fish ponds managed mainly by women. In Thailand and China, they often bear the sole responsibility for agricultural and aquacultural production because of the migration of men to the cities (Ahmed, N, 2008). Small-scale aquaculture development is increasingly considered as a means by which the livelihoods of the poor, including women, could be improved. The improvement of livelihoods through a land-based production system seems quite feeble. The understanding of the poor's assets, in terms of human, natural, physical, financial and social capital and strategies to cope with external factors such as shocks, trends and seasonality (i.e., vulnerability context) and institutional, commercial and cultural structures and processes, can provide avenues to target development strategies more adequately to the poor and support them to achieve new livelihood outcomes (Carbonara and Stefano, 2012).

Women's participation in aquaculture has traditionally been recognized by studies largely from an instrumental perspective. In rural Asia, women are excluded from participation in community-level management of natural and other resources, from relations with external agencies and from political representation. The exclusion of women from management functions hinders the strengthening of a community's capabilities (Datta et al., 2010). Also it ignores an important portion of social knowledge which leads to inefficiency in resource use and retards the overall development of the community's social capital. The activities of women in fisheries encompass social and economic tasks both within and outside the family. Women spend a major part of the day doing household chores. Some women are simultaneously involved in fisheries-related work, along with other income-generating activities (Haque et. al., 2010).

Dias and Joseph (2010) analyzed the Bay of Bengal Project (BOBP) experience and found that the potential of women's involvement in aquaculture has often been overlooked and Mosse (2009) noted that the activities of women in aquaculture are mostly ignored. Bhaumik et al (2008) identified the socio-economic problems as perceived by rural women-folk which impeded their participation in various inland aquaculture activities in West Bengal, India. Chapman, (2000), similarly highlighted how the role of women in aquaculture is less recognized by society in South Asia regions. Aquaculture is becoming very important in the region but the role of women has often been adversely affected. Gopalakrishnan, (2001), has illustrated how, though women in India and Bangladesh are involved in various facets of shrimp farming, including pond construction, seed collection, collection of feed materials and preparation of feeds, pond maintenance and post-harvest handling, their work is not acknowledged. Yen (2008) studied women in aquaculture research and development in Vietnam found that women have been deprived of good education, improved status and active participation in development due to the cultural barrier that exists in traditional society. However, the situation is rapidly changing and in recent years emphasis has been laid on providing opportunities for women's participation in all sectors of fisheries.

Ahmed (2006), Begum, R (2001), and Cecile, B et al (2010) all agree that very little research has been conducted in Bangladesh to examine the nature and extent of the involvement of women in the aquaculture sector and the impact of such involvement on women's status and gender relations in the household and in the community. One exception is Weeratunge, et al (2012), who conducted a study on the aquatic agricultural system in five regions including Bangladesh, Cambodia, Philippines, Zambia and the Solomon Island to examine the relation between role of gender equity and economic improvement. The study found that, men are earning more than women in four program countries; the disparity between female and male earnings was the most severe in Bangladesh. The study demonstrated that, there is a difference in the nature and the extent of involvement of women in aquatic agricultural system in these five countries. Gender disparity was found in access to information about agriculture, fishing and in other services in all five countries.

The involvement of women in production and marketing does not necessarily assure their control over assets and well-being. The study revealed that there is a definite relationship between the participation of women in aquatic agricultural production and in the access or control over assets. Weeratunge and Snyder, 2009, shed light on the gender employment in fisheries and aquaculture in the Africa and Asia Pacific regions. According to this paper, gender differentials are responsible for lower labor productivity in this sector as women constitute a larger portion of labor in agricultural and fisheries activities. The state restricts women's access to fisheries resources and assets through their regulatory norms, customs, and laws and so on (FAO, 2006). The unpaid pre and post harvesting work of women remains unacknowledged although they outnumber men in processing and trading fish around the world. The paper clearly illustrates how employment in fisheries and aquaculture is gendered, being embedded in wider, social, political and cultural structures and processes.

Shindaini and Baqui, 2012, conducted a study on the impact of shrimp cultivation on the social life of rural areas in Khulna district, Bangladesh. According to the study, most of the respondents (77.33%) affirmed that shrimp cultivation has increased the demands for dowry and of having dowry and 64.1% of the respondents opined that they faced problems due to the change in occupational status in Bujbunia village. In the study 65% of the respondents said that shrimp culture has created serious social problems such as theft, robbery, murder, rape etc. in that village. Shrimp cultivation increased the inflow of saline water into the polder areas that causes the pollution of fresh water ponds used by the population as the main source of drinking water during the dry season. Basically, the study demonstrated that shrimp cultivation seriously affected the lives of the rural poor, especially women and children. In 2010, Nwabueze stated that women must be empowered through education and training, political, and economic empowerment by way of having access to funds enhancing their roles, and full participation in sustainable aquaculture development. Rural women engaged in subsistence aquaculture, which has helped in improving the quality of their families' lives. Women have received loans from government for buying fishing equipment, such as nets, paddles, floats, and other inputs in delta state. Women have more roles in post harvest activities than men but their contribution has

been overlooked. If paid workers had to carry out this work, in the place of women's free labor, it seems unlikely this would be the case.

In addition, Halim, S. (2004) found that the adverse impact of shrimp production on the environment can also negatively affect the situation of women. It points out that women spend enough time and energy for at least three hours each day collecting safe drinking water and fuel due to the adverse environmental situation. During peak periods for fry collection (locally known as Ghon), from rivers and canals, women spend the whole night collecting fries. This period begins in the month of Boishak (mid-April), peaks in the month of Jaishtho (mid-May) and continues until the month of Bhadro (mid-September). The gher owners prefer female workers because they are paid less than male workers and usually women never resist such exploitation. The preparatory work for ghers begins from Choitro (mid-March) and Boishak (mid-April) when the ghers are prepared for stocking. Generally, women and children are engaged in the ghers for five hours a day and for this they are typically paid between Tk. 45 – 50 and Tk. 15 -20; men are paid more than double this rate.

Alam T., Shahi M., Shifuzzaman, and Lasker (2012) conducted a study on the south west coastal region to examine the economic prospects as well as the violation of human rights in the shrimp farming sector. The study revealed that shrimp cultivation has increased the foreign earnings of Bangladesh; exports of 210.28 million pounds of fish products were reported in the year 2008-2009. Shrimp cultivation has helped in the establishment of new business opportunities including poultry bird farming, feed mills etc. However, on the other hand shrimp cultivation poses a threat to the human rights issues of local marginal and poor people, who are often compelled to leave their land; women are disproportionately more vulnerable to this condition. Crow and Sultana (2002) found a direct relation between gender, class and access to water in Bangladesh. According to the authors, changes in the use of water arising from the expansion of the shrimp export industry in Bangladesh have substantial implications for gender and class relations. They found that the richer farmers forcefully took land from poorer farmers which led them to become laborers who collect wild shrimp larvae from coastal rivers and marshes. Women have to collect water for drinking, cooking and other purposes from distant locations due to the increase of shrimp

cultivation as it accelerates the intensity of salinity in the ground and surface water. Finally the study reported that this situation is responsible for the reduction of income of women and hampers their social situation of women.

Value chains in the fisheries sector are dynamic, diverse and complex systems for men and women that undertake different and changing roles depending on local norms, control, mobility, technology type, extent of commercialization and product. In each link in the chain, wealthier groups of men play dominant roles. In this chain, poor members have weak bargaining power and control over goods and services and they are vulnerable to the exploitation of wealthier groups. Female workers are disproportionately more at risk to these economic, social and cultural problems (World Bank, 2009).

10. Result and Discussion

10.1 Division of task and labor between men and women

In the study areas (both ‘project’ and ‘non-project’ areas under



this study), generally, male household heads direct household management in rural communities and the female members depend on the earnings of men. Though fishing has been traditionally men’s work, women and children have gradually become involved in fishing activities. Traditionally, the task of women in the study areas was mostly confined to the homestead due to socio-cultural and religious restrictions.

Female member of the household is to take care of domestic animals.

This study showed “There have, however, been more recent changes in the attitude of the people towards the role of women in various aspects of household decision making, household management, economic decision and income generating activities, and a number of activities associated with aquaculture increasingly involve women”. These findings indicated that at present the involvement of women in aquaculture, and their importance within the family are increasing.

Table 2: Divisions of women and men’s task and labor in aquaculture [as per the study findings]

Aquaculture activities	Man	Woman	Both
Dig pond/gher	X		
Carry mud		X	
Prepare gher dyke			X
Mixing fertilizer	X		
Repair dyke		X	
Prepare canal			X
Disseminate lime		X	
Bringing water in the pond/gher	X		
Nursing pond/gher			X
Fry stocking			X
Supply feed	X		
Removal of weeds		X	
Fry monitoring			X
Fish feed supply	X		
Prepare homemade fish feed		X	
Provide feed to the pond		X	
Monitor food availability		X	
Provide security	X		
Growth monitoring			X
Disease monitoring			X
Water test			X

Preparing cage			X
Net making			X
Catch fish	X		
Fish collection			X
Scaling for grading			X
Sorting fish			X
De –heading			X
Marketing	X		
Total	8	7	14

Women have started playing an important role in aquaculture activities while adopting aquaculture technologies. Their engagement in aquaculture activities is higher than men in numbers and time. The women prepare tools such as nets and other fishing gear, repair them and sort fingerlings.



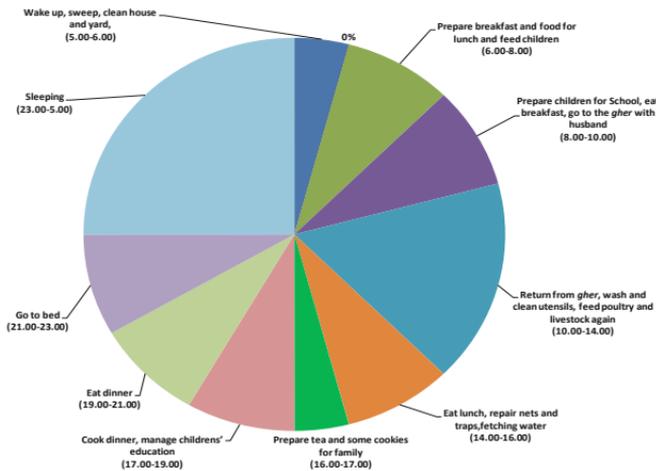
Female members of the household are engaged in preparing pocket gher

Women are involved in various facets of aquaculture such as the stocking of ponds, feeding the fish, pond management, fertilization, liming and fish harvesting etc. (for details, see table 2). They work in aquaculture as caretakers of fish in ponds, nurseries, cages and rice fields. In this study, most women reported that they manage ponds regularly in two ways. First, women easily manage most routine operations, such as fertilization and feeding. Secondly, the wives take leading roles in day-to-day operations while their husbands are

away from home for other work. In various cases, children help the women harvest fish for family consumption, and husbands only help them if they are at home or the ponds' water is very deep.

According to data from the study, women's regular participation in feeding fish is 80% and 60% in feed preparation. In addition, women and men both participate in post-harvest management including the sorting, grading and washing of fish. However, the involvement of women is limited when it comes to fish stocking, transporting and marketing. Some women sell fish in their local communities whereas almost all of the men are involved in all sorts of trading and exporting. Segregation between men and women restricts women from selling fish in markets. Though rice farming was traditionally dominated by men, women have had a tremendous role in persuading men to undertake fish cultivation with rice instead of using pesticide in the fields. Women are engaged in the breeding of carps and the nursing of young ones when men are creating canals to shelter the fish.

Figure 1: Daily hour-wise women's tasks in a household having aquaculture project



Though women participate in fish production and post-harvest activities, their work is not often recognized as an economic activity or not reported intensively in their community. This study found that women's work is not addressed due to the highly gendered division of labor caused by socio-cultural and religious norms such

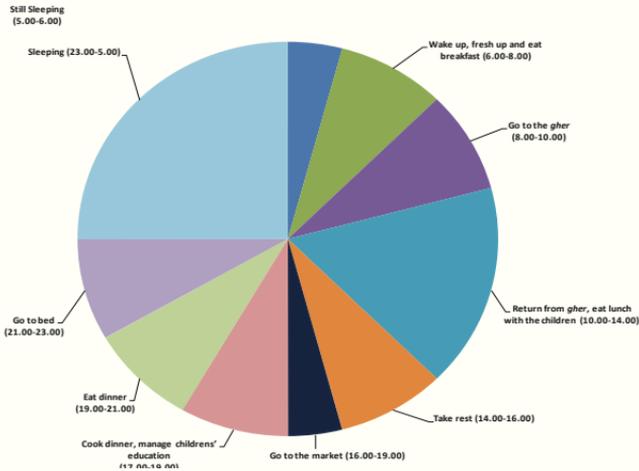
²Though Parda is widely synonymous with the wearing of the burkha/veil, here it is used in the wider sense of religious barrier/restriction on women's mobility.

as seclusion, segregation and the veiling of women, stereotypes and patriarchal pressure on women, and the societal shame felt by men when publically admitting that their wife works outside .Porda is one of the major constraints limiting women's active participation in aquaculture. The identification of women as domestic workers is a constraint that marginalizes the extensional and institutional support for women's involvement in fish culture. In terms of aquaculture, as women are not permitted to work long distance from the households, their vital contribution inside their households remains invisible and overlooked.



Male and female members of the household work jointly in producing fishing instruments

This study also found that they also face other challenges, including lack of resources, inputs, technology transfer, education, access to credit, representation and decision-making abilities. The number of illiterate, untrained female fish farmers was larger than the number of male illiterate farmers. This study reported that as women lack formal education, they face more difficulties than men in applying new technologies efficiently. Additionally, it also found that women's participation in fish culture is less than men's due to other reasons such as lack of knowledge, lack of an adequate share of the profits, lack of mobility, and weakly enforced inheritance rights to ponds, lands and other resources of fish culture. Their access to shrimp farms which are a great distance from the household is very restricted.



Most women could not inherit ponds, lands and farms; where they do possess such assets, in practice control over them is exercised by men. Women are involved in fry collection but their involvement in fry trading is very low. Thus, men continue to exert control and dominance over women, resulting in women continuing to exercise little power and control and holding far lower prestige than men in the wider society.

A significant challenge facing women is their low wage rate. The gher owners set unequal wages for male and female farmers because, according to them, they can get away with it; women rarely, if ever, resist this imbalanced distribution. Women generally believe that it is very normal for men to get more wages than them just because they are men. The major reason for women continuing to work under these poor conditions is that the number of potential female workers is higher than the demand for them, and that there are no alternative employment options for them.

Most male respondents believed that to properly utilize unprepared and unmanaged ponds and promote aquaculture, women's involvement is important. To promote the aquaculture sector of the study areas, the problems highlighted thus far need to be solved and the issues arising from the gender imbalance cannot continue to be overlooked. Most of the key informants in this study recommend that policymakers and institutions who are planning to support

community-based management of natural resources should apply procedures that enable women to play a major role in aquaculture. Similarly, the processes should help both men and women to recognize the needs and relevance of natural resources for women for their participation in the aquaculture sector. If women are included in the community-based management institutions, their status and rights will be improved.

This study found that gradually the women have replaced men in the small scale aquaculture sector due to the latter's increasing pursuit of alternative livelihood strategies, including small business, and rickshaw pulling and their temporary migration outside their home district to find work. Many women are thus skilled and experienced in managing the gher. Women work in different areas of small-scale fish production activities including: harvesting, taking care of fish, making fishing technologies, preparing food for fish, managing ponds and fertilization. Yet, their work is limited with regard to trading of fish. Moreover, their contribution is not reported much due to socio-cultural and religious norms and patriarchy. Mostly, social and cultural factors are undermining women's participation in this sector. The researchers argue that to promote fish farming and empower women, women's greater involvement in aquaculture including trading is crucial. One study (Ahmed et al, 2012) notes that the women play a role in selling fish from their aquaculture projects directly to the traders from their project sites, and some sell their fish through middlemen. There are now handful prawn fish buying centres in each upazila that the women can use. Studies (Ahmed et al, 2012; Shiraji et al, 2010) also show that women play a crucial role in aquaculture in Bangladesh but women's contribution in aquaculture is often unrecognized and the actual extent of benefits from their involvement in such activities is seldom acknowledged or assessed. This is quite disheartening because small-scale aquaculture development is increasingly considered as a means by which the livelihoods of poor households can be addressed in a substantive way (Ahmed et al 2012).

Table 3: Daily “time use” on various activities by men and women

Time	Activities of Men	Activities of Women
5.00 am – 6.00 am	Still Sleeping	Wake up, sweep, clean house and yard, feed poultry and livestock
7.00 am – 8.00 am	Wake up and eat breakfast	Prepare breakfast and food for lunch and feed children
8.00 am – 10.00 am	Go to the pond/gher	Prepare children for School, eat breakfast, go to the pond with husband
10.00 am – 2.00 pm	Work in the pond/gher, Return from pond, eat lunch with the children	Work in the pond, Return from pond, wash and clean utensils, feed poultry and livestock again
2.00 pm – 4.00 pm	Take rest	Eat lunch, repair nets and traps
4.00 pm – 5.00 pm	Go to the market	Prepare tea and some cookies for evening meal and go to the pond to feed fish
5.00 pm – 7.00 pm	Still at market (play cards, watch TV, gossiping)	Cook dinner, manage children’s education
7.00 pm – 9.00 pm	Eat dinner	Serve dinner, eat dinner, clean appliances, arrange everything for next morning
9.00 pm – 11.00pm	Go to bed and do sleep	Go to bed and do preparatory works before sleeping. For example storing left over foods, locked the doors and windows of the house, look after kids again, look after pets etc.
11.00 pm – 5.00 am	Sleeping	Sleeping
Total	7 hrs work	15 hrs work

Daily “time use” in study areas (both project and non-project areas) are shown in Table 3. Men enjoy more leisure time as they normally do not contribute to performing household chores which were culturally considered to be their duty and responsibility. Women work longer hours than men, averaging 15-16 hours a day leaving them with very little free time to attend meetings or social gatherings, to listen to radio or to watch television. We found that men work for less time than women in the gher. They spend their time, after finishing some tasks in the gher, or half a day’s work in the field, or half a day’s rickshaw/ van paddling, in the market from afternoon to night playing cards, watching television, and gossiping with other men in tea shop.



Men enjoy playing cards in the market place.

This study found that the women’s productive work is given less consideration than the men’s contribution at the household level and this image exists in village level exploratory. This study found that the village men, leaders and religious leaders and religious laypeople, both men and women, still believe in a traditionally gendered division of labor in which men are responsible for outside work and women for household work. As observed from the study as well as other studies (Padmaja et al; 2008), in agriculture, there are binding constraints on women’s active participation in aquaculture, that is, their traditional status at the household level, the strict, gendered division of labour, religious-cultural norms and values, and the extent to which these traditional customs prevail and influence women. Given these constraints, this study found that the women

who had adopted fish farming gained not only financial standing but also social status and prestige. Some women are not only involved in aquaculture but also in many other activities, such as raising poultry and livestock, home gardening and family welfare work at home. As a result, the total time engaged by women in aquaculture production and household chores was found to be generally higher than that of men (Padmaja et al 2008 cited from Sullivan 2005).

10.2 Exploring the Level of Involvement of Women in Aquaculture: A Reality Check

First of all, based on the study, it was clearly indicated no significant differences were found when comparing project with non-project areas. One of the reasons is, as the informants reported, the project activities (SaFal project) started implementation only six months prior to the fieldwork period. Only a few project activities are thus in evidence, e.g., group formation of project beneficiaries, identifying potential aquaculture farmers to be trained up as lead farmers, and organizing group meetings. Groups generally comprised 30% women and 60% men. Informants from the SaFal project area reported that they do not yet closely know all members, or the details about project activities.



Woman is catching shrimp fry from the river for her own gher.

In non-project and SaFal project areas, the study found that women are involved in various facets of aquaculture activities, including stocking of ponds, feeding of fish, pond management, fertilization, liming, and fish harvesting. Based on individual interviews with women, it was found that women were involved in aquaculture activities with various degrees of participation. According to the study, the majority of women were regularly involved in feed preparation, feeding of fish, fertilization, pond supervision and management, and fish harvesting.

It was also found that, women provided partial assistance to men in pond supervision and management, by applying feed, lime and fertilizer. Most women reported that they managed the pond regularly in two ways: first, most routine operations such as fertilization and feeding is managed by women, and secondly, husbands were often busy engaged in other work and away from the home for long hours, and hence the wife had to take the lead role in day-to-day operations. In several cases, that harvest of fish for family consumption was done by women with the help of children; husbands only helped when the pond water was too deep or ponds were located at a great distance from the house, requiring more specialized gear to be used for fish harvesting.

Nevertheless, it was reported that the harvesting of fish for marketing is done by men with commercial harvesters. In that case, women are involved in post-harvest handling including the sorting, grading and washing of fish. It was also seen from the study that, although women are involved in various aquaculture activities, their participation has been generally limited to fish stocking, transporting and marketing. Men are generally involved in the purchase of fish fingerlings from hatcheries and markets, stocking ponds and transporting harvested fish to markets. Interestingly some women noted that they bought and transported fish feed, fertilizer and lime from markets, up to three miles distant from their houses.

According to key informants, women were now more active in many aquaculture activities than in previous years. According to the study, fish production (on average 4,500 kg/ha/year) had increased 10-20% due to involvement of women. Job opportunities for women had increased since the wider spread of small-scale aquaculture in the study areas. It could be easily said that the rapid development of

the aquaculture industry has provided employment opportunities for women, meaning that they are now able to contribute to household income; even women from the poorest households often work outside the home as paid labourers in fish hatcheries and fish feed industries for their family survival. A few women are involved in weaving fishing nets, a traditional occupation of women. These nets are used for fish harvesting, which has generated increased demand for nets. The resultant increase in the price of nets has increased their earnings.

Almost all women interviewed stated that small-scale aquaculture activities had increased their workload. The study revealed that women's average daily involvement in fish cultivation is 3.5 hours, ranging from 2 to 6 hours. The women stated that they would like to spend more time in aquaculture because of the high economic return. However, the study found that the main constraint was their household work obligations. Based on respondents' descriptions, a woman's day typically begins with cleaning the house; from the morning until late at night she has to wash dishes and clothes, cook food, look after children, and carry out homestead gardening, poultry rearing, livestock feeding, fish farming and other agricultural work (see Tables 2 and 3 for details).



My research team members interviewing Salma Jahan from a Pocket Gher owner household.

Ms. Salma Jahan (21), a young woman who lives in Devhata, Satkhira. Her husband is a day laborer. She has one child. She has 2.5 bigha of gher. She cultivates shrimp and white fish (Telapia, Tengra, Vetki etc.) in her gher. As her husband is a day laborer, she carries out all of the required work on the gher, including making and repairing dykes, loosing soil, removing weeds, regular monitoring of the gher, and preparing fish feed. She also grows crabs in her gher.

She took the decision to embark on crap cultivation autonomously, based on the good market for crab meat. And, she thinks, growing crabs requires no additional costs. She also cultivates vegetables on her gher dykes. She earns about 2000 taka/month by selling vegetables in every season of three months a year. She has a target to earn this amount of money to meet her own and family needs. She sells shrimp, fish, crab and vegetables to whole sellers and earns, on average, Tk35000 – 40000 annually. She saves money for future uses.

Salma Jahan decides about spending money on her own. She said, “I manage and save money because my husband is not always available at home, because he works outside the village. I also manage the whole expenditure for my family.” Because of this she also has to do all the work with fish, ‘otherwise, my husband could do some work in the gher’, she said. Salma takes all kinds of decisions by consulting her husband. She never borrowed money from any source. She received training from the World Fish Centre on aquaculture. She can move outside her house to nearby places without any interference. She collects drinking water from a deep tube well which is near to her house. She said “*I always enjoy my work because I can do the work without any pressure.*”

The task of women in small-scale aquaculture related activities is potentially very important for their empowerment. This study revealed that women’s involvement in aquaculture provides three basic improvements: economic, nutritional and social benefits. The households of women improved their income through the increased profitability of fish farming. According to the study, almost all women reported that they have improved their socioeconomic conditions through involvement in aquaculture activities. Study results suggested that women have broadly improved their standard

of living, purchasing power and status as economic actors. Female respondents cited several examples of how the standards of living of their families had improved since they began to actively participate in aquaculture.



Happy young mother with her loving baby.

Most households reported that they improved their housing conditions, nutritional benefits, health and sanitary facilities, drinking water facilities, children's education and the possession of recreational items including cell phone, television and radio. Income from fish production offers women a platform to diversify their economic portfolio, including poultry farming, livestock rearing and homestead gardening to supplement their income. Income also provides the opportunity to increase their security for coping with uncertain situations, such as the illness of household members and natural disasters (i.e. floods, heavy rain and cyclones).

It is recognized by the family and at the village level that women perform a significant amount of work in small-scale aquaculture development in the study areas. Aquaculture activities of women at village level enhanced their position within the family. Almost all women interviewed noted that their position has improved due to such involvement. They now tend to play a stronger role in economic decision-making in household management, including those concerning the education of children, attending social

functions, inviting guests and attending religious functions. Women's participation in aquaculture had changed the attitudes of family members, including their husbands, mothers-in-laws and other female relatives as their aquaculture activities willingly offer help in meeting their household responsibilities because of increased income through increase fish production. During field visits, it was observed that improved women's status has improved child nutrition because women with greater status had better nutritional status, are better cared for themselves, and provide higher-quality care to their children. According to key informants, the participation of women in aquaculture had increased rural women's mobility and access to markets. They can also get access to better health services and educational opportunities.

Most of the key informants noted that the most effective ways of empowering women and enabling them to move out of poverty will depend on local economic, cultural and political conditions. Moreover, the study noted that women's empowerment depends on a range of variables including psychological, attitudinal, cognitive, economic, social and political factors. Women's empowerment may give them greater equity, mobility, more control over resources and political awareness, and thus, reduce incidents of domestic violence. The study found that the participation of women in different aspects of aquaculture activities was strongly affected by social, cultural and religious norms.

Access to aquaculture resources is one of the elements of women's empowerment. The study noted that resources might be economic (e.g. pond, land and credit), political (participation in local government and community decision-making) and social (education and training). Access to productive resources for women enhances their knowledge of farm management and income generation, develops bargaining and decision making power, improves children's schooling and health, increases self-confidence and social networks. Rural women's empowerment can be enhanced through building social capital through women's groups/organizations, their networks with service providers and linkages with market chains and through various development activities which could increase productive resources under women's control. The women of rural households negotiate their livelihoods through obtaining access to

land, pond, labour, capital, knowledge and market, which leads to the enhancement of family well-being and sustainable use of resources. The study in both project and non-project areas found that while there is great potential for increasing family incomes through engaging in aquaculture activities by women, a number of factors continue to constrain their active involvement. Despite their tremendous contribution to fish production, women were underestimated and overlooked in development strategies. Although women and men are equal according to Bangladesh's constitution, the reality is different. There is a gross disparity between women and men in aquaculture, as well as in every sphere of life. This study suggested that the underlying problem lies in the highly gendered division of labour, in which women perform mainly unpaid work in the home (and because it is unpaid, it is unrecognized, and because it is not recognized it is unpaid) and men perform largely paid work outside the home. Moreover, the lack of technical knowledge in aquaculture, heavy household tasks and socio-cultural constraints such as 'mobility restrictions' are identified by female informants as barriers to scale up women's participation in aquaculture activities.

The active participation of women has a crucial and positive impact on the social and economic well-being that will ultimately help in reducing poverty and empowering them. If the status of men and women are equalized, women may be able to empower themselves in addition to increasing the household's income through involvement in aquaculture activities.

10.3 The obstacles to women's participation in aquaculture

A detailed review of field data of involving women in aquaculture in both project and non-project study areas revealed that women are gradually becoming more involved in aquaculture activities. However, women's participation is hindered by several socio-economic constraints, mostly myths. In addition, there are certain policy related and infra-structural issues that block the enhancement of women's roles in aquaculture. A brief account of the most commonly reported constraints is presented in Table 4.

According to table 4, a low level of literacy is reported to be one of the most severe constraints that hinder women's participation in

aquaculture. Social and cultural barriers prevent girls from reaching higher education and developing required skills. Similarly, the burden of household chores restricts them from engaging in aquaculture. There is also a lack of government mechanisms dealing with women in fisheries, as well as a lack of government strategies for addressing gender issues; such are the main constraints facing women in aquaculture and fisheries. A related problem was the dominating role played by men, which dictates that women should stay in the home and not be involved in “masculine” activities such as agriculture and aquaculture.

Women have the sole responsibility for raising the children, limiting activities to those that can be performed in and around the house. Respondents often considered it to be socially unacceptable for rural women to move around outside the village boundaries, and most women are not supposed to do business. In the surveyed areas there is a cultural barrier that prevents male extension workers and trainers from communicating with women farmers. This problem is further compounded by very few women extension workers /trainers and, as a consequence, female farmers have limited access to extension services. The impact of large-scale interventions on the aquaculture sector in terms of access to assets and capabilities, such as micro-finance and micro-enterprise training, has only been marginally explored in the study areas.

Table 4: Constraints to women’s participation in aquaculture
[Source: FGDs with women]

Challenges
Low literacy
Limited access to skills development on modern technology
Lack of government strategies for addressing gender issues
Lack of credit and finance and control over it
Lack of women’s organizations, women extension workers
Lack of understanding about women’s engagement in supply chain
Male dominant society: mobility is limited for women, outside work is frowned upon
Lack of access to resources
Lack of access to organized market (forward and backward linkages) and rural infrastructure; absence of product marketing system
Men who harass women are left free whilst women are blamed

10.4 Gender in the Market Chain

This study found that aquaculture in the study area is influenced by a buyer-driven chain where producers, particularly small producers, have little ability to influence the price at which they sell their product and are frequently locked into contracts that limit the price they receive when compared with prices that they could freely obtain in the free market or with buyers elsewhere. In the study areas small suppliers such as fry catchers and small farmers tend to be dependent on larger, dominant buyers, or are locked into contracts where they must sell to particular buyers. Intermediaries such as fry foria and arot dar and shrimp foria and arot dar inject cash money through the credit system and engage with suppliers and farmers setting the terms of exchange. The result is that the fish producers must sell their products to the lenders, who in turn are able to always set the prices. This system severely limits the producers' bargaining power. According to the informants, the foria buy the products directly from the fish producers both from the gher and in the market. Women are not encouraged or allowed to deal with the foria on the basis that they are especially vulnerable to being cheated by the latter, through manipulation of the grading and weighting of the produce. But some informants, both men and women, argued that actually gender was not a factor, and that the foria is able to exploit everyone using their leverage from lending money, and their connections with Arot dars and the wider fish market.

At the lower end of the value chain among fry collectors and foria, bargaining is limited and few agents are more than price-takers. This study further found that barriers to entry, poor infrastructure, inadequate communications, and significant transaction and transport costs limit the producers' access to the wider market.

The types of exchange observed along the shrimp market and value chain are indicative of unequal bargaining power at a number of key points: fry catching and sale; small-farmer shrimp production and sale; and, even consolidation in the depots. Women, men, and children work throughout the chain, but women and children are located in segments of the chain where employment is more flexible and insecure, most notably in fry catching, and casual labor in farming. Female employment is characterized by highly gendered

and informal employment relations where women make up the bulk of the casual and contingent labor supplied throughout the chain.

The shrimp market chain is complex, with a variety of actors and intermediaries at each node of the chain. Below are descriptions of actors within the market chain as well as the power relationships that operate between them:

Fry Catching

The first link in the chain is collecting the shrimp fry. Both men and women work in fry catching. Children frequently accompany fry catchers and participate in catching and sorting activities. During the peak season, women and girls participate more visibly in fry catching. Fry collectors sift the surf and estuaries for shrimp post larvae. They transfer their catch to earthenware or metal bowls which are carried back to the villages where the fry are sorted and counted by women and children using white enameled plates. While men and boys disproportionately catch from the sea, the capture of fry from rivers using push nets is typically undertaken by women and children. The transporting and sorting process undoubtedly results in a very large wastage of fry including fish. The shrimp fry then pass through a chain of middlemen before reaching the shrimp farmers.

Fry Foria

Fry foria buy fry either from fry catchers or from hatcheries throughout the year. The peak season for buying fry is five months long from Baishakh (April) to Bhadra (August). During this period, the foria conduct business every day, buying and selling twice a day. Off season e.g., during the months of Poush (December) and Magh (January), they can face significant financial distress and frequently resort to loans from the fry arottdar which lock them into a contract to sell all fry to the lender. If they try to sell to other arottdars, they frequently face verbal or physical abuse.

Fry Arottdar

Fry arottdar also purchase fry that come from hatcheries as well as natural sources. Many fry arottdar buy directly from fry foria, aggregating the volumes of fry. Fry are transported by the fry arottdar to the commission agents. Some fry arottdar are also farmers who own or manage ghers. A fry arottdar has a broader market and

may sell to different buyers in different regions. The focus group interviews revealed that arotgars sell approximately 60 percent of shrimp fries to the shrimp farmers of Satkhira and Khulna, and the remaining 40 percent are sold in different parts of Cox's Bazar including Moheshkhali and Chokoria. Usually, the arotgar do not feed the fry, meaning they sell them quickly, often within three days. A fry arotgar trades fry twice a day, primarily with a commission agent who sells the fry to gher farmers. The market price varies, reflecting clients' demand and the overall market conditions.

Fry Commission Agent

Shrimp fry is collected and transported to Khulna where most of the gher are located. Commission agents receive the fry and sell them to the farmers. The commission agents hold the fry for short periods of time. Large containers, usually plastic drums and aluminum pots, are used to carry and serve the fry. Fry commission agents sell wild fry at higher prices than hatchery fry. Buyers willingly pay this premium since they believe that the wild fry have higher survival rates.

Farmer

Most bagda shrimp are cultured in Khulna, Bagerhat, and Satkhira; golda is produced in the south western region in Bagerhat, Khulna, Satkhira, Jessore, Narail, Gopalganj, and Pirojpur since they require fresh water for production. It is most likely that the types cultivated are influenced by the "dadon" system where shrimp foria and arotgar as lenders and buyers impose their preferences about shrimp varieties responding to price signals and market demand.

According to respondents, in a small gher (one acre), approximately 5,000 to 10000 fry are seeded as the stocking density is typically higher compared with that of a large gher (10 acre to 100 acre, 2000 to 5,000 fry per acre). On average, small gher owners spend 267 BDT or \$4.12 on fish feed per acre of gher. Increasingly, farmers are cultivating smaller "pocket ghers" using less land, higher stocking densities, and adding feed. Men, women, and children work in the gher, but the tasks are highly gendered.

Shrimp Foria

Shrimp foria conduct business throughout the year, but the peak season for their business lasts for five months. They offer conditional

loans or “dadon” to the farmers and buy shrimp from them at a price that the foria determines. This price-fixing is ensured through the conditions imposed through the loan. Foria usually sell all the purchased shrimp to an arotdar the same day. Consequently, foria do not need to store or provide any food for the shrimp. If they need to store the shrimp, they use primitive refrigeration methods with blocks of ice.

The sale price is fixed, which is decided by the foria, based on the grades of shrimp produced and their number per unit of weight. Few accurate measuring devices are used to assess size and weight for grading. It is typically a highly subjective process, where the party who exerts greater power over the other reaps the benefits. The shrimp foria tries to pay the shrimp farmer as little as possible for the shrimp in order to maximize the profits when selling to the arotdar. Moreover, shrimp forias and arotdars use relatively fewer grades than those prevailing in the export market, a tactic that tends to depress prices in the exchange.

Shrimp foria also make loans to the farmers and similar tied contracting arrangements prevail. The shrimp foria also supply equipment and materials to the shrimp farmers including: lime, fertilizer, fries, oil cake, wood for making sluice gates, and bamboo for fencing and partitions. The farmer borrows from the shrimp foria and sells directly to him. In turn, the shrimp foria borrows money from a commission agent and is thus obliged to sell to that commission agent.

Shrimp Arotdar

Shrimp arotdar buy shrimp from both foria and farmers. The foria or farmer packs the shrimp in ice in a tub, wicker basket, or plastic container to take to the arotdar. Shrimp are sold either through auction or buyer-seller negotiations in local markets. Spot markets, such as auctions, ensure that sellers get better prices in comparison to those that sell directly to arotdar under contracts secured with loans. However, when mixed grade shrimp is sold in this process, the seller loses some of the potential price benefit for selling individual grades of shrimp that could be priced separately. When shrimp of mixed grades are pooled, the price is averaged and thus the seller does not realize the full potential profit.

Of note is that few women act as intermediaries, either as foria or arotdar. This study found that socio-cultural norms limit women's mobility and as a result their engagement in local markets. Women and children may, however, provide casual hired labor and unremunerated household labor to foria and arotdar to perform sorting and grading. Furthermore, the financial requirements for foria and arotdar, particularly those who trade shrimp and extend credit to actors down the value chain, largely prohibit rural women from entry into this activity.

Shrimp Commission Agent

Shrimp commission agents trade shrimp with exporters. They are typically medium to large sized entrepreneurs who have access to financing. The commission agents buy shrimp from the arotdar and sell to exporters. The commission agents maximize their returns by concealing the price at which they sell and depressing the price at which they buy. Sometimes they take bribes from the arotdar to sell their shrimp to a specific exporter. As a result, commission agents enjoy significant rents and side-payments.

Shrimp Retailer

Shrimp retailers are engaged in domestic sales for local consumption. Local hotels, restaurants, supermarkets, and consumers buy shrimp from retailers. The retail markets remain open throughout the year. Retailers buy and sell different types of prawn and shrimp such as Lobster shrimp, Tiger, Chaka, Chali, Horina, and Lailla. They also buy mother shrimp from the hatcheries and sell these at their stores throughout the year. Retailers buy from gher owners as well as arotdars. Sometimes they buy from sea fishermen where the most common marine variety is Chaka. Retailers do not process shrimp but sell as purchased. They sell shrimp both with the head removed and with the head still attached, as well as fresh and frozen shrimp. Some retailers only sell shrimp and prawn while others sell additional varieties of fish. All retail transactions are cash. Retailers usually do not make any sales by advancing credit. They sell shrimp on a cost-plus basis with the price ceiling set by the spot market unit price according to the size of the shrimp.

Processor and Processor/Exporter

Most of the processors sell shrimp using their own brand name and

also the brand name of importers and buyers. Many processors prefer to maintain multiple brand names as these brands enjoy different levels of popularity and brand visibility across different national markets.

Processing Plant

The processing plant is an establishment with several facilities, including processing rooms, shrimp warehousing, laboratories, bathrooms, a first-aid room, and administrative offices. The entrance to the plant typically contains a pool with chlorinated water for disinfecting and the whole plant is kept wet with disinfectants to ensure a hygienic environment. Individuals inside the plant are required to use plastic boots to reduce contamination. The two-floored warehouses are kept sealed and the whole plant is built with smooth floors and walls to facilitate cleaning. Generators are used to compensate for any loss of power supply.

Men and women work in the processing plants, but their work is highly segmented and differentiated. Typically women are engaged in cleaning and de-heading the shrimp, while the men work more closely with machinery, block freezing, and Individually Quick Frozen (IQF) processes. It reported that a substantial amount of work is performed by children at shrimp processing, freezing, and packaging factories. The work ranges from de-heading and deveining shrimp undertaken by smaller children who accompany their mothers, to young boys (9 and older) who clean the factories, load packed cartons of product onto freezer trucks, and unload incoming trucks with the unprocessed product.

Warehousing

Processors frequently adopt two-floor warehousing facilities in the factory. The first layer preserves semi or un-processed shrimp in 5-10 kg packs, to be processed at -5° centigrade in a chiller room. The second layer in cold storage keeps fully processed shrimp that will be shipped to buyers after verification. The second layer is kept at a temperature of between -12° to -20° centigrade.

Cooked shrimp that are boiled or semi-boiled and salted are increasingly in demand in the global market. To supply cooked shrimp, processors need to make a substantial capital investment and seek skilled staff to maintain the equipment and processes required.

The processors frequently hire foreign experts and technicians at high cost to ensure the integrity and function of the spiral freezing and cooking plants.

Packaging

Processors and exporters use locally manufactured cartons, plastic packets, and trays with customized labels. The packaging style varies according to requirements of the buyer and according to the price negotiated by the buyer. Shrimp earning higher prices usually command exclusive packaging; shrimp earning lower prices are frequently packed in single plastic packs or blocks and repackaged later by the importer or retailer. Usually buyers of block and unbranded products prefer simple packaging since disposal is expensive in developed countries. This preference for lower quality packaging for unbranded products, however, can conflict with compliance standards. Ice is used in several stages of packaging and storing.

10.5 Is it Feminization of the Workforce? Finding the Facts

In both project and non-project study areas, there was a significant degree of women's participation in aquaculture; however, they were located at the lower end of the value chain, namely, fry collection and peeling, de-heading and cleaning in processing factories; this reflects their significantly restricted power and control compared with their male counterparts. This study showed that only a few women own shrimp farms. Women are self-employed in the shrimp fry collection, and none of them were involved in fry trading.

Wage discrimination: This study found that while performing the same tasks as men, women received significantly lower wages. Many women, however, view the wage difference as usual and normal: *"They are Purush (men), and we are Nari (women), and that's why they deserve to get more than what we're getting"*, was a common remark made by women in both project and non-project areas. The employers set differential wages for man and woman workers, with practically no resistance. When this difference was problematized to the employers, one of them responded by suggesting that *"equal wages for both man and woman workers for the same job with same amount of labour is obviously an ideal situation, but we continue this*

practice as nobody told us before, and the woman workers are okay with this.”

Hiring: There were many processing factories located in Khulna, very few located in Satkhira and Bagerhat. The study found that women are hardly hired for management and commercial jobs in the factories, because “women have a little aptitude for management and commerce,” as the CEO of a factory put it during a telephone interview. They added that the nature of administrative and managerial jobs in the factories “requires them to do duties sometimes in daytime, and sometimes the whole night, which is absolutely unsuitable for women.” Despite this patriarchal bias as well as cultural barriers, the research has shown that some factories have started hiring women for administration and management positions because as one factory owner argued, “women workers can best be managed by a woman manager.”

Differential treatment: The study showed that in the processing factories, a gendered construction of culture dominates the hiring process and then further enables the differential treatment of men and women. The processing workers are overwhelmingly young and female, are viewed as cheap, dependent on their families, quiet, exploitable and easy to organize, whereas men are “masters of the household” and so collectively are “inflexible” in demanding lifetime employment and a “family” wage. The casual and lower paid jobs “require huge patience as the workers have to work in an odorous, cold room, standing up for a long time, which the men hardly endure.” Men are unwilling to do these jobs because “they are less patient than the women,” explained a factory owner when asked why he hires more women for certain lower paid jobs, even though their duties are very hard. The same factory owner responded, “we are doing a great favor to these women by giving them jobs, because they are illiterate and lower caste women.” Further, he asserted “*women here are very easy to manage; we can get more women with lower salary, while the men demand more.*”

10.6 Empowerment or Exploitation: Unveiling the Truth

Women in the aquaculture sector mainly get work as wage laborers, building and maintaining gher embankments, weeding in the shrimp

fields, etc. Most women and children in the study areas in both project and non-project areas maintain their livelihoods by collecting shrimp fry, preparing gher as day labourers, clearing the shaowla and working in the processing plant. Women working in the aquaculture sector are mostly poor. During peak fry collection periods (locally known as Ghon), women spend the entire night collecting fries. Shrimp fry collection starts from the month of Boishakh (mid-April) and peaks from the month of Jaishtho (mid-May). This fry collection continues through the month of Bhadro (mid-September) when the numbers of fry collected start reducing. The women and children spend the early dawn hours or the late evening catching the shrimp fry from the rivers, canals, etc. During the full moon the fry availability increases and collectors work all the hours that fry can be collected.

This study in both project and non-project areas found that the gher owners prefer female workers over male workers, largely because they can be paid less. The labour requirements in the gher are to repair and reconstruct gher embankments, which require earth excavation and movement, clearing the weeds and other aquatic plants from the water bodies, liming the gher, fish sorting etc. The preparatory work begins from Chaitro (mid-March) and Boishakh (mid-April) when the gher are prepared for stocking. This study revealed that women and children are engaged in the gher for five hours beginning at 7:00 am until 1:00pm or 8:00 am to 4:00 pm. During the lean period, some of the women and children continue providing services to the gher, while others seek employment in homesteads, repairing homes, processing crops, or performing domestic tasks. Some also seek work in the crop fields, repairing roads, excavating canals etc.

The women in the study areas, both project and non-project areas, reported that the wage rate for the gher preparation is too low to maintain their family expenses. Data from focus group discussions (FGDs) found that women continue to accept low wages largely in order to maintain their subsistence. There are several reasons for women receiving lower wages. These are as follows:

- The supply of female workers exceeds demand, leaving them open to exploitation.
- An absence of any alternative employment options.

- Paymaster believes that men are superior workers when compared with women.

According to FGDs, bonded labour is another form of exploitation suffered by women in the study area. Poor men and women take loans in advance from local wealthy people, in a process known as dadon. A majority of poor families take dadon from foria (local small scale buyers of fries who later sell the fries to the market) during crisis periods, on the condition that they agree to sell collected fry exclusively to that foria, often at below market rates. If the member of any family subsequently does not collect fry, the foria pressurises them to do so.

This study found that as women and children fry collectors sell their catch at shore or at home, they have to agree to whatever rate is offered. Male fry collectors on the other hand can travel to trading points/centers where they can compare rates of several purchasers and decide whom to sell to and at what rate. Women are forced to sell to the foria alone, who is thus afforded an enormous advantage in bargaining.

This study also found that the employment of women in aquaculture is seasonal, unskilled and poorly paid. The income of female workers from working in aquaculture has to be set against a reduced contribution of women's traditional unpaid work in agricultural activities and household production. With such a low income, female respondents mentioned that they cannot manage their family properly.

Despite women's increased involvement in the aquaculture, women still carry out their routine household tasks and the net effect has seen their total workload increase substantially. From individual interviews, women reported that their workload at home has also increased, particularly due to the growing shortage of drinking water and also the need to collect fuel wood and biomass. In focus group discussions (FGDs), female participants of project and non-project areas mentioned that previously they used to spend an hour for the collection of fuel wood. Currently fuel collection takes about two hours. Women mentioned that because of the workload in the gher, women no longer have sufficient time for household. If women fail to prepare meals on time, husbands often respond with physical violence.

Interviews reveal that women encounter a number of other serious problems while working in aquaculture. During shrimp fry collection from the river, they are often harassed either physically or verbally and generally do not feel secure, especially in the early hours of the morning. In Focus Group Discussions (FGD), women reported that insecurity has actually increased. Some of the major points to which all participants agreed are summarized include:

- Women and children face increasing levels of insecurity.
- Although the monetary benefits attract women and children to work in aquaculture, this entails significant occupational risks and hazards within a context of the complete absence of social laws. Women and children have no means to challenge these obstacles.

A majority of the female worker respondents stated that harassment and violence against women and children is quite visible in the society. The main problems they identified were as follows:

- They are not allowed to leave work if they fall sick.
- They are jeered at and verbally and physically harassed by male guards, managers and youth man inside the gher.
- They are fired from work if they arrive late.

This study showed from Focus Group Discussions (FGD) that it is because of women's helplessness and their vulnerable position within the shrimp trade that women are left at the whims and wishes of those engaging them in work. Furthermore, the shrimp fry catchers' women and children are exposed to different diseases because of the nature of the work. Women are also not aware of the diseases that might be caused for being in the water for such long periods. There is a lack of proper health care facilities in the study areas. Further, unequal power relationships between men and women hinder women's access to whatever health service is available.

The prevailing social and cultural norms prevent women from having a public role. Therefore, in the study areas there is no incidence of women collectively protesting for low wage and sexual harassment. When interviewed, women mention that they have no access to justice regarding harassment, violence, torture or oppression.

This study found that there are some large microcredit organizations like ASA, BRAC, and Grameen Bank who work with the rural poor in the study areas but their major focus is limited to credit disbursement and not on social justice issues. In project areas, currently Solidaridad Network Asia in partnership with the Embassy of the Kingdom of the Netherlands in Bangladesh has started implementing the Sustainable Agriculture, Food Security and Linkages (SaFaL) project which provide technical support to fisheries, aquaculture and horticulture but there are no activities related to women's empowerment.

Focus Group Discussions (FGDs) reported that the lack of organizational support to women and children in the study areas is depriving them of justice. Currently the role of local organizations is not satisfactory in terms of women's empowerment. The absence of organizational support from NGOs and government to women's mobilization to form their own groups is very noticeable. Group mobilization is supposed to give women strength to fight for their rights. The women participants need legal education and other support to deal with local power structures and other problems.

10.7 Searching for the Status of Empowerment of Women

Empowerment is an abstract and complex concept and it is interpreted in many ways. In spite of the existence of a large body of research on the topic of empowerment as viewed from the angle of economics, anthropology, sociology, psychology, political science, management and development, it is difficult to find a comprehensive operational definition that can be used at a grassroots level for design, implementation and evaluation. While there is much debate at the theoretical level as to what empowerment comprises and how it best can be achieved, there has been little primary research at the grassroots level to contribute to our understanding of what empowerment means in every day terms (Carr et al. 1996). Thus, it appears that there is not enough research done in assessing the impact of development projects on the process of empowerment of target individuals or groups. Recent work by the Brac Development Institute (2010) on Cultural History Women focuses on exploring theories and discourses of women's empowerment in the late 19th and early 20th centuries. In one article from this research, Nazneen et

al (2011) notes, a consensus has formed among women organizations, NGOs, political parties and the donor agencies about prioritizing the empowerment of women in Bangladesh, and that this explicitly refers to political empowerment.

However, for the purpose of our study, four interrelated elements of empowerment have been used, as GWA (2014) applies them to assess a situation and also to describe objectives. The interlinked elements are as follows:

A.	Socio-cultural	B. Political Empowerment
<ul style="list-style-type: none"> o o o o o 	Positive self-image Societal status, how does the society see you? Right to education Is your voice heard? And Does your opinion matter?	<ul style="list-style-type: none"> o Right to organize one-selves. o Right to take part in democratic processes. o Right to vote and be voted. o Take active part in Water Users Organizations and other groups. o Right to give feedback, which is heard. o Opportunities to influence development efforts.
C.	Economic Empowerment	D. Physical Empowerment
<ul style="list-style-type: none"> o o o o o o o 	Right to choose one’s education. Same income for same work. Right to work that one enjoys. Right to decide about spending benefits and income. Right to mobility. Access to relevant resources, and control.	<ul style="list-style-type: none"> o Right to decide about one’s sexuality. o Right to decide about the number of children, and spacing in between. o Right to proper healthcare. o Right to clean water. o Right to sanitation facilities and dignity. o Right to rest (especially for pregnant women). o Ability to resist violence. o Access to proper menstrual management. o Right to safety and security. and o Power to get one’s rights.

10.7.1 Socio-cultural Empowerment

In the southwest coastal region of Bangladesh, small scale fish farming is a source of livelihood for poor or deprived people and for women, by which they can improve their living conditions. The people of this area mostly depend on fish cultivation for their social, economic, political and physical empowerment. Men and women both are directly or indirectly involved in small scale fish farming, which is popularly known as 'pocket gher'. Women are engaged in pocket gher fish farming along with their household chores but the situation was different 20- 25 years ago, when gher or fish farming was started in these regions; there was a negative perception within society about women's participation in gher or fish cultivation. Female informants note that today women are willingly working in gher in order to address their economic hardship and insecurity. It was seen in the study areas of both SaFaL project and non-project areas that, in some cases, men do not want their wives to engage in gher related work or fish farming, but they allow it anyway in order to increase the family's income. Most male respondents in Satkhira district said *"It is not possible to meet household expenditure through one person's income. So we sent our wives against our will to work in the gher."*

At the family level, nowadays women are accepted more in their family because of their rising income acquired through small scale homestead fish farming. They discuss all household activities with their husband. In some cases, it was found that women are now starting to move out and are involved with fish farming related work to support their husbands to improve the family status. Most of the woman workers said, *"We cannot learn anything while staying at home. We come to understand everything while we go to work outside the home."* On the other hand, some male respondents said, *"women should get permission from the elder male members of the family to go to work outside."*

Women's work outside the home is now becoming more acceptable to their husbands because of their participation in fish farming which increases the family's income. The study also found that, the opinion of women is listened to more than before and they can raise their voice more easily in intra-household decision making processes.

But counter veiling examples were also found from selected villages within the project study area. In these examples, although both the husband and wife contribute to the decision making process, the husband still plays a dominating role. One of the male respondents said, *“There is no need to accept their opinion. They are very weak in decision making. They have low intelligence. So we don’t accept their opinions.”*



RashidaKhatun, 25 years old and lives in DevhataUpazila of Satkhira district. She finished primary school education (up to grade 5). She is an owner of a gher of 1.5 acre area. She is cultivating shrimp (Bagda), prawn (Golda) and white Fish (Vetki, Tangra, Rui, Katlaetc) in her gher. She also cultivates vegetables in her homestead land. She rears and sells goats, earning about six thousand taka per year. She conducts most of the work in the gher by herself. As her husband works as a laborer in the brick field so her husband helps her to conduct gher related work. She has a plan to grow vegetables on her gher dykes for her own consumption and also to sell for earning extra income.

RashidaKhatun is a member of the SaFal project, receiving training from the project concerning aquaculture and horticulture. Different decisions such as household level decisions and about the education of children are taken by her husband. She said *“most of the decisions are taken by my husband as he is the main guardian of the family.”*

She knew nothing about gher activities before receiving training. She has taken a loan from an NGO i.e. UTTARAN which was invested in the gher. She said *“though I am doing well with the gher, I decide about what to do when, but decisions regarding harvesting and selling fish and handling money are taken by my husband.”*

With regard to the decision making in the family and household, men’s perception points towards men’s superiority over women. During the FGDs in both project and non-project areas, men said that they think they have the right to dominate and control the family decisions, and who should take the main responsibility for the status and welfare of the household. As women are not the descendants of the husbands’ lineage, they should not say anything about the welfare of the family. Therefore, men should play the principal role in maintaining household income and making other important decisions in buying, selling or leasing land and the selling of cattle. Women, during one FGD in a project area of Khulna, also reinforced men’s perception. For example a woman respondent stated *“A man should maintain his family perfectly; as he is the head of family so he should hold all the responsibilities as well”*.

However the study team did find some men who think there should be a mutual understanding between husband and wife to take decisions together. They believe wives can also contribute towards decisions about family income, property, children’s education and other family welfare issues. In both project and non-project areas, most of the women are illiterate and only a very few of them have completed their primary education (up to grade V). Though most of them were uneducated, they seemed conscious about the importance of educating their children. One of the female respondents said, *“I don’t want to make my children illiterate like me. So I sent them to school though we have trouble bearing their educational expenses.”*

People are very much aware of education in both project and non-project areas. From a school teacher it was heard that in many schools, the participation of girls is higher than boys. One key informant, ‘Headmaster of secondary school’ said, *“In this school, the performance of girls is better than boys as girls are achieving more good result than boys. Mothers are more aware about children’s education and they contact teachers more than fathers.”*

At the household level, mothers play a significant role about children's schooling. Fathers have less involvement in children's education. One of the male respondents asserted "*Women are more conscious about their children's education than men.*"

10.7.2 Economic Empowerment

Men's concern over girl's education indicates an inherent tension among men in general. While as fathers, they understand the importance of girls' education, as potential grooms they prefer younger ones with less education. Moreover, in the absence of enough job facilities for girls, most girls with higher education get less attractive grooms. However, almost all men and women, during the FGDs, suggested that girls should get education. The majority of them also think that parents should ensure higher education for their girls. It seems that perceptions about girl's education have been changed in the studied areas where the Government's free education for girls and NGO's intervention for Microcredit are being implemented. Both men and women in those areas think educated girls who generally have jobs are comparatively happier in their conjugal lives. They also believe educated daughters can be married off without dowry and can also take care of their parents in the future.

A respondent at Bagerhat (project area) told in an individual interview, "*Daughter of Kadir Mia is a primary school teacher. She had been married off to a man from a nearby village a few years ago without any dowry. Meeting her own household expenditure, she gives some money to her parents. Her husband does not mind if she helps her parents from her own earnings.*"

But many parents do not think spending money for girls' education is worthwhile as they do not stand to receive any return in the near future if she does not get a job. Some of the men and women said that it is very difficult to get perfect matches for highly educated girls. Therefore, there is no need for girls' higher education. Some of the guardians who try to follow Islamic rules strictly hold concerns surrounding how the girls educated in general educational institutions do not put wear the Borkha (veil) which is believed to be obligatory for Muslim women. They consider these girls as less obedient. As a result many men think it is better to marry young girls who have less

education whom they can control easily. Some men also said that they think if a girl is married off at an early age, they do not need to pay huge dowry because an educated girl has to marry a 'better bridegroom', and for that the parents need to pay a higher dowry. A woman respondent from Satkhira village opined in a FGD: *"If we educate our daughter up to degree level then demand for dowry payment increases. It is then difficult for arranging her marriage. Sometimes, after marriage, her in-laws demand a car or motorbike which may not possible for her parents"*. Others commented, *"Then she is tortured by her husband and in-laws. That is why many villagers want an early marriage for their daughters"*.

In this study, data from both project and non-project areas found that men and women do not receive the same wage for the same work. For some tasks (weeding, loosening soil), women perform like men and they even perform better than men do. However, they do not get same wages for the same work. One of the man respondents asserted *"Women do not work like men. They are weak and they are very slow in working."*

Table 5: Wage payment rate for men and women in the study area [Source: FGD with women].

Area	Wages	
	Men	Women
Districts		
Shatkhira	Tk.170-180	Tk.120-130
Khulna	Tk.220-300	Tk.200-220
Bagerhat	Tk.300-350	Tk.200-250

This study found that men think that they have the responsibility to maintain their family and the income of the women is treated as additional income or bonus. One counter statement, however, was delivered by one of the woman respondents, who said that *"if women earn more than men then they will reach a higher position than that of their husbands. Then, it is a sign of disrespecting their husbands, which is also treated as a sin by men, who believe women should treat husband like Pir (Priest) or Dedota (God)"*.

The study revealed that women enjoy preparing feed, disposal of the

fry into the pond, this is especially for those who have a gher as there is no obligation to work in the gher. However, there is a different situation for the other women those who work as labourers in the gher. Women do not feel comfortable or happy to do heavy or hard work like evacuate, dyke preparation, weeding when they are compelled to do that, but there are no other options left for maintaining their livelihood. The husband of a woman worker said *“If women work in the gher, their beauty will be faded and the complexion of the body will be spoiled. They should stay at home and provide service to their husband”*. Another woman worker said, *“I work in the gher to reduce the economic hardship of my husband.”* In addition, a woman her owner stated *“If we hire a labourer then we have to pay for him/her. For this reason, I work in the gher to save money which is needed to maintain my family.”*



Her name is Dola Biswas, 34 years old, lives in Chitolmari of Bagerhat district. She is a worker of aquaculture gher. Dola said that her husband, Shushil Biswas is willingly unemployed like wonderer at present. Dola’s husband is very lazy. He does not do any work – not household chores and no work outside for earning income for family.

Dola Biswas’s works includes dyke and canal preparation in gher, weeds removal and loosing soil. She completes all household chores before going to work in the gher everyday. She lived from hand to

mouth before started working in the gher. Now she can make three meals for all members in her family. She gives pocket money to her husband.

She said, *“though I am earning good amount of money but my husband takes all decision about expenditures. I need to take permission before doing any work or move outside.”*

This story says, though the husband does not earn any income for his family and the family is run by wife's earning, husband controls decisions making. And wife is accepting this behavior. This is one side of the household level decision making scenario. On the other side, it is seen from this study, both husbands and wives participate in the decision making process of income and expenditure of the family still husbands play a dominating role. In some cases wives can spend money for the maintenance of their families but they have to get permission from husbands about the work and expenditure. Wives must take the consent of their husbands to spend money outside the family expenditure. Though, most of the men deposit their income/money to their wives but they make the decision about expenditure alone. However, in some families, both husband and wife take the decision about income and expenditure together. One of the respondents stated *“the men who buy advice/suggestions of their wives are Habla-Purush (Idiots/ low intelligent men).”* It can be said that even women earn income in cash or in kind for their family; they are not supposed to decide about its spending.

Many NGOs give loans to women in the study areas both project and non-project but where and how this loan will be used or how it will be repaid depends on the decisions of the men. It was also seen that, both men and women discuss about the loan related issues. Most of the time women face the pressure of loan repayment as her man partner does not stay at home at the time of weekly repayment. Furthermore the loan is in the name of the woman.

Men's unwillingness/resistance to participate in household work was evident in all of the FGD sessions. The outside activities like, agricultural work, shopping etc. are considered as man domain. They think women's work has no economic value. So, they do not like to help women in household activities, thinking it will degrade

their position within the household and society. Rather, they think it is their right to punish women if they fail to do routine household works. Although men like to take care of their children, most believe that cooking should be done only by women. However, most women during FGD sessions opined that they do not like to see that their husbands are performing the household tasks. A woman respondent opined, *“cooking and taking care of children are solely women’s work...though the men can take care of children, they do not willingly do these chores... and they should not do these also.”*

It seemed that most men belonging to the extreme poor category only ‘allowed their wives’ to go outside as they had no other alternatives. Most men, irrespective of religion, think women’s mobility in the public sphere should be restricted to the domestic domain and public places should be dominated by men. They think that, only if there is no alternative for a woman, she should go out. To them, visibility of women in the public sphere without being properly covered with a veil may provoke young men into harassing them sexually. Husbands said that they do not want to see their wives go out and talk with other people because it creates tension in them. They think all human beings are attracted to the opposite sex. So, their wives may be derailed if they talk with other men. Moreover, if other men see their wives in public places, it will be a sin for them. If women are bound to go, they must wear veils so that the outsider men will not pay attention to their bodies. Men in general, perceive women’s purity in relation to their family honor. The prime duty of a man is to protect such honor. Many consider a family’s honor may be threatened if a woman goes out in public and becomes a victim of harassment. Quite surprisingly, during the FGD sessions we have found most women expressing the same view. For example, a woman respondent who goes outside of their house for work and other purposes mentioned *“maintaining Pardah is important... wherever we go, we cover our heads and nobody gets a chance to look at us...pass any bad comment”*. A man respondent from Bagerhat said, *“Women should maintain Pardah as it is the rule of Islam...and it saves them from evil and sins”*

Men do not appreciate that woman go to local bazaar (market), but many men said women may go to big market if they need to shop for their children or buy clothes and other necessary things for themselves. A man respondent in Khulna stated, “New brides and

young women are not allowed to go outside the home...but children and old women can easily go outside...it is an issue of family honor...prestige..."

During FGDs most women opined that they do not like to go to public places like 'Bazaar' as those places belong to men in general. They also said that if their husbands would have earned enough, they would not have involvement in aquaculture activities as they feel that their husbands do not like such work. We found some women of younger age who differed with such general perception and suggested that now-a-days women should take responsibility of many of the works outside home (for example going to schools for children's education, hospitals, clinics etc.).

Men's perception with regard to access and control over resources reinforces man superiority over woman. Men in the study areas think that wives should have less control over resources and households should be maintained by the earnings of the husbands only. They consider work related with control over resources and households as exclusively men's domain because women naturally understand less than their man counterparts in any respect. To most of them, important economic resources in the hands of women are not safe because women are not strong enough to safeguard such resources. Moreover, they think if women have exclusive control over important economic resources they do not obey their husbands. Though women have in general opposed such perceptions, they have overtly emphasized men's role as the breadwinner in the family. For example, one of our woman respondents in a FGD stated: *"the man earns for the family...he is the family head...so he holds all rights of property and all important property belongs to him"*

10.7.3 Political Empowerment

'Women empowerment' is a complex discourse because it is often very difficult to integrate these two terms - 'women' and 'empowerment'. In one hand the women are treated as subordinated and the empowered women are seen negatively by the men in the patriarchal society. On the other hand, the women activists or the feminists are very critical about the 'power', because they believe the power structure is mainly responsible for depriving women from equal rights in the society.

Men-women discrimination is determined by the power position. Men make women subordinate by their establishing power over women in the patriarchal society (BDI, 2010). However, 'Pathways of Women's Empowerment' research of BDI (2010) suggested that there are two phases of women empowerment processes: First Phase – women power of decision making about them, power of controlling their lives and then attain power of raising voice family level. Second Phase - women to be empowered in raising voice and participate in social and national level decision making processes.

This study found the existence of some aspects of these discourses explicit and implicit in the study areas. The informants shared that both the man and woman take part in voting of local government and parliamentary elections, but the ratio is not the same. Some women cast their vote on their own choice, but most of them cast their vote discussing with their elder family members (father-in-law, mother-in-law, father and elder brother) or their husbands. Most of the woman participants do not have any idea about the candidates of the election. For this reason, this is very difficult for them to decide who is worthy enough for voting. This is the main reason for why the woman members consult their husbands or elderly members of their family before casting their vote.

Majority of the men informants opined that their wives participation in development works is a cause of creating tension in their existing gender relation with their wives. However, they welcome such participation for those women who are distressed or who do not have a man family member to support them. It should be noted here that women's participation in development processes that facilitated by government and NGOs projects and other external organizations like business groups is relatively a recent phenomenon, since 1980s. In the beginning people had a very bad opinion about women's participation in development project work. Some elderly and religious leaders convinced most people to think negatively about such work. They said that those who participated in such work would become Christians and after death they would be buried in a black cloth. But now-a-days, people do not have such bad perceptions about women's participation in development project activities, e.g., microcredit training, health care training, skill development training, water and sanitation training those are organized by government and

NGOs. Women's participation in aquaculture is relatively a recent phenomenon.

Men think that women may participate in development activities and aquaculture if it is within their own village. They rather encourage their wives to participate in women groups' activities and training. However, they do not prefer their wives to participate in development activities with men. Some men consider such work as *Bepordah* (breaking *Pordah*), which may cause harm to their family; some also think that NGOs are working to destroy their family life by bringing women out into public places. Contrary to these men, most women think that they should be involved in development work that facilitated by NGOs and government agencies as this helps them to contribute to the wellbeing of their family.

Most men believe that women working in a leadership role where they are above man members cannot perform better than men due to some structural problems. To them the most difficult problem for women is their own security. Many men think politics has become nasty and to become a successful politician one requires muscle men. They think only those women can survive who are backed by their male family members. Moreover, men think that women's physical structure also makes their participation in politics difficult. For example, they said that there were some public meetings regarding emergency relief distribution in which local political leaders lectured to build positive image of a politician, women were not attending this public meeting because of *Pordah* and their security issue. But, it is common that women attend public meeting of political parties in rural Bangladesh. The practice is that the party cadres mobilize the local people to attend their public meetings.

While talking about the woman Union Parishad (UP) Members, most men said that women members should not attend such public functions unless there is any special need or emergency meeting. If they have to attend, those that do must be accompanied by their man family members as a form of protection. Both men and women think women UP members should primarily deal with women and children development and health and rehabilitation activities as these are within the women's domain. They also added that women should not be involved with infrastructural development issues, relief and

rehabilitation activities, social justice and law and order issues as these are subject to power politics or, in other words, belong to the man domain. They think the UP Chairmen and other man members usually take most of the decisions and the women members should support that.

However, some women and a few men said that women members should be involved in all kinds of activities as UP members. In general, the majority of both men and women think a politician needs to take authoritative decisions which are not possible for women. As a result they should better prioritize their family responsibilities. For example, a man respondent said in a FGD, "*Women are so simple that they cannot even maintain their households, how will they participate in a complex game like politics?*". Some women opined, the women would be stronger if they would organise themselves and move around as a group.

We were reported that women's participation in NGO formed group is less if the groups are mixed of men and women, but women's participation is active if the groups are homogeneous i.e., all members are women. In response to our questions, the men informants mentioned that the women's participation is very high in microcredit groups of NGOs because women are the only members and borrowers. But in other groups like VDC for water and sanitation programme, Water Users Groups, different Sub Committees of Union Parishad, and NGO initiated mixed group of men and women, including SaFal project, women's participation is almost nil in their areas. Most of the NGOs form mixed group of men and women with the arguments that women alone cannot handle the very complex and conflicting situations in the processes of their development activities like attending training, access to social development services of the government, access to Khash Land, fighting dowry payment, fighting violence against women and children, marketing products of income generating projects, etc. NGOs' notion of forming mixed group to support women's taking over power & positions of men in the mixed group after a certain time. This study found that the villagers, including the women, do not agree with this concept/approach/notion and the frustrating result of women empowerment through mixed group approach reveal this social positioning of the women. This study found that one of the projects of one partner NGO of SaFal

project followed 'women's group' approach to execute livelihoods programme through women empowerment. They are experienced that this three years period project generated very satisfactory outputs, especially in relation to women's participation and leadership in livelihoods projects in compare to many of this NGO's projects which have followed mixed group approach. Study (Huq, 2001) suggests, women's group/organization is the efficient, effective and appropriate approach to women empowerment towards their collective initiatives and actions to establish their access, rights, entitlements and control & ownership over natural resources as well as social services for their sustainable livelihoods. Women's organizations of the disadvantaged rural women is the vehicle of attaining their political empowerment, which enable them to fight inequality, injustice, exploitation, violence and all forms of discriminations through collective actions. One can argue these local organized practices of sustainable livelihoods as 'counter-development' (Huq, 2001).

10.7.4 Physical Empowerment

Physical empowerment is one of the most important issues in the gender concept. The decisions about ones sexuality is treated as a right of a human being. In that study, it is seen that most of the decision are taken by their husband. It is found that all of the family dominated by man and girls are depended on man, head of the family for the decision making of marriage purpose but in couple life, husband and wife take decision jointly about family planning. One of the men respondents in Satkhira said, "*we sit together for discussion and exchange our opinion and finally take the decision about family planning. It is difficult to take decision from one part.*" Different case also found in Khulna district, one woman respondent said that "*family planning is not the task of man; only woman should take decision about this matter.*"

Health is one of the major issues for those who are working in the gher. In this perspective, women workers are more susceptible to water born diseases. Health care facilities are not provided by gher owners for workers. In this case, workers take traditional protective measures for preventing themselves such as applying grease, mustard oil and kerosene oil on her skin/body. One woman worker said, "Gher owners never care about our health, they just want us to work hard."

It is found from the three study areas i.e. Khulna, Bagerhat and Satkhira that they all have huge water problems. Their tube well water is contaminated by arsenic poison and has a high level of salinity. In these areas, women fetch water from long distances and men do not help them with it. One male respondent from Khulna said *“I do not have time to fetch water; I am busy with income generating activities.”*

In study areas, most of the respondents use sanitary toilet provided by the government and NGOs. But it is absent in the workplace where women work. During menstruation, women do not work in the gher. One woman respondent said *“we cannot work at gher because there is no toilet facility around gher. In addition, some say that gher is like a holy place, women are polluted during menstruation, so they should not do work in this time.”*

Men's perceptions about sexual and reproductive health care during pregnancy suggest more caring attitudes towards women. This has been supported by most women also. During the FGDs most of the younger women reported that their husbands are more caring with regard to their health care during pregnancy. For example, they stated that most of their husbands accompanied them to go to the health clinics or doctors. However, women who were older (above 50) said that their husbands consider pregnancy as a natural phenomenon, so they are not too bothered about this. They think women should perform their regular activities during pregnancy as they would when they are not pregnant. But the younger men think though a woman should perform the regular tasks or household activities, they should do so with caution. In general, both men and women think a husband's caring attitude towards women during pregnancy is a must.

It seems that men consider wife battering a way to exercise their power. During the FGDs most men said that husbands have the right to beat their wives for any wrong doing. They usually think that they have the authority and control over their wives. Men also believe, Islam has given men the power to control their wives. In a Muslim marriage, the father of the bride requests the groom by pulling his hands to take care of the bride's maintenance. This request often makes men think that they have the sole authority to control their woman counterparts. Husbands also think that if wives are not battered, they do not obey their husbands. There were very few men

who did not support wife battering over consultation with their wife to solve problems. A woman respondent and many other respondents opined the same: *“Women should obey their husbands...the husband has the right to protect as well as to rule over his wife...and most of the time problems arise when both the husband and wife argue with each other...in such situations one should keep silence...the wife should do this...”*

Men’s perception towards sexual harassment or eve teasing suggests a strong man bias. In the study areas both project and non-project, during FGDs most men said that women should be careful while going out of their houses. They think women themselves are responsible for being sexually harassed or abused, which suggests that they usually perceive women as sex objects. They think women should cover their bodies with a Burkha (veil) to protect them from the man gaze. The Muslim men think girls should be taught to follow the rules of Islam, covering their ‘secret organs’ with a veil. Therefore they should be more careful about their choice of dress and mobility as well. Most men opined that they are not against women’s mobility and a good girl never becomes the victims of eve teasing or sexual harassment, as she knows how to move alone in public. For example, a man respondent stated *“A girl should keep herself safe from evil eyes... for this she should wear decent clothes and maintain normal pordah, with these she can do anything she wants for her prosperity”*

But women opposed most of men’s responses and suggest that in many cases, even though the women were wearing Burkha, they became victims of eve teasing or sexual harassment. They also opined that many young school going girls also become victims of such violence even though they are not fully grown up. Therefore, they blamed men for their bad attitude towards women for such evil incidences.

It can be argued that if women work hard, and it is not recognized, it does not empower them. Not even if they get an income, because they are not allowed to decide about how it is spent. Their hard work influences their health negatively in the often saline water of gher and the hot sun. Till now they have not been given opportunities to form ‘women groups’, in which they could resist harassment and unequal wage pay together.

11. Myths regarding Women in Aquaculture

There have been many other functions and implications attributed to myths. They are often highly valued or disputed stories that still intrigue us even though many of us do not recognize them as a living genre in our culture. While women are increasing involving in the aquaculture, many contentious issues have gradually become “myths” such as:

Myth 1: Women are unable to do hard work.

In reference work in aquaculture gher, our informants of the study areas (both SaFaL project and non-project areas) stated that women are not physically strong so speed of their work is slower than men. The women do not have sufficient stamina for long duration of work because of their physical structure. Men can do the hard work. But this study found that women do the hard work in the aquaculture gher. This myth is used to exploit women – pay them low wages.

Myth 2: Gher is a holy place; women should not do work in the gher during menstrual cycle.

Local people including the women consider gher as an innocent/holy place where their livelihoods depend on. They think that women get grimy during their menstrual cycle so it is prohibited for women to work in the gher during menstrual cycle. Women themselves do not work during their menstrual period.

But this study observed, in actuality it is the other way around: women are vulnerable for the dirty and often saline water, especially when menstruating chances for urinal tract infections are high.

Myth 3: Women have low intelligence and intellectual capacity so it is easy to cheat them in weighting of products.

Most of the man respondents in study areas think that village women are uneducated and do not have knowledge about the outer world. They also do not have much aptitude and intellectual capacity to understand the strategic issues of business, so they cannot do any business. It is easy to do fraudulence with women in every step of business.

Myth 4: Women do not need to go to the market place.

Both the men and women carry the perception that men are the prime determinate of maintaining the family's needs. They have all rights and ability to go anywhere at any time to earn income. Men are more secured than women and men have capacity to resist any kind of violence while women cannot.

Our findings are that because women are not allowed to go to the market they have to sell the prawn fry to the middlemen and accepting a very low price. They would be much better off if they could have brought it to the market, like the men do.

One can argue from feminist optic, this is again petition principia, because it says, women can't go to the market because they can't resist violence by men: why are men not told to stay at home because apparently they don't know how to behave in public?

Myth 5: Wife does not need to hold superior position like husband.

There is a belief that husband should be treated as 'God' and to satisfy the position, women should obey the husband's words in every spheres of life unless it will be great sin and family will be destroyed gradually.

Drawing upon informants' views, it can also be argued, if the men want to be treated as "God" by women, should men not then also behave as "God"? Women don't aim for a superior position; all they want is equal pay for equal work and to be recognized for their work.

Myth 6: Women have no need to get high wages; they should not be equal like men.

Man is considered as guardian and chief responsible for the family, so they have prime duty to earn high amount of money. Men also have lot of duties and responsibilities for society, to maintain the locus, men should get higher wages than women as women have less responsibility towards the family and society.

But our observation is that men loose out a lot by not admitting that the work of their women is a very important contribution to the total income.

Myth 7: Women do not need to go outside as they are good at household chores.

Most of the man respondents believe that women are expert in managing household activities which is their inherent capacity. They have lot of patience than men that's why they are perfect fit for domestic work.

This study found, women's engagement in aquaculture contributes higher income in the family; to earn in income, women have to go out, there is a limit to the work that can be done at home, especially for those poorest families who don't have their own land.

Myth 8: Women leadership is not good for family.

Women do not have organizational capacity and intelligence to uphold leadership. Women are very weak at critical thinking to manage family and society and they do not have capacity to make any decision. If women take the leadership of family or society, conflicts in household and society will be raised and men will be criticized by society.

Myth 9: The man who takes suggestions from wife is a Habla (low intelligence man/idiot).

Almost all man and aged women respondents think that it looks peculiar if man takes any suggestion and decision from his wife. Then his family members, neighbors, relatives, and friend labeled him as Habla (consider him as "Leo" man), so it is kind of insult for masculinity of man.

Our study found that many men encourage their wives' participation in decisions related to aquaculture and family affairs like children's education, marriage, water and sanitation, borrowing money, health care, etc. and those families are doing better in aquaculture and over all development. It can be argued, the men who do not take a good suggestions or advises are even more Habla.

12. Myths in development work as often expressed by NGOs, project people, government officials, etc.:

Myth 1: Women Empowerment means taking over men's power-

position

Myth 2: Gender refers to only women.

Myth 3: Audience of Gender education is always women.

Myth 4: Educate women, Gender problem is solved

Myth 5: Men are always dominating

Myth 6: Women are always good borrowers of microcredit

Myth 7: Women's ownership over fixed assets combat separation & divorce

Myth 8: Women are weak in conflict management

Myth 9: Women cannot manage & lead [people's] organization, so men-women mixed group/organization is formed by NGOs

Myth 10: Aquaculture is men's work, not of women

Myth 11: Men work heavy, hard and long time, but not the women

Myth 12: Women's leadership is not accepted in general

13. Conclusion

The women of this study area believe, drawing upon their experience of aquaculture project and other household based livelihoods activities, that if husband and wife work hand in hand, consulting each other about decisions related to projects, children's education, share tasks and work load, and spending on household expenditures by both wife and husband, it brings economic benefits, social wellbeing and love, peace and happiness. In other words, women's participation in household level aquaculture and other income generation activities ensures the improvement of household livelihoods. Aquaculture projects in the study area are socially constructed as integrated small scale farming, which includes growing rice, [white] fish, prawn & shrimp, crab, and vegetables. The small and medium farmers are mainly engaged small scale aquaculture activities in the study areas. The small scale aquaculture project is known as "Pocket Gher". But 'Pocket Gher' holders and the local people call it 'Gher'. Though, in shrimp farming history in the coastal zone of Bangladesh large scale shrimp farm is called 'Gher'. Gher is embanked floodplains of large size, e.g., 100 acres and above.

Women's participation in aquaculture is quite visible in the study areas. Women play important tasks in the aquaculture activities. These tasks encompass earth work to build and repair gher dykes, collecting shrimp fry, nursing and feeding fish, and care taking.

Harvesting and marketing is done by men and women jointly. But spending earned money from aquaculture is mainly under the control of men.

In the initial stage of aquaculture in Pocket Ghers, men and senior women members in the household were not supportive of women's participation. But, the women pushed themselves into the process, and at a certain point their participation started receiving some appreciation, because it brought benefits to the household. However, several myths related to women's participation have not been removed totally. As a result, in spite of an increasing trend of women's participation in aquaculture, the presence of women in decision-making bodies, both within and outside of the household, is negligible. This can be addressed by imparting gender training and education to both men and women, which is an expressed need of the study respondents.

Women demand an enabling environment which provides them with the scope and opportunities of leading aquaculture in 'Pocket Ghers'. This enabling environment can be created by providing them with facilitative services in forming women's groups, providing them with skill training on aquaculture and microfinance, encouraging control over capital and decisions (by themselves) over harvesting and selling fish products, supporting their decisions over spending money, their access to market, and their ownership over land. Both the government and NGO projects need be socially constructed in this conceptual framework.

The households having aquaculture in 'Pocket Gher' for a period of three to five years have been able to ensure their livelihoods from the earnings from the aquaculture project. Mothers of these households achieved a certain level of authority to decide, e.g., concerning their children's education, especially for girls. They decide about sanitation, health care, livestock, vegetables cultivation and spending on food items for the household members. But, decisions related to marketing aquaculture products, borrowing and spending loan money, children's marriage, and building fixed assets remain mainly under men's control.

The trend of engaging women wage labourers by shrimp gher owners

has increased. Women from landless poor households comprise the majority of these wage labourers. They are also hired by the pocket gher owners. Both the large and pocket gher owners pay them lower wages than men. Women never protest against this discrimination and exploitation. Men think the women work less and women think they have no power to contest this verdict. If there were women organizations, then they could collectively demand for legitimate wages. Women want both government and NGO projects to support them to form and develop 'women organizations' and build networks with service providers, this in order to secure their empowerment. Women think that the development projects of both government and NGOs need to provide the women organizations' members with rights based training, including gender training to male members of their households. The women are not confident enough to demand their rights, including equal wages, and protection from abuse and exploitation. Women's organizations and training of these kinds would contribute to building this self-confidence.

Women from small, medium and landless households need microfinance to invest in aquaculture. But this microfinance should be in the form of 'seasonal loans'. In the current microfinance model, lenders recover loan money by weekly installments from the next week of loan disbursement. But returns of investment in aquaculture may come only after at least three months. Borrowers want to repay loans after the harvest. They call this periodic loan a 'seasonal loan'. On the other hand, the farmers may borrow money from local forias, arotders or mohajons, resulting in them being bonded to the lenders, selling their fish exclusively to them at a price below the market rate. The government and NGO projects should lobby microfinance institutes to develop alternative, aquaculture friendly loan products along the lines of the 'seasonal loan'.

Spreading functional literacy among women, especially farm women, requires urgent attention. Location specific and needs-based training programmes need to be organized because women's participation in aquaculture is now widely recognized as important. Adopting flexible timings and training approaches would encourage more women to participate in training sessions. Such training may contribute towards women becoming 'aquaculture specialists' in the household.

Development projects, especially related to sustainable livelihoods, food security and climate change adaptation in southwest region of Bangladesh, need to develop women-friendly aquaculture technologies and impart these technologies to the women concerned as a way of strengthening their ability to autonomously manage small-scale aquaculture.

Appointing more female trainers and extension workers can yield better results in technology transfers by circumventing social and cultural hindrances. This would result in women's easier access to technology. Organizing women's aquaculture clubs and implementing aquaculture extension activities through women's unions would improve women's access to information.

Gender in aquaculture is understood, from this research, as the participation of women from small, medium and landless households in small scale aquaculture, with a view to improving both their livelihoods and their status in society. The aim would be for women to exercise a more equitable role in the household, based on sharing knowledge, tasks, skills and decision making with their husbands as equals, in a way better calculated to ensure the household's long term happiness and well being. Projects by government or NGOs towards women empowerment that view such a process as a 'zero-sum' game that must come at the expense of men do not work, if only because often the women themselves do not agree with the concept. Women believe in their power in terms of knowledge, skills, access to information, and their own organization, and that this will enable them to be collectively empowered, and ensure their access, rights and control over ecosystem services and social services. Their vision is to work 'hand in hand' with men. We need to support women's collective initiatives towards ensuring gender development.

Reference

Alam T., Shahi M., Shifuzzaman, and Lasker. 2012. Economic Prospects as well as Human Rights Violation at Shrimp Farming: A study based in south west coastal region of Bangladesh, IOSR Journal of Humanities and Social Science (IOSRJHSS) Volume 1, Issue 1 (July-August 2012), PP 45-49.

Alam, K., 2010. Two Fishing Villages of Bangladesh: A community Study. Ph D Dissertation, Department of Development and Planning, Aalborg University, Denmark.

Ahmed, K., Halim, S., and Shamima Sultana, S. 2012. Participation of Women in Aquaculture in Three Coastal Districts of Bangladesh: Approaches Toward Sustainable Livelihood. World Journal of Agricultural Sciences 8 (3): 253-268, 2012

Ahmed, N., Wahab, M.A., Harakansingh. 2008. Integrated aquaculture-agriculture systems in Bangladesh: Potential for sustainable livelihoods and nutritional security of the rural poor. Aquaculture Asia Magazine. Jan-March 2007, 15-21; sighted in WP 5.1

Ahmed, M., Rab, M.A. and Gupta, M.V. 2001. Impact of improvement aquaculture technologies: Results of an extension program on Farming systems of Bangladesh. Asian Society, Manila, Phillipines. Asian Fisheries Science. 8(1): 327-329.

Ahmed, M., M.A. Rab and M.A.P. Bimbao, 1993. Household socio-economic resource use and marketing in two thanas of Bangladesh. ICLARM Technical Report 04, pp: 34.

Ahmed, K.K., S. Rahman and M.A.K. Chowdhury, 2006. Role of tribal women in reservoir fisheries of Bangladesh. Aquaculture Asia, 4(1): 12-15.

Begum, R., 2001. Role of women in fisheries development in Regional workshop on the role of women in fisheries development, 17-21 July 1995, Iloilo City (Philippines).

Baluyut, E. 1999. Women in aquaculture in Asian countries.

Proceedings of the ADCP/NORAD Workshop on Women in aquaculture. ADCP Rep. 87/28. FAO, Rome, Italy. 123 pp.

Bhaumik, U., P.K. Pandit and J.G. Chatterjee, 2008. Involvement of women in the development of inland fisheries. *Environment and Ecol.*, 11(3): 641-644

BDI. 2010. NarirKhomotayan: Natun Pother Shondhane. Pathways of Women's Empowerment Research work, Brac Development Institute.

Carbonara, Stefano. 2012. Assessing the contribution of aquatic by-catch from shrimp and prawn farming to rural livelihoods in southeast Bangladesh. Master thesis.

Cecile, B., K. McAndrew and P. Bulcock, 2010. Does cage aquaculture address gender goals in development? Results of a case study in Bangladesh. *Aquaculture Economics and Management*, 5(3-4): 179-189.

Chapman, G., 2005. Women in aquaculture research and development in three Asian countries. Lao PDR: role of women in fisheries research and development - situation and needs. *Aquaculture Asia*, 3(4): 18-19.

Crow, B. and Sultana, F. 2002. Gender, Class and Access to Water: Three cases in a Poor Crowded Delta, *Society and Natural Resources*, 15(8): pp 709-72

Dias, J.C. and C. Joseph, 2010. Women in fisheries: an Indian perspective in *The Fisher folk of Asia: justice denied - Report and statement of the fifth Asian fisher folk consultation*, January 26-31 1992, Asian Cultural Forum on Development, Songkla (Thailand), pp: 140-149.

Datta, D.K., Roy, K., Hassan, N. 2010. *Shrimp Culture: Trend, Consequences and Sustainability in the South-western Coastal Region of Bangladesh*

DoF. 2001. An assessment of the Socio-economic background of farmers trained in the Aquaculture Extension and Training

Component. Project Management Unit, Dept. of Fisheries, MatshayaBhaban, Park Avenue, Ramna, Dhaka. 22 pp.

FAO. 2012. Mainstreaming Gender in Fisheries and Aquaculture: A Stock-Taking and Planning Exercise. Available at <https://fao.presswarehouse.com/books/BookDetail.aspx?productID=360998>

FAO. 2009. Gender policies for responsible fisheries. Rome: FAO.
Felsing, M., C. Brugere, K. Kusakabe and G. Kelkar, 2000. Women for aquaculture or aquaculture for women? INFOFISH International, 3: 34-40.

Gopalakrishnan, A., 2001. Role of women in Indian shrimp farming, Naga. Manila, 19(4): 16-18

Halim, S. and M.K. Ahmed, 2006. Women in fisheries in Bangladesh: Level of involvement and scope for enhancement. In: P.S. Choo, S.J. Hall and M.J. Williams, (Eds.), Global Symposium on Gender and Fisheries, pp: 159-168. Seventh Asian Fisheries Forum, 1-2 December 2004, Penang, Malaysia. Penang: World Fish Center.

Halim, S. 2004. Marginalization or Empowerment? Women's Involvement in Shrimp Cultivation and Shrimp Processing Plants in Bangladesh. First published in Women, Gender and Discrimination Rajshahi: University of Rajshahi. 2004. Pages 95-112

Haque, M. M., Wahab, M. A., Little, D.C. and Murray F.J. 2012. Development trends and sustainability issues of four commercially important farmed seafood trade in Bangladesh.

Haque, M.T., Ahmed, M. and Forbes, A. 2000. Sustainable aquaculture extension approach in Bangladesh: A perspective of Greater Noakhali Aquaculture Extension Project. Paper presented at the Workshop on Aquaculture Extension: Impacts and Sustainability. Department of Fisheries/ICLARM Workshop. 11 May 2000, Dhaka, Bangladesh. 18 pp.

Huq, H. 2001. People's Practices: Exploring contestation, counter-development, and rural livelihoods. Dhaka: Community Development Library.

Kamaluddin, M. 2002. Need for land and agrarian reforms in Bangladesh, Paper presented at the regional workshop on Land Issues for Asia held in June 2002, Phnom, Penh, Cambodia, 7 p.

Kishor, s. & Neitzel, k. 1996. The status of women: indicators for 25 countries. Calverton MD: Macro International.

Marshall, C. and Rossman, G.B., 1989. Designing qualitative research. Newbury Park: Sage.

Merriam, S.B., 1988. Case study research in education: A qualitative approach. San Francisco: Jossey-Bass

Mosse, J.C., 2009. Half the World, Half a Chance. An Introduction to Gender and Development. Oxfam UK, Oxford.

Nazneen, S., Sultan, M and Hossain, N., 2011. NarirKhomotayanBishoyakDharona: rupertorerPothe. Pathways of Women's Empowerment Research work, Brac Development Institute.

Nwabueze, A. A. 2010. The Role of Women in Sustainable Aquacultural Development in Delta State. Journal of Sustainable Development in Africa (Volume 12, No.5, 2010)

Padmaja, R and Bantilan, M. C. S., 2008. Gender Issues in Aquaculture: Learning lessons from the International Crops Research Institute for the Semi-Arid Tropics. Development, 2008, 51, (271–277)

Sabur, S.A. and L. Rahman, 2008. Marine fish marketing in Bangladesh. Bangladesh J. Agricultural Economics, 2(1): 95-113.

Shirajee, S. S, Salehin, M. Mand Ahmed, N (2010). Sustainable Aquaculture, Volume XV No. 2, April-June 2010
Available at http://www.fao.org/fileadmin/user_upload/fisheries/docs/Changing_Face_Women_Jun10_.pdf

Shelly, A.B. and M.D. Costa, 2001. Women in Aquaculture: Initiatives of CARITAS Bangladesh. In Global Symposium on Women in Fisheries, Sixth Asian Fisheries Forum, 29 November, Taiwan.

Shindaini, A.J.M. and Baqui G.A.H. 2012. Impact of Shrimp Cultivation on Social Life in Rural Bangladesh: A Case of Bujbunia

Village in Khulna District, *ASA University Review*, Vol. 6 No. 2, July–December, 2012, pp.129-144.

Spradley, J.P., 1980. Participant observation. Fort Worth: Harcourt Brace.

Sullivan, Leah (2005) *The Impacts of Aquaculture: Development in Relation to Gender in Northeastern Thailand*, Bangkok, Thailand: Asian Institute of Technology.

Sultana, P.A., P.M. Thompson and M. Ahmed, 2001. *Women-Led Fisheries Management - A Case Study from Bangladesh*. In *Global Symposium on Women in Fisheries, Sixth Asian Fisheries Forum*, 29 November, Taiwan.

Weeratungeet. al .2012. *Transforming Aquatic Agricultural Systems Towards Gender Equality: A Five Country Review*, CGIAR, Working Paper: AAS-2012-21.

Weeratunge, N. and Snyder K. 2009. *Gleaner, fisher, trader, and processor: understanding gendered employment in the fisheries and aquaculture sector* World Fish Center, Malaysia/Malawi Paper.

World Bank. 2009. *Gender in Fisheries and Aquaculture, Module 13*. pp 561-567.

Yen, L.H., 2008. "Women in aquaculture research and development in three Asian countries. Vietnam: role of women fisheries faculty in aquaculture training and research". *Aquaculture Asia*, 3(4): 17.

