Making Productive Use of Khas land: Experiences of Extreme Poor Households

shiree working paper 6





Extreme Poverty Research Group (EPRG)

shiree
House 5, Road 10, Baridhara, Dhaka-1212, Bangladesh
October 2011

The Extreme Poverty Research Group (EPRG) develops and disseminates knowledge about the nature of extreme poverty and the effectiveness of measures to address it. It initiates and oversees research and brings together a mix of thinkers and practitioners to actively feed knowledge into practice through interventions taking place in real time. It is an evolving forum for the shiree family to both design and share research findings.

The data used in this publication comes from the Economic Empowerment of the Poorest Programme (www.shiree.org), an initiative established by the Department for International Development (DFID) and the Government of Bangladesh (GoB) to help 1 million people lift themselves out of extreme poverty. The views expressed here are entirely those of the author(s).

The paper has been peer reviewed by colleagues in either the Chars Livelihood Programme (CLP), the UNDP Urban Partnerships for Poverty Reduction (UPPR) and BRAC's Challenging the Frontiers of Poverty Reduction – Targeting the Ultra Poor (CFPR-TUP) programmes – all part of the DFID/UKaid extreme poverty portfolio in Bangladesh.

Making Productive Use of Khas land: Experiences of Extreme Poor Households

Working paper number 6

October 2011

Written by:

Sonia Kabir and Korban Ali

With cooperation from:

Shahidul Islam

Director, Uttaran

Abdul Khaleque

Project Coordinator

Uttaran -Shiree partnership project (SEMPTI)

shiree

House 5, Road 10, Baridhara, Dhaka-1212, Bangladesh

EXECUTIVE SUMMARY

Accessing khas land can help poor households diversify their incomes and facilitate a process of asset building alongside reducing the risks which threaten their livelihoods: It is, one way of accessing a means of production. However, for a particular section of people, the extremely poor, fulfilling the right to government-provided khas land and further making a sustainable production from it, is a difficult and challenging task. These are people who have no assets, whose daily income and expenditure rarely exceeds 50 Taka, whose daily consumption does not cross the recommended minimum consumption level of 2100 kilo calories, and who spend the majority (70 percent) of their income on immediate food consumption. As noted by Divine and Notely (shiree 2009) 'the extreme poor are not merely poorer than poor people: they face a fundamentally different set of situations.' To overcome these distinct situations, new social relationships need to be built and negotiations with different agencies need to take place. In some cases, these negotiations cost and initiate circumstances which lead the extremely poor into severely disadvantaged situations, while in other cases, these work in favour of building more secure futures for the extremely poor.

The Uttaran/shiree supported project "SEMPTI" has been an active attempt to provide support to extremely poor households in the southwestern districts of Khulna and Satkhira through 1) the provision of khasland (on a temporary and permanent basis) and 2) income generating assistance, with the overarching aim of graduating them from their existing situations of extreme poverty. It is in this context, that research has been undertaken to capture the major learning of the project so far.

This study investigated three key aspects influencing negotiations for the purpose of understanding how the gains were made from the khas land by extremely poor households. These were: 1) if and how intra-household dynamics and characteristics impacted the negotiations; 2) if and how the local socio-political situation and the location of the land bear influence and 3) how the extremely poor's relationships with external agencies including markets, the state and institutions have an impact on the negotiation process and how the land is made productive.

To answer these research questions, the primary data collection tools were case studies, 'Focus Group Discussions' (FGDs) and 'Semi-Structured Interviews' (SSIs). Respondent groups of this study included: SEMPTI project beneficiary primary groups; households getting access to government khas land through Uttaran's assistance; Uttaran Bhumi Committee members; SEMPTI project IGA (fisheries and agriculture) officers; Upazilla Nirbahi officers; AC/Land and Union Parishad chairmen. To identify the informant households, five FGDs were held with SEMPTI Project Primary groups located in various geo-economic contexts. Based on the opinion of the FGD participants, 14 respondent households were selected.

The data collected through FGDs and SSIs with different respondent groups point to three major arguments: 1) though khas land is considered an important source of livelihood for extremely poor people, generating and protecting the gains for sustainable livelihoods for those with low quality, under-sized land, and land situated in isolated locations, is difficult; 2) the strength and functionality of the extra-household relationships and networks that the households have built up, are key to ensuring better productive use of the land. The more non functional or 'exploitative' these relationships, the less successful the households become. These relationships need to be negotiated and negotiations bring both opportunities and costs; 3) Finally, khas land is an important source of livelihood, however female-headed households have not been able to be as successful as their male

counterparts. This is because the networking in relation to production with the outside world, in addition to decisions about selling, is still dominated by men. Women therefore 'shy away' or are 'shied away' from these contacts important to improve productivity. These impact negatively on their ability to make better use of their assets.

Overall, the study has come to the conclusion that the social structures within which extremely poor households function, constrain them in various ways. In most of the cases, a lack of capacities in terms of having inadequate knowledge, skills, negotiation and bargaining power, and access to government agencies for services, limit them in overcoming these constraining forces. The low productive practices of extremely poor households coupled with the difficult and isolated locations of their land are manifestations of their relative powerlessness.

The study has revealed a number of important suggestions for project-level improvement. Firstly, IGAs should be harmonised with the requirements of making land productive. This should be done in a way which allows the beneficiary to supplement project activities on their own terms. Additionally, field level staff should be more thoroughly trained in IGAs so that they can assist households in deciding the IGAs most appropriate for them. Trainings could also be done in more visible and demonstration-based ways. Given that female-headed households were found to be facing distinct challenges, attention needs to be given to developing gender-sensitive assistance which meets women's unique needs while also raising their confidence and voice. Also, to maximise the return of investments in land, investments need to be made in a timely and appropriate way. In addition to these project-based recommendations, the research findings also point to wider policy issues which deserve attention, namely: khas land identification and distribution should be considered as a development imperative by the government. In this way, there is scope for rural development policies and farmer development projects to include components for the development of khas land receiving households. While land needs to be transferred, simultaneous assistance is also needed to make the land productive. The role of UNOs needs to be expanded so that they fulfil their responsibilities set out in the 1997 policy on khas land identification and distribution.

ACKNOWLEDGEMENTS

This research study was undertaken as part of the lesson learning component of the Uttaran-SEMPTI Project under EEP/shiree. The researcher would like to thank the following people for their whole hearted effort in helping the researchers achieve the purpose of the research study:

Professor Geof Wood, Dr. Joe Divine and Ms. Lucia Dacorta of Bath University and Ms. Hannah Marsden and Mr. Saidur Rahman of shiree. Thank you all for the time and encouragement that you have given me to accomplish this task. Your direction and suggestions have helped me complete this task in an organised way.

The staff of the SEMPTI project of Uttaran, who in spite of having their busy schedule, helped in collecting data for this research. Here the researcher would especially like to mention the names of the following persons: Mr. Abdul Khaleque, Project Coordinator, Mr. Dulal Deb Nath, Centre Manager, Debhata, Mr. Mostafizur Rahman, Centre Manager, Batiaghata, Mr. Nazmul Bashar, Centre Manager, Dumuria and Mr. Tariq Aziz, Super visor, Palli Chetana Ashashuni Centre for their kind help.

My heartfelt thanks to all the Senior Field Organisers (SFOs) of Uttaran and Palli Chetana--without whose participation the data collection task would have been impossible.

Special thanks to Mr. Shahidul Islam, Director, Uttaran, Mr. Anis Rahman, Director, Palli Chetana and Mr. Abdul Majid Mallik, advisor, Uttaran for helping me undertake this research study.

And lastly, to Mr. Korban Ali for rendering all cooperation and support for successful completion of the research study.

THANK YOU.

CONTENTS

Executive Summary i

Acknowledgements iii

1. Introduction 1

1.1 Uttaran/shiree Partnership Project: 2

Sustained and Expanded Effort to Make the Ultra Poor out of Extreme Poverty by Transferring Assets, Cash and Skill in an integrated Approach (SEMPTI) 2

Figure 1: Maps of the SEMPTI Project working area 2

1.2 Research Questions 3

1.3 Rationale 3

2. Behaviour and Strategies of Extremely Poor Households: In the Context of Land Productivity 4

A brief review of literature 4

3. Methodology 7

3.1 Study Design 7

3.2 Data Collection Procedure 7

Figure 2: Data Collection Procedure 8

3.3 Tools of Data Collection 8

4. case study and quantitative information 9

5. Findings from FGDs with Primary Organisations 9

5. Findings from the semi-structured interviews with Households 11

5.1 Information on Investment and Return 11

5.2 Dependence on external agents 12

5.3 Diversified Income 13

5.4 Mobility and consequences 13

5.5 Roles of husbands and wives in male-headed households 14

5.6 "Gambling" attitude of the unsuccessful farmers 15

5.7 Concept of virus 15
5.8 Credit 15
5.9 Learning new techniques and skills for increased production 16
5.10 Tenure Insecurity 16
Retaining the land 17
5.11 Linkages with government agencies 17
5.12 Religious minority Vs. Religious Majority 18
5.13 Quality of land and production 18
6. Findings from the FGDs with Uttaran Bhumi Committee members 19
6.1 The size of the land 19
6.2 Developing the khas land 19
6.3 Tenure of land 19
6.4 Advanced Production technology needed for some of the contexts 19
6.5 Government Support 19
7. Findings from the SSI with UNO and AC/Land 20
7.1 Lack of support from Government for use of Khas land 20
7.2 Dependency on relief 20
7.3 Quality and tenure security of land 20
8. Findings from the SSIs with Project Fisheries Officers 20
8.1 Insufficient use of Lime (Calcium Oxide) 20
8.2 Overstocking 20
8.3 Insufficient information on the release of PL and the time for harvesting 21
8.4 Early harvest 21
Figure 3: Sequential process of low productivity and the inter-relationship of the components 21
9. Findings from SSIs with SEMPTI Agriculture Officers 22
9.1 Control of the water supply and higher paddy production 22
9.2 Good quality inputs for higher paddy production 22

10. Key analysis and conclusions 22

10.2 Practical steps for SEMPTI to provide input packages with khas land transfers 24

10.3 Policy Recommendations 25

11. References 26

Annex 1 28

Table 1: Household characteristics based on CMS 1 data (2009) for Shrimp Region 28

Table 2: Household characteristics based on CMS 1 data (2009) for Paddy Region 29

Table 3: Household characteristics based on CMS 1 data (2009) for Paddy and Golda Region 30

Annex 2: Description of livelihood region study areas 30

Case Study 1- Shrimp Production 30

4.4 Case study 2: Paddy Production 31

4.5 Case study 3: Paddy and Giant white shrimp (Golda) 32

Annex 3: Production Experiences of Households 33

Table 4: Production Experience of the Households for Shrimp (Amounts in Taka) 33

Table 5: Production Experience of Households for Paddy 34

Table 6: Production Experience of Households for Golda and Paddy region Amount in Taka)……..43

1. INTRODUCTION

Significant evidence shows that "economic growth tends to accelerate when people can access land fairly and efficiently and when land tenure is secure" (DFID, 2007). For example, an analysis of 73 countries between 1960 and 2000 shows that those countries with more equitable initial land distribution achieved growth rates 2-3 times greater than those where land distribution was less equitable(ibid). The poverty-reducing potential of more equitable land distribution has been further illustrated by statistical analyses showing that "a decrease of one third in the land distribution inequality index results in a reduction in the poverty level of one half in about 12-14 years. The same level of poverty reduction may be obtained in 60 years by agricultural growth sustained at an annual average of 3 per cent and without changing land distribution inequality." Land reforms throughout Asia following the Second World War resulted in a 30 per cent increase in the incomes of the bottom 80 percent of households, while leading to an 80 per cent decline in the incomes of the top 4 per cent (DFID, 2007). Ownership of land holds significant potential for increasing standards of living as well as reducing inequalities in low-income countries.

For Bangladesh, the value of land transfer could be an important lesson to learn given the country is aspiring to increase its growth rate from the prevalent 5 percent GDP growth (Barakat, 2005). However, for this growth to be pro-poor, the income disparity between the rich and the poor has to be minimised. According to government records, 80% of the poor people of the country live in the rural areas out of which 30% belong to the extreme poor category. Most of these households are landless and survive on selling their labour on a daily basis. The monthly income of these households is rarely more than 2000 to 2500 Taka (ibid). This is not enough to have three meals per day, or have enough to spend on essential requirements like clothing, health and education. Nevertheless, studies have shown that, households that have received state-owned khasland, monthly incomes have diversified from single options. In addition, the increase in income they have received from agricultural production of their land has been re-invested in other economic activities like poultry, dairy farming or small business endeavours. Government records have also shown a positive relationship between land ownership and spending more on food consumption, education and health (ibid). From a rights perspective, 'access to land' can be seen to be closely related to the right to adequate food, as recognised under article 25 of the Universal Declaration of Human Rights 3 and article 11 of the 'International Covenant on Economic, Social and Cultural Rights.' It has been argued that improving the security of tenure encourages smallholders to invest in land, and in principle lowers the cost of credit by increasing the use of land as collateral. Access to land also encourages more sustainable farming, particularly through the planting of trees and more responsible use of the soil and water resources (ibid).

The importance of khas land is not only limited to generating benefits for individual households but it also acts as a catalyst to help organise people to claim their entitlements. The benefits of possessing a piece of land can be so strong as to prepare thousands of landless people to fight against elites wanting to capture large areas of khas land. As commented by Devine:

> *Since elites operate as intermediaries between the state and the rural poor, they are in an advantaged position to extract the maximum share of whatever resources and surplus are available (Devine 99: 199).*

One of the core objectives of the Uttaran/shiree partnership project (SEMPTI) is to facilitate the process of providing access to khas land (on a temporary and permanent basis) to extreme poor households alongside income generating assets (IGAs). In this research, we

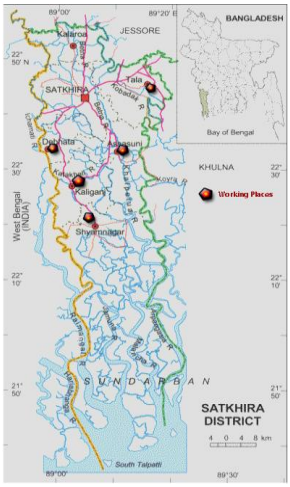
want to explore the experiences of these beneficiary households in order to understand their strategies, capacities and constraints in turning the plot of land/waterbody into a source of sustainable income. We want to see what external and internal factors emerge, and if and how these interact with each other. The overarching aim is to identify ways to protect the gains made by households gaining access to land and IGAs.

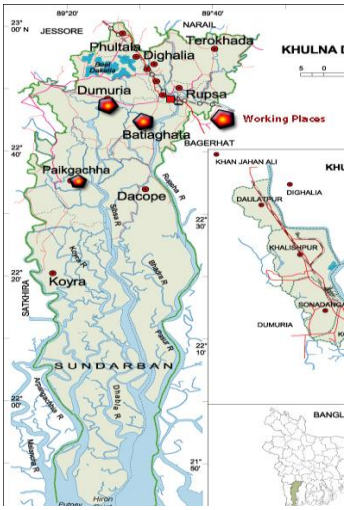
1.1 UTTARAN/SHIREE PARTNERSHIP PROJECT:

SUSTAINED AND EXPANDED EFFORT TO MAKE THE ULTRA POOR OUT OF EXTREME POVERTY BY TRANSFERRING ASSETS, CASH AND SKILL IN AN INTEGRATED APPROACH (SEMPTI)

The South-Western region of Bangladesh is a disaster-prone area also affected by a high level of saline intrusion due to the low flow of Ganges water and high tides in the Bay of Bengal. Eighty percent of people in this part of Bangladesh are poor while 28 percent are considered extreme poor (World Bank, 2007). Due to the threat from cyclones, water logging and other natural disasters, thousands of extremely poor communities are compelled to alter their traditional livelihoods. In partnership with DFID, shiree and the Government of Bangladesh (GoB), Uttaran has been implementing the SEMPTI project since 2009 to assist communities to move out of extreme poverty. The project helps selected beneficiaries to access khas land (on a temporary and permanent basis) alongside providing livelihood support through a variety of IGAs (poultry birds, cow, goats, lambs, shrimps, white fishes, grocery items for mini shops, vans for transport of people and goods, inputs for handicraft items like bamboo etc). The project also provides skill based trainings like poultry rearing, duckery, cow fattening, homestead gardening, fish cultivation, crab culture and others based on the need of the beneficiary households. Working with 4 local partner NGOs, namely IDEAL, Mukti Foundation, Palli Chetana and Rupali, Uttaran has 7 Centre offices, and is working in 8 Upzallias, namely: Batiaghata, Dumuria and Paikgacha under Khulna District and Assashuni, Debhata, Kaligonj, Shyamnagar and Tala Upazillas under Satkhira district. These Upazillas were selected on the basis that there was a high prevalence of extreme poverty in these areas, and also on the availability of khasland and khas water bodies. The project is working with 12,000 extremely poor landless households (HHs) (Uttaran is working directly with 9,000 HHs and partner NGOs with 3,000 HHs).

FIGURE 1: MAPS OF THE SEMPTI PROJECT WORKING AREA





1.2 RESEARCH QUESTIONS

The primary research questions of this study are as follows:

1. In what ways do the characteristics, demographic conditions and intra-household dynamics of extreme poor households affect the productive use of land?

2. In what ways do the geographic and socio-political aspects of the location of the land affect the productive use of land?

3. In what ways do households' relationships with wider contexts and agencies (institutions, markets and the state) affect the productive use of land?

1.3 RATIONALE

GOB (1997) policy recognises the need for khas land recovery and distribution for creating sustainable livelihoods for extremely poor households. In some areas, this has been supported by NGOs, including Uttaran, a social development focused NGO, which has been pursuing this issue in the South-Western region of Bangladesh for the last two decades.

However, the process of transferring land is difficult in the context of Bangladesh. Firstly, the khas land policy is not enforceable by law. Secondly, government administrative agencies at the local-level have created avenues for the rich and elites to take the maximum benefits from this scheme, rather than enabling the poor's access to khas land, for whom the khas land policy was initially formed. The interest of the rich and elite towards grabbing khas land has presented continuous difficulties for the extremely poor in attempting to fulfil their entitlement claims.

Besides a lack of income, experiences of extreme poverty are closely associated with issues of social isolation, a lack of education, limited access to social resources, markets and social and political institutions. Extremely poor people suffer from predictable and unpredictable shocks such as rises in the price of essential foods, disasters, deaths, diseases, and dowry payments. Such shocks pull households under the line of extreme poverty, some of staying there temporarily and others more permanently or chronically. The World Bank (2008) recently showed that households with lower endowments - in terms of education, land ownership and asset ownership - are likely to be more vulnerable to certain types of shocks.

Given this, whether extremely poor households possess the capacity to negotiate with formal institutions or have the bargaining power to confront rural land grabbing elites (upon which they may depend for survival during distress periods) in order to fulfil their entitlements to land ownership is a major concern. The extreme poor are weak in terms of their social and political agency, and as a result, struggle to make their entitlement claims heard and realised. Further to this, elite capture of the policy process can impact how households make lands productive even when they have been gained. Retaining and making the land productive can be a challenging process given the ongoing threat of elite capture. This presents significant difficulties to NGOs working on these issues.

During data collection for CMS 5 (S) (an in-depth household tracking study) for the SEMPTI project, researchers observed that beneficiary households had implemented different strategies for generating sustainable incomes from the plots of land that they received from the local administration. Households have started negotiating and re-negotiating with different agencies, and had started to develop new kinds of social relationships. Some of the households were able to generate a regular income by utilising these strategies while in other cases, households were not successful. Some households were able to build new

relationships which allowed them to earn increased profits from the land while some are still struggling. Different characteristics and capacities of the households were also seen to be major factors for them either escaping or descending further into poverty (Sen and Begum, 2003) before becoming involved in the project. This research was an attempt to see and understand the negotiation processes of beneficiary households in terms of what has enabled some of these households to generate and **protect the gains from the land** and what has not.

2. BEHAVIOUR AND STRATEGIES OF EXTREMELY POOR HOUSEHOLDS: IN THE CONTEXT OF LAND PRODUCTIVITY

A BRIEF REVIEW OF LITERATURE

Abundant literature is available on the causes and impacts of landlessness among rural poor households of Bangladesh, and on the socio-economic advancement that land ownership can bring to the poor. However, there is a knowledge gap regarding the efforts and experiences of extreme poor households and if and how they **can make productive use of land**[1]**.** Below, a number of insights from the social sciences exploring the complex relationship between land productivity and farmers' behaviour and strategies are reviewed.

First, in 1980, Januzi and Peach wrote an article on the major concerns of the agrarian system in Bangladesh which they argued hindered the poverty reduction process. They argued that since key factors such as land ownership, control, labour and investments were concentrated in different hands, no one is willing to make significant investments to make the land more productive. This resonates with the idea of the 'built-in depressor' which constricts higher productivity of land (Thorner, 1962). In devising this term, Thorner tried to explain what limited the generation of higher land productivity in the Indian country side. The built-in depressor refers to "a complex of historical, social and economic factors that acted as a formidable block against the modernisation of Indian agriculture". The factors include 1) The growth of money lenders who started to take over the peasant's land and rent it out when the peasants failed to repay the money loaned to them; 2) the added pressure on the land by the jobless rural artisan communities and 3) substantial increases in the share of landholders in the produce from the soil.

He further commented:

> *Where owners and superior tenants subsisted primarily on rents, the portion remaining to the inferior tenants and crop sharer was so small as to keep them stripped of capital; where hired labourers were employed, they were drawn typically from the lowest castes or tribes. Timorous, uneducated, ill-paid and with no stake in any increase in output, these agricultural labourers could hardly have been expected to take interest in advance techniques or even to make proper use of better tools. Crop production methods essentially remained the time honoured ones dating to pre-British times and passed on from generation to generation...Associated agrarian problems such as insecurity of tenure, fragmentation of cultivation holdings and*

[1] In identifying which beneficiary households were able to make productive use of the khasland and who were not, we depended mostly on the opinions of the primary organisation members. Please see the methodology section for detail explanation.

concentration of credit and marketing in the hands of money lenders served to retard productive investment in agriculture(Thorner, 1962).

Januzi and Peach (1980) provided a solution to this when they argued that land productivity will only improve if the control and ownership is given to the people who provide the labour. This was demonstrated in the 'Oxbow Lake Development Project' of IFAD in Bangladesh where groups of fishermen were able to take leases of lake land for twenty years. The security of the lease resulted in increased investment in lake maintenance and increased productivity (IFAD 2009). Though the present context of Bangladesh has changed from that of the era of built-in depressors, the structural aspects, being the root cause of all forms of deprivation, arguably remain the same with emergence of new actors manoeuvring the process of exploitation. In a sense, landowners have become the present day's land mafias or the colonial '*sarkar*'. Money lenders have acquired new ways of enslaving people. Social structures have arguably changed very little though new forms of livelihoods have come into being which utilise the same exploitative threads that have been in place for centuries.

The resulting effects of these exploitative relationships manifest themselves in the powerlessness of the extreme poor people to make decisions about their lives and livelihoods. As argued by Wood (1999), family farms in Bangladesh will disappear over time: "*the family farm will cease to be the primary decision making unit over a range of decisions on the land formally held by the family, like crop rotation, price and cost responsive crop choice and scale of investment in inputs, timing of labour operations (ploughing, plot preparation, initial application of fertiliser, transplanting, later fertiliser application, weeding, spraying, even guarding and harvesting.*" The decisions will be made by the wider agricultural system where different agents have a stake in all these factors. Without negotiating with them, small holders would find it difficult to independently make decisions related to production.

Operating under all these conditions, how the extremely poor households can make a sustainable income from small plots of land, in the contexts of complex relationships with wider actors and agencies, is important to explore and understand.

Most of the extremely poor households living in rural areas are landless or marginal land holders, having far less than 5 decimals of land. The livelihood strategies of these land holders has received interest among scholars. Federick Engles (1852) identified small peasants as "*both owners and tenants, particularly the former. The amount of land they cultivate is no bigger than their family can till and no smaller than that can sustain their family. They neither hire in labour nor hire out labour*" (Frederick Engels as cited in Mahbubullah,1996: 15). However, Engles also highlighted that regions in which land is possessed by small land holders may not be enough for the subsistence of their families (Mahbubullah, 1996: 16).

The Russian scholar Kautsky (1899) developed some key ideas about how small land holders are able to generate a sustainable livelihood. The power of endurance of the small holding farms, according to him, was not based upon higher productivity but on lesser needs. As commented by him "*The small farms depressed their consumption standards and also internalised some of the costs, such as the cost of management and the cost of labour..... However, along with these 'advantages' enjoyed by small farms (which were in fact self deprivations of the worst kind) in the sphere of production, they faced numerous challenges to market their products, procure loans to bridge cash gaps, and to introduce technological innovations.*" (Jairas Banaji as cited in Mahbub Ullah 1996) Through Kautsky's writings, another characteristic of small farms was recorded. According to Kuatsky, there is a conceptual difference between the competitiveness of farms and the survival of farms. "*The concept of competition is to be applied in the context of market-based relations. Smaller farms are likely to be less involved in the market while large capitalist farms are highly market-oriented. In this sense, it is not logical to say one is more competitive than the other. If small farms continue to*

exist, it would mean they have the capacity to survive rather than the capacity to compete in the market" (Mahbub Ullah, 1996).

Dr. Lenin Azad's (2011) article on the contemporary debate on Bangladesh's agrarian structure, explains how small farmers avoid taking risks due to high input costs and volatile markets. Farmers are aware that if they cannot provide intensive support to all components of farming like then they may face production losses. As such, farmers may confine themselves to a similar level of production to that of the previous year. Those who have one bigha or less land are part of the labour market and find that when they want to provide intensive support to the land, other sources of income stop. Those with one to two acres of land, and work hard on the land, rarely have the time to spend on other income generating activities, are more likely to have a seasonal income and take loans from money lenders. Overall, they find it difficult to find a certain level of stability in profit making as they remain paying interest to money lenders (Azad, 2011).

Furthermore, land reform along with favourable rural development policy is thought to go hand in hand in reducing poverty. Favourable rural development policy manifested in access to reliable information, access to low interest rate based credit, access to agricultural input, and access to markets can facilitate the process of making the extremely poor more capable to negotiate with different agencies from a favourable platform. Several poverty alleviation projects for the landless and near landless farmers have been adopted over the years having components such as credit, training, linkage strengthening and marketing (Hye, 1996). However, in Bangladesh, having access to such services by extremely poor people still remains difficult.

The above discussion illustrates one way of seeing the behaviour of the landless and largely marginal farmers who make up the majority of extremely poor people in Bangladesh. Several research studies conducted in the 1980s villages throughout Bangladesh provide another dimension of small land holders behaviour related to productivity. A brief summary of the findings were presented by Saha (1997) where he highlighted that intensive labour use facilitates higher yields from small size farms.

This behaviour was also recorded in research carried out on the shrimp sector in Bangladesh. For example, one of those carried out in the coastal areas showed that the 46% of variance in productivity among shrimp farms could be explained alone by labour costs, followed by loans at 5%, and *Gher*[2] size at 3%. This indicates that the shrimp industry in Bangladesh is primarily labour intensive, especially when compared to other countries where more capital intensive methods have resulted in higher yields per hectare. For this reason, in Bangladesh's scenario, *"small farmers have greater return than large farmers per hectare of shrimp cultivation. The reasons for this are small farmers efficient use of inputs to gain higher yields while keeping costs of both fry and labour relatively low through their direct involvement in farm management and maintenance"* (Nuruzzaman, 2006).

Given the existing knowledge on this topic, this research intends to explore how SEMPTI beneficiary households receiving khas land behave and try to make land productive. What happens to land productivity and incomes when beneficiary households, who are extremely poor, somewhat socially isolated possessing few linkages with formal institutions, gain ownership and control of land along with certain amounts of assets? As the amount of land received by these households is no more than one acre, the research will examine the strategies adopted by households to generate sufficient incomes from the land. Through critically looking at all these dimensions, it is believed that an understanding might be

[2] Shrimp farms or shrimp enclosures are known as Ghers in Bengali.

generated regarding the interrelated variables influencing the use of the khas land received by the households.

3. METHODOLOGY

3.1 STUDY DESIGN

The study design includes a mix of methods, largely involving case studies. These have been used as they are "empirically omnivorous" (Patton, 2002) and the data that make up a case study can entail observations, interviews, transcripts, notes, and documents (including policy, laws and regulations), enabling the researcher to capture the different aspects of a phenomenon in-depth. This section provides the details of the design of the study.

The population for the research is beneficiary households of SEMPTI project receiving khas land in the period of July 2009 to June 2010. The total number of households receiving khas land in this period was 1614, of which 1440 received temporary lease agreements and 174 received permanent settlement[3] deeds. The project beneficiary households are organised into Primary Groups. Two conditions were fulfilled during selection of the groups:

1) These groups were located in three major livelihood regions of the south western coastal parts of Bangladesh: Tiger shrimp (*Bagda*) production, Paddy production and Paddy and White Giant Shrimp (*Golda*) production regions.

2) We then chose representatives from locations which were close and distant from market centres. Using 'distance from a market centre' as a variable was important since we already knew from respondents that moving products to markets was a time consuming task with very immediate cost implications. Thus, our respondents reflected 6 different 'production contexts':

Context 1: Paddy production close to market centre;

Context 2: Paddy production at some distance from a market centre;

Context 3: Tiger shrimp (*Bagda*) production close to market centre;

Context 4: Tiger shrimp (Bagda) production at some distance from a market centre;

Context 5: Giant white shrimp (*Golda*) production with paddy close to market centre;

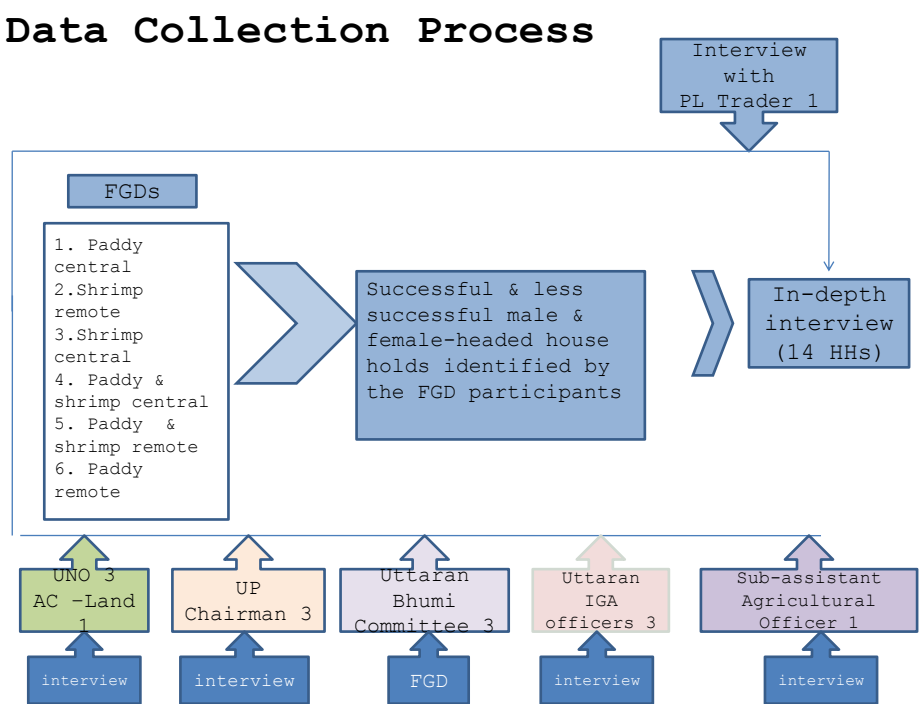
Context 6: Giant white shrimp (*Golda*) production with paddy at some distance from a market centre.

3.2 DATA COLLECTION PROCEDURE

The data collection procedure was as follows:

[3] A temporary settlement of khas land means the user can lease the land for one year from the Government while a permanent settlement entails a lease period of 99 years. The one year settlement needs to be renewed every year paying a fixed amount of fee to government.

FIGURE 2: DATA COLLECTION PROCESS



FGDs were conducted with groups representing each of these contexts. Through the FGDs, several themes related to productive use of khas land came to the fore. FGD participants also helped us identify 14[4] households who were considered to have been either successful or less successful in making productive use of their khas lands[5]. We then interviewed these households. Data was also collected from the Upazilla Nirbahi Officer (UNO), A/C Land, Union Parishad Chairmen, Uttaran Upazilla Bhumi Committee members, traders of Post Larvae (Fish Fries) and from the agriculture and fisheries officers of the SEMPTI project.

3.3 TOOLS OF DATA COLLECTION

[4] For each 'production context' we had planned to interview one successful male and one successful female along with one less successful male and one less successful female headed household. But for some production contexts, we were only able to conduct FGDs either with all female primary organisations or with all male primary organisations. The number of respondent households per 'production context' can be seen in the table titled 'Findings from FGDs with Primary Organisations' in Section 5.

[5] For the research, we did not use any standard definition for terms like 'successful' and 'less successful' beneficiaries. Instead, we relied more on the opinions and understandings of the primary organisation members (who were the respondents for the FGDs). We asked them to tell us who among them, they thought, had done well utilizing the khasland received from the government. The opinions given by the respondents depended more on the context of the area, on the circumstances and on the particular beneficiary's agents. The different opinions given by the FGD respondents can be seen in the 'Findings from FGDs with Primary Organisations' table in Section 5.

In total we carried out 14 SSIs (Semi Structured Interviews) 5 FGDs and several key informant interviews and 2 FGDs with Uttaran Bhumi committee members. Both these tools facilitated the process of 'methodological triangulation' as SSIs provided more scope for us to probe and follow up interesting issues and concerns, while the FGDs provided the scope to validate the data generated from the interviews. During the data collection process, informed consent of the participants was taken, participants' right to withdraw from the research was respected, and principles of confidentiality were followed. Debriefing sessions after interviews were held in which participants had the opportunity to ask questions to the researchers.

The following sections present the findings of FGDs and interviews conducted with the primary groups, informant households and key informant groups belonging to the three livelihood regions identified. For the research question number 1, focusing on the household characteristics and intra-household dynamics, CMS 1 data (household profiles of shiree project beneficiaries) has been analysed and presented in a table. For research questions 2 and 3, which explore the quality of khas land and informant households' relationships with wider contexts, FGDs and semi-structured interviews with primary groups, informant households, project IGA officers and local administration personnel were conducted. The findings are presented here draw out major themes that were evident in the data.

4. CASE STUDY AND QUANTITATIVE INFORMATION

The CMS 1 (a baseline household profile survey) was conducted in 2009 when the SEMPTI project started. A summary of this data is provided in tables 1-3 in Annex 1. CMS 1 data shows that the average family size of the informant households was 4 persons. For two of the female headed households, their husbands had abandoned them. In the cases of the other two households, the husbands had died. At the time of data collection, all of the informant households earned less than 2000 Taka a month and had household expenditures of less than 1500 Taka a month. Only in one case, monthly income exceeded 2000 Taka. The CMS1 survey asks questions about the mobility of the female members of the household, and this was recorded as low. All the households recorded that they had not taken any loans from any individuals or any agencies. Literacy and school attendance among the household heads (husbands and wives) was found to be low; however, children of households were attending school. Details of the three livelihood study areas are included in Annex 2.

Annex 3 details the production cycles of these households in order to highlight their production practices. For most of the households, the production cycles are of 2009-10, 2010-11 or 2011 periods. As most of the IGA assistance was provided in 2010, the aim was to see the practices of the households with and without the support. This data was collected through SSIs.

5. FINDINGS FROM FGDS WITH PRIMARY ORGANISATIONS

The main purpose of the FGDs was to identify informant households which have been successful or less successful households in terms of productive use of the land. Different themes were generated through the FGDs and households were selected based on the opinions of the FGD participants.

Location	Raised Themes	Selected households
Paddy Production Close to Market Centre	1) Land erosion, stealing of soil and tidal water making cultivation difficult. 2) Though khas land is located outside the water development board embankment some plots are protected by embankment constructed for fish cultivation. 3) Unavailability of paddy seedlings appropriate for the area. The inside land rice variety is called Boron and the outside variety is known as 'badai' or 'Chorua' which are local variety rice. 4) Beneficiaries whose lands are protected through embankments have done better compared to those whose plots of lands are by the riverside and without any protection.	One successful household (male headed) One unsuccessful household (male headed) One unsuccessful household (female headed)
Tiger shrimp (Bagda) production at some distance from a market centre	1) Access to capital - it has a relation with providing more care and acquiring fish feed resulting in fewer viruses. 2) Quality of the land (some land can retain natural fish feed, therefore lowering the requirement of fish feed). 3) Amount of rainfall—last year, due to inadequate rainfall, the respondents were not able to release carp fingerlings which has added to the loss experienced. 4) Those who were able to keep on releasing Post Larvae (PL) inspite of virus did better compared with those who weren't.	Two successful female headed households One unsuccessful female headed households
Tiger shrimp (Bagda) production at some distance from a market centre	1) Saline water cannot be pumped out from the area which made rice cultivation difficult. 2) The canal for pumping out saline water has become narrow and there is an inadequate number of sluice gates. 3) Viruses are also a big threat and come with the PLs. Respondents get the PLs from the hatcheries which they believe are virus affected. 4) High Mortality rate of PL is a problem. Before, the participants would be able to hatch 800 PLs out of 1000, but now it has become 100 to 250. When the PLs are released in the pond from the hatcheries, they die. The mortality rate of PL has increased. 5) The person who had been aware, laborious and provided intensive care for production did better than those who did not.	One successful male headed household One unsuccessful male headed household
Tiger shrimp (*Bagda*) production close to	1) Virus and the need for proper care of the shrimp farm. 2) The need for technical training on fish cultivation.	One less successful female headed

Location	Raised Themes	Selected households
market centre	3) Those who were able to receive fish cultivation training did better than those who did not.	household One successful female headed household One less successful male headed household One successful male headed household
Giant white shrimp (*Golda*) production with paddy at some distance from a market centre	1) Most of the households are doing high yielding IRRI paddy for one season and shrimp for the rest of the time. 2) Saline intrusion and high tides are the major problem for the area. 3) Those who are skilled in rice production and can cultivate before the salinity of the water rises can be more successful than the others.	Two male headed households were selected(successful and less successful)

5. FINDINGS FROM THE SEMI-STRUCTURED INTERVIEWS WITH HOUSEHOLDS

The observations from the household interviews are detailed below:

5.1 INFORMATION ON INVESTMENT AND RETURN

When the FGDs were conducted, the participants identified the relatively successful and less successful households. During the SSIs with those households, households were not able to accurately recall how much they had invested in the farms and their returns, and as such the data should be treated with some caution. This was particularly the case with the female headed farmers. Two male headed farmers were able to give relatively accurate accounts of their investment and return amounts. The return was calculated on the basis of SSI data, and in many cases, didn't support the FGD participants' opinions about the successful and unsuccessful farmers. It was also observed that both successful and less successful male and female headed households sell whatever shrimp they can produce from the gher. SSIs revealed that self-consumption only happens in case of white fishes.

For paddy production, the production difference between the successful and less successful households in one cycle of paddy season is relatively low. For instance, while the successful farmer produced 6 *mounds* (1 *mound* equals to 37.4 kg) of paddy in the last production season of 2010, the unsuccessful farmer produced 3 *mounds*. During the SSIs, the unsuccessful farmers noted that their land is located on the river banks and that the tides

and saline river water make it difficult for them to make a stable production from the land. Through FGDs, the issue of land erosion was highlighted. The participants stated that the reason for low production is the small size of land due to severe land erosion. This was also considered to be another important cause of low production by the informant households. Only the successful farmers can sell the harvest while the unsuccessful farmers use the harvest for household consumption. When asked why they consume the production rather than selling, one farmer replied *"if we sell the rice then what will we eat?"*

In case of the successful and less successful male headed mixed farmer households (paddy and giant white shrimp) it was seen that due to salinity in the water and the ground, they were not able to get any return from the paddy cultivation in the 2010 production season. The khas land received by them was outside the embankment making it vulnerable to increased intrusion of saline water. However, there were less difference in the amount of net return in case of *Galda* production between the successful and less successful farmers.

5.2 DEPENDENCE ON EXTERNAL AGENTS

For shrimp production, most of the unsuccessful farmers depended on what their neighbours are doing, and in many cases these weren't undergoing high production generating practices like: using a less amount or no lime; releasing all fish fries at a time; overstocking with no supplementary food; or maintaining the water quality. These tendencies were also seen among successful female headed households. However, both successful and unsuccessful female headed households were found to not have a clear idea about the right amounts of inputs required to generate high productivity. They depend on their relatives to even purchase inputs from the market. When asked about the amounts procured by their relatives, some households commented they knew about the amounts as they gave money for it, while others were unaware of the amounts.

Moreover, it was seen that both successful and unsuccessful male and female headed households try to emulate what larger farmers are doing. However, crucially, the practices which produce good results in larger sized farms bring in low production in smaller farms. For instance, both the successful and unsuccessful female headed fish farmers buy the post larvaes from a trader who lives nearby. The trader himself is a large farmer having almost 20 bighas of land. This trader says that most of his neighbours get the PL from him as they can get them on credit. He also says that as he makes relatively less profit than the other traders by selling PLs on credit, most people come to him. Though the trader knows that fish feed needs to be given regularly, he doesn't practice this and says that others in the area do the same.

The dependency trend for the paddy farmers is somewhat different than the shrimp farmers. It was observed that both shrimp and paddy cultivating beneficiaries have been dependent on different agencies for their production. For paddy cultivation, the successful male headed farmers are totally dependent on union ward members for water supply to their lands. The member uses his land most of the year for shrimp cultivation. The farmer can only use it for paddy cultivation for 3 to 4 months during the rainy season. One farmer stated *"If I had full control of the water supply in my land, I would have done the shrimp production myself along with the paddy"*.

During the interview, the respondent household informed that the ward member has spent around 2 lakh Taka for constructing the embankment around their plot of land. Due to this, the household does not feel threatened by land erosion. On the other hand, the less successful paddy farmer was found to keep good relations with the persons who can give him the seed bed for producing saplings for transplanted *Aman*. He has to return the favour by helping the person cultivate the land for free or by giving him a portion of his produce from the land.

5.3 DIVERSIFIED INCOME

It is noted from the SSIs that both female and male headed households are involved in several income generating activities which has reduced the risk of production failure from the gher/land. Though they own the land, all the informant households have other assets to earn an extra income. Both paddy and shrimp production practiced by the informant households bring in seasonal income. It was observed that after receiving IGA support from the project, households have become involved in other small businesses or have increased the number of their livestock assets. This points to the benefits of combining land and asset transfer. Some of the comments made by the informant households provide evidence of this scenario:

> *"My daughter has a sewing machine at home. She stitches clothes with the cloth materials I received from the project. These stitched pieces of garments are sold at home."*
>
> - successful female headed shrimp farmer receiving clothing material as a second IGA

> *"I got 5000 taka selling the 5 mounds rice I produced from the land in 2010. We sold our son's cycle with 1000 taka and we borrowed 1000 taka more from a neighbour. With this 7000 taka, we bought a cow"*
>
> - successful paddy farmer receiving DCR[6] copy in 2010

> *"In 2008, I suffered severe losses as my shrimp production failed. I ran away from home and went to Kolkata and later on, to Dhaka to earn some money. I came back last year and received an IGA to produce bamboo made cages (known as Atol locally) along with support for shrimp production. Now the demand for atol is high and I get 150 to 200 taka selling one piece of atol."*
>
> - Comments made by an unsuccessful male shrimp farmer

5.4 MOBILITY AND CONSEQUENCES

It was observed that the female headed households prefer to buy the PL from neighbours whereas male headed households often go to the nearest wholesale market for these purposes. The female headed households also prefer selling the harvest in their homes to middlemen or *farias*[7] who then sell the produce to the big traders. Though the female

[6] DCR or Duplicate Carbon Copy is widely known as the document for one yearly khasland settlement deed.

[7] In a study titled "Network and Political Analysis of Shrimp Farming in Bangladesh" by Zahid Hasan Chowdhury, the author showed that in the value chain system of shrimp farming, most of the fry collectors in states of vulnerability, make direct cash sales from their catches to the middlemen or *faria* who subsequently sell to the fry sheds in the market. On the other hand,

headed households insisted that they are not cheated by the traders and they do get a reasonable price, it seems this may not be the case. Even the PL trader interviewed for the research commented that one would have to pay more if he or she buys the PLs in credit rather than in cash. He shared his own experiences:

> *"I would take 250 taka for PLs worth 200 taka if someone wants to take it on full credit, 225 taka in case of half credit and 210 taka in case of cash payment. On the other hand, when I buy the PLs in full credit, I get some discount and have to pay 225 taka. In this way, I make a profit of 25 taka."*

When asked whether most of his customers are female, he commented that he has both male and female customers and he supplies PL to almost everyone in his neighbourhood. When asked how the households sell their produce and whether the strategy they follow is profitable, respondents commented:

> *"If we take our produce to the "kata[8]" we have to pay 2 to 4 taka commission per 100 taka. There is not much of a difference in prices if we sell it near home or in the market."*

Even in areas close to markets, it was observed that households practice different strategies for buying PLs and selling their produce. These practices include: 1) buying PLs from known traders living in the vicinity and providing the facility to buy on credit; 2) selling the produce to another primary group member doing fish trading and; 3) selling the produce in the *katas*.

In case of mixed farmers producing both paddy and golda, it was noted that both the farmers take their produce to the wholesale market (known as arot in bengali) for selling. When asked if there's a difference between 'kata' and 'arot', respondents commented that in arots, there are relatively more traders than katas and the probability of getting a competitive price is more in arots as traders from different parts of the country come for trading.

ROLES OF HUSBANDS AND WIVES IN MALE-HEADED HOUSEHOLDS

In the case of male headed households, both husbands and wives were found to provide labour on the land. There was one case of the successful farmer where the wife possessed technical knowledge about the required amount of inputs or the ways of maintaining the *ghers*. In some of the cases, it was seen that the wives were unable to tell what their husbands had spent as input costs. The husbands made most of the investment and production decisions on the land. The less successful shrimp farmer's wife took training from the project, however the farmer doesn't seem to utilise her knowledge. When asked, he said that he didn't know how to release PLs and what dose of feed to give. Only in the case of successful male shrimp farmer did we find that the wife took production decisions when the husband was away. Both the successful paddy and shrimp growing male headed families depend on male heads for production related decisions. Though the women help, their role is limited to assisting their husbands.

When asked to give examples of how she contributed to the production from the land, the wife of a successful farmer commented:

---

shrimp farmers purchase fry both from the depots and middlemen. Buying from middlemen shrimp farmers saves time and travel costs, though the rate in latter case is always high.

[8] Local fish trading places or depots.

"We get water from the nearby canal. Two weeks back, when my husband was in Dhaka, I had to pump in additional water in the gher. But I saw that the canal water was not suitable for pumping in as other people were pumping out their virus affected water in the canal. I didn't want to take that water. I then rented a pump machine (50 taka per hour) and got the water from the boring wells."

5.6 "GAMBLING" ATTITUDE OF THE UNSUCCESSFUL FARMERS

Most of the unsuccessful farmers release more PL in the hope that they will at least be able to get the input cost (PL) in return. Their great fear is a virus attack or production loss. As a result, unsuccessful farmers tend on the whole were observed to "try their luck" and decide not to invest in feeding and caring. This was found even among successful female farmers:

"*It doesn't make any difference in production if I use fertiliser, medicines or fish feed. The virus keeps on happening and now I don't give anything.* "

In contrast, for the male successful farmer, the production and investment practices were methodical and systematic resulting in relatively higher production.

5.7 CONCEPT OF VIRUS

Among the respondent households who cultivate shrimp, the concept of 'virus' is vague, threatening and associated with fate. This is the case with both successful and unsuccessful female and male headed shrimp farmers. According to the project fisheries officers, shrimp can die due to low levels of oxygen, high levels of Ph, or high temperature of the pond water. These however are all known as "viruses". The attitudes of the informant households are illustrated by the following comments made by a successful male farmer:

"No one knows why virus attacks, it takes different forms in different farms, no one can do anything about it, though we give medicine but nothing happens, so what's the point of using any medicine for preventing the attack.....till today no farmer has been able to understand what virus is and how it can be prevented."

5.8 CREDIT

Most of the informant households have taken credit for purchasing PL, in addition to IGA assistance. Credit is taken from relatives and acquaintances. One less successful female headed household noted that it was difficult to get credit after Aila as people thought she wouldn't be able to return the loan. She wasn't able to cultivate shrimp for two years because of this. Regarding the need to access reliable credit, one successful female shrimp farmer commented that:

"As we are female, we need to borrow more money. Men can get income from outside."

A different picture was seen in the case of one female headed household who had also suffered severe losses during Aila. As she had adult sons, she was able to get credit after Aila for buying shrimp fries. When asked why people lent her the money she commented that

people thought her sons would be able to earn and return the money, and as such she was considered eligible during this post-disaster crisis period.

5.9 LEARNING NEW TECHNIQUES AND SKILLS FOR INCREASED PRODUCTION

It was observed that the female headed (successful and unsuccessful) shrimp farmers were not very keen to learn and apply high production generating skills and knowledge of shrimp production. Most reported to not remember what they had been taught during the orientation session arranged by the project. The techniques of releasing fish fries or providing fish feed, and the techniques of maintaining the pond, were also reported to be costly in the initial phases, which they could not afford. Project fisheries officers disagreed with these comments, and held that informant households needed to take advice and training more seriously to further their understanding and production.

Different practices were recorded in the cases of successful male farmers. The following practices were reported to lead to increased production:

1. Use of lime;

2. Purchasing good quality Post Larvae;

3. Taking care of the shrimp pond;

4. Wife's role in maintenance in the absence of husband.

In the case of paddy production, it was seen that both successful and less successful households do not use any fertiliser or pesticides on their land. The households believe that this is lowering their production. Importantly, this practice of not applying fertilisers or pesticides is not due to ignorance but two basic reasons:

1) Households cannot afford to spend money from their own funds for paddy cultivation. One wife commented:

> *"Last year my husband said that if we could use some fertiliser then it would have been better but we were not able to as we didn't have enough money for that"*. She further added, *"My husband understands well. The only thing is we cannot afford to spend money from our own to take care of the land"*.

2) Due to high tides and the absence of any embankments, the less successful households were not able to accrue any benefits from the application of fertiliser or pesticides as these are usually washed away by tide water.

According to the SEMPTI project's agricultural officer, the application of Urea and TSP at different phases of paddy production helps increase incomes. However, currently none of the households are practicing this.

5.10 TENURE INSECURITY

Both the successful and unsuccessful paddy farmers were found to feel insecure about their land but for different reasons. For example, for one successful farmer, land security depends on their relationships with union ward members. If a new member is elected, claims on land may also change. For one unsuccessful farmer, the security issue is related to land erosion as

his land is located outside the embankment. Both of them belong to minority communities and both think that they do not have the ability to protect their land. Both of these farmers have deeds for 50 decimal of land while they are cultivating much less.

For shrimp production, the interviews revealed that most of the households have been occupying the lands for more than 10 years and some of the households had been part of the struggle for land that took place in 1997.[9] Uttaran's Upazilla Bhumi committee members claimed that this struggle has strengthened tenure security of land in two regions of their Upazilla which were part of the regions under study.

However, for one study region, tenure security continues to be a significant problem. The following case illustrates this.

RETAINING THE LAND

One rich family of the area had taken possession of a large piece of land, while holding and using the name of a landless family to obtain the DCR for the land. The named household was promised that the land would be returned after 2 to 4 years but this never happened. In 2007, following cyclone Sidr, the household head filed a complaint with the army against the rich person residing on the land. The case was settled, with the rich family being asked to pay 15000 Taka as a lease amount to the family. In 2010, the rich family stopped paying the money. The household head, in association with SEMPTI project, other villagers, and local club members got the DCR of 69 decimal of land and they constructed embankments to surround the plot. The rich person is now given an application to the land office stating that the DCR of this piece of land should not be renewed in favour of the household head. The household head commented that he fears that the rich person will be successful in revoking his DCR. He also informs that he is afraid to make more investments in the land as the tenure security has still not been ensured.

5.11 LINKAGES WITH GOVERNMENT AGENCIES

Linkages with government agencies are few and far between. From the SSIs, one of the successful male headed 'paddy and shrimp farmers' had access to the Upazilla land office. He also helps others with the khas land registration process. In addition to his khas land, this farmer has taken the lease of two plots of land. Except for this one case, the informant households receiving khas land have no linkages with government institutions such as government banks or local administrative offices. When asked, they commented that they were not aware of any agriculture development or low interest rate based credit schemes of the government for marginal and small farmers. However, interviews with Union-based assistant agriculture extension officers revealed that in some areas, the government is providing agriculture based skill development training alongside demonstration plots to farmers. It was also noted that none of the informant households have the "Agricultural Input Assistance Cards" issued by the government for the betterment of marginal farmers.

[9] In 1997, the landless people of that area had to fight against government forces who wanted to evict them. A poor landless woman, Jayeda, died in the protest. Several court cases followed the incident and land category was changed to agricultural khasland from khas waterbody. The agricultural khas lands were given as permanent settlement to the beneficiary households. The Uttaran SEMPTI project facilitated the process of receiving the permanent settlement deed.

5.12 RELIGIOUS MINORITY VS. RELIGIOUS MAJORITY

Both the successful and less successful paddy farmers reported that they have to maintain a good relationship with the majority religious community of their area in order to protect their land access and use. Uttaran bhumi committee members, when asked about this issue, it was commented that it was not only a case of the Muslims dominating the Hindus, but in areas where the Hindus are majority, the Muslims are equally oppressed. Households belonging to religious minority communities therefore feel compelled to listen to the majority community regarding khas land use. Through the identification of khas land borders, minorities fear losing a portion of their land and of losing the advantages they are getting from influential people. One household commented:

> *"If we have any dispute with the local ward member then he might bring in new people in the area and help them occupy a portion of our land. This will reduce the size of land that we are entitled to."*

5.13 QUALITY OF LAND AND PRODUCTION

From the SSIs with informant households, it was observed that the location of land can have a substantial impact on the amount of produce made from the land. Examples of this include:

One less successful female farmer was not able to cultivate paddy in 2010 due to severe land erosion combined with others claiming a share of the plot allocated to her. Another paddy farmer commented that the location of her land doesn't provide a suitable context to apply fertiliser or other inputs for better production. She stated:

> *"If paddy production happens, it happens, if not then not."*

It was noted through the SSIs that because of the disadvantageous location, they are unable to cultivate rice varieties such as high yielding IRRI. Instead, they have to cultivate the only one local variety of paddy which can tolerate the high tides.

For the mixed farmers, it was observed that saline water intrusion had severely affected their paddy production. Households commented that they could have produced 30 to 35 mounds of rice if the incident could have been prevented. They commented that they are always in a vulnerable situation as they cannot protect their crops from saline water.

Disadvantageous locations of plots of land also cause low productivity for the shrimp farmers in terms of not getting fresh tidal waters or not being able to dry the ponds adequately. One unsuccessful shrimp farmer commented:

> *"My farm is located in such a place that I never get the fresh river water that flows through the canals during high tides. When I get the opportunity to pump in water from the canal, the water of the canal did not remain fresh. Rather, it was the pumped out water of the other farms. The quality of water is usually not good and it negatively affects my shrimp production."*

6. FINDINGS FROM THE FGDS WITH UTTARAN BHUMI COMMITTEE MEMBERS

6.1 THE SIZE OF THE LAND

Respondents of the one 'Uttaran Upazilla Bhumi Committee' reported that households receiving less than 10 decimal of khas land find it difficult to use for sustainable production because the size of the plot can only really be used for erecting houses. There is not enough space for any other agricultural activities with such small plots of land.

6.2 DEVELOPING THE KHAS LAND

Participants commented that some of the unsuccessful households received land that needed to be developed (raising the land or constructing embankments to prevent saline water intrusion) for generating a sustainable agricultural production from the land. They agreed that most of the khas land in the union is unsuitable for producing two or three crops a year.

6.3 TENURE OF LAND

The participants commented that receiving a one year temporary lease to khas land has created a sense of insecurity among some of the successful and unsuccessful households. It was felt that more investments and efforts for better production would have been made in the land had they received a permanent settlement. They also added that the local administration does not have the scope to monitor what households do with the land, including whether they retain the land or lease it out to local rich people. This also adds to the sense of insecurity among the households regarding retaining access to the land.

6.4 ADVANCED PRODUCTION TECHNOLOGY NEEDED FOR SOME OF THE CONTEXTS

Because of the environmental vulnerabilities in the south western coastal region, especially saline intrusion due to increased salinity of river water and abnormally high tides, it was reported that previous cultivation technologies are no longer suitable to sustain higher productivity of land. Participants suggested that "Agricultural Education" be provided to the farmers for yielding a higher return from the land.

6.5 GOVERNMENT SUPPORT

The participants reported that under different projects, government agricultural offices organise farmers groups and provide training for higher production. Some demonstration plots are also allocated to some of the farmers. Almost 80% of the farmers for these projects should come from the marginal and small farmer category; however, this is rarely followed during project beneficiary selection. The respondents commented that involving SEMPTI project beneficiaries in these projects would help them in to obtain a more sustainable income. None of the respondent households have ever taken part in these government initiated agriculture and farmer development programmes.

7. FINDINGS FROM THE SSI WITH UNO AND AC/LAND

7.1 LACK OF SUPPORT FROM GOVERNMENT FOR USE OF KHAS LAND

All three UNOs interviewed for this research study commented that the government does not have any support mechanisms to provide production support to farmers who receive khas land. They also commented that although the policy recognises the need to oversee how the khas lands are being used, the UNOs are not doing this. For example, the UNO of Ashashuni commented that *"If production related support is not given to poor households, they will voluntarily lease out their land to the rich people."* Nevertheless, the UNO of Dumuria did report that the Krishi bank provides crop loan facilities and that those having 16 decimals of khas land can apply for these loans.

7.2 DEPENDENCY ON RELIEF

One UNO remarked that it would be possible to yield a sustainable production from the land if people work hard on the land. He also reported a high level of dependence on relief among people in his area, which in his opinion, has led people to be unwilling to take initiatives to be self reliant and seek higher yields from agricultural production.

7.3 QUALITY AND TENURE SECURITY OF LAND

All three UNOs reported that the land they had transferred as khas land to the landless was not of a low quality. The UNO of *Batiaghata* and *Dumuria* commented that in their region, the permanent settlement process has been suspended due to a land category related problem. Most of the khas land in these two regions are '*Char bharati*' land[10] which can only be given for one year settlement.

8. FINDINGS FROM THE SSIS WITH PROJECT FISHERIES OFFICERS

The project fisheries officers highlighted the following practices of beneficiary households as limiting their production from the shrimp ghers.

8.1 INSUFFICIENT USE OF LIME (CALCIUM OXIDE)

Calcium Oxide plays the most important role in *gher* preparation. One decimal of land requires one kg of calcium oxide. If in the initial phase, calcium oxide is given in the accurate amount, then the caring costs for the entire production period are minimised. Project fisheries officers commented that the beneficiaries who do not use the required amount of Calcium Oxide have lower production outputs.

8.2 OVERSTOCKING

[10] Char Bharati khaslands are those lands which have been raised due to the filling of river beds through siltation. As these lands can change the flow of the river, the government has decided that these lands can only be leased out for one year.

For one *bigha* of land, the maximum PL to be released should be 3,300 pieces (with food) in four phases. Without food, it should be between 1,500 and 2,000 pieces. It has been found however that beneficiaries release 3,300 kg or more without adding any fish feed. According to the fisheries officers, this practice lessens production. Beneficiaries overstock without using any fish feed. The use of a regular amount of fish feed (for 6000 PL 33 kg of fish feed is required for one whole production season. 1 Kg of fish feed costs around 50 Taka) can increase the production by up to 30 to 40 kg.

8.3 INSUFFICIENT INFORMATION ON THE RELEASE OF PL AND THE TIME FOR HARVESTING

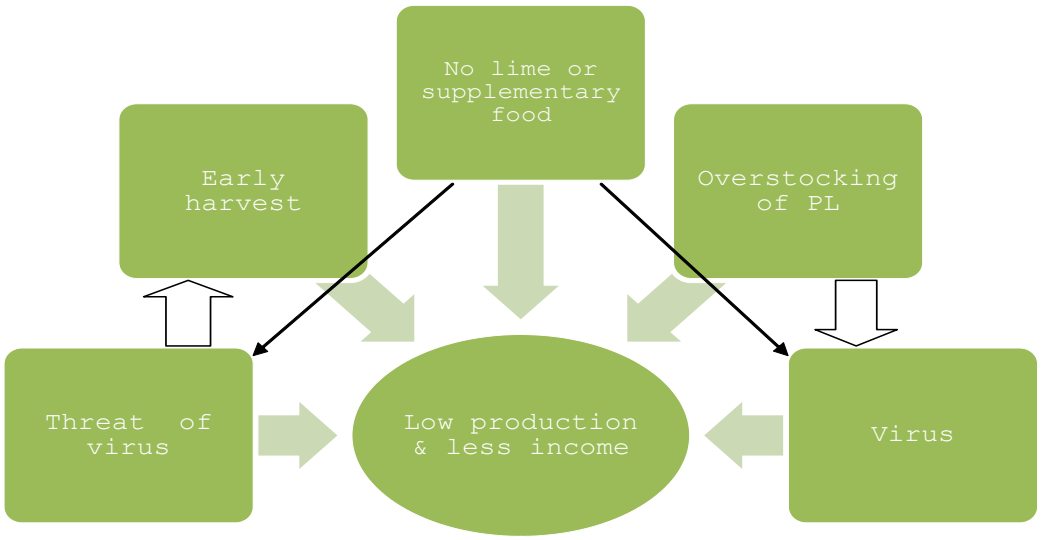
The release of PL and the harvesting of shrimps have regular time periods which the beneficiary households do not maintain. This hampers the growth of shrimps. After the release of the first PL stock, if one could wait between 70 to 75 days, the weight of the shrimp will increase as the mature shrimps will consume more food. Beneficiaries usually start catching the shrimps from the 60th day. This hampers growth of the shrimps and higher productivity.

8.4 EARLY HARVEST

As beneficiary households provide little care during the production time, they fear that if they allow the shrimp to grow, it might get infected by a virus. The fear of losing the fish makes them pursue an early harvest resulting in low production and low income.

Beneficiaries have therefore been found to follow certain low productive practices, the interrelations of which are illustrated in the following diagram:

FIGURE 3: SEQUENTIAL PROCESS OF LOW PRODUCTIVITY AND THE INTER-RELATIONSHIP OF THE COMPONENTS



The above diagram shows the practices of low production and their inter-relationship with various influencing components. Some of the practices are consequent effects of the others, while may also so be directly responsible for low production.

9. FINDINGS FROM SSIS WITH SEMPTI AGRICULTURE OFFICERS

The project agricultural officers highlighted the importance of controlling the water supply and quality control of the inputs for higher production of paddy. The main themes from the interviews are as follows:

9.1 CONTROL OF THE WATER SUPPLY AND HIGHER PADDY PRODUCTION

According to SEMPTI's agriculture officer, water level plays an important part in the paddy production process. This respondent reported that the water needs to be at certain level during different phases of production like transplanting, growing and harvesting periods. If the water level is not maintained, then it hampers higher production. Also, transplanting requires a supply of fresh water, but as the households do not have control over the water supply, and because the ward members won't pump in or pump out water for just one person's plot of land, maintaining the water level or adequate supply of fresh water at the right time becomes difficult. This lowers the production for the households.

9.2 GOOD QUALITY INPUTS FOR HIGHER PADDY PRODUCTION

The agricultural officer commented that inputs, such as seedlings, need to be of good quality for a higher production for transplanted Aman. After 15 to 20 days of germination, the seedlings need to be transplanted to the field from the seed beds. However, because beneficiary households buy the seedlings from outside, they cannot control the quality of the seedlings. This also delays the transplanting process. The informant households also cannot control the quality of seeds as they cannot prepare the seed beds due to a lack of space.

10. KEY ANALYSIS AND CONCLUSIONS

From the case studies of the three regions in south western Bangladesh, namely: production of tiger shrimp; production of paddy; and production of paddy with giant white shrimp, and from the themes generated from FGDs with Uttaran's Bhumi Committees and interviews with other key informants, three major arguments can be drawn:

1) Though khas land is considered an important source of livelihood for extremely poor people, generating and protecting the gains towards achieving sustainable livelihoods, for those with low quality, under-sized and land inundated during high tides, is difficult. This was seen with the cases of less successful paddy farmers whose low production can majorly be contributed to the location of their land. The experiences of the informant households have shown that the location of the land can make the households vulnerable to different environmental hazards which can drastically reduce households production from the land.

2) The strength and functionality of the extra-household relationships and networks that households build up are key to ensuring better productive use of the land. The more non-functional or 'exploitative' these relationships, the less successful the households become. These relationships need to be negotiated, and negotiations bring opportunities and costs.

The relationships between paddy farmer and ward union members, or the relationships between female headed households and PL traders or between female headed households and their relatives, between the farmers and the local elites, between the farmers and agriculture input (seed beds) providers, are examples of negotiations at different levels of production resulting in opportunities and costs. In all these cases, the households that could come up with the most favourable opportunities with the minimum cost have become the most successful. The reverse situations have created less productions and less income. In the case of the successful paddy farmers this could be seen more clearly. The ward member is ploughing his land with tractors and helping him with irrigation but in return the member has the right to use his land for nine months of a year. Though the farmer is now supposedly gaining as he doesn't have to pay for irrigation or ploughing, in the long run he is losing from not being able to cultivate his own land throughout the year. Here the farmer is gaining little but paying a very high cost.

3) Khas land is an important source of livelihood, however female headed households are not able to be as successful as their male counterparts. This is due to the fact that the networking with the outside world in relation to production and selling decisions is still dominated by men. Women therefore 'shy away' or are 'shied away' from these contacts. This impacts negatively on their ability to make better use of their assets. The female headed households depending on the relatives even for basic production decisions or the husbands not encouraging the wives to learn the skills to be able to make important production decisions or the female headed households willing to trade with local middlemen rather than venture out to the '*katas*' or '*arots*' can be examples of this scenario. Not understanding the importance of becoming skilled themselves could also be a reason for them not wanting to go to the market to purchase the inputs or sell their produce. Accurate information brings power to negotiate for more opportunities with minimum costs, and the female headed households along with the female members of the male headed households seemed to be lacking that. Different strategies work for different households, and the initiative, mobility and skills of women shapes their strategies, impacting the gains made. Most of the households interviewed for the study do not seem to have strategies involving women so they can maximise their gains.

10.1 IMPLICATIONS FOR THE PROJECT

The research highlights the following implications for the SEMPTI:

1. **The project should consider harmonising IGAs with the requirements of making land productive**, to maximise the potential to achieve a sustainable income from the land. Presently, the project is distributing IGAs in a way that means they can produce a daily income and short-term income. In this way, it has been noted that the project is not providing the full and adequate input support for fish/paddy cultivation, at least for one production cycle. It has been observed through the SSIs that the project is providing some portion of the input support and that the beneficiaries are not supplementing it. This is not bringing in the maximum production from the lands. Moreover, the IGA distribution period according to the project management framework doesn't always match the production seasons. The need for quick delivery of IGAs to fulfil the target excludes any such seasonal production needs.[11]

[11] The project has provides a package of 14000 taka worth of income generating support to each beneficiary household along with providing access to khas land. This support is given to the beneficiary households through providing life and non-life assets. When the beneficiary households are selected, they inform the project about their IGA needs and what skill

2. **Field level staff who are directly involved with assessing the needs of the households should be more thoroughly trained in IGAs** so that they can assist the households in deciding the most appropriate IGAs for them. For instance, one field officer, after learning that 1 bigha of land requires at least 33 kgs of Calcium Oxide in the preparation stage, explained that if she had previously known this, she would have encouraged households to use the proper amount of Calcium Oxide for fish farming.

3. The project should provide **more focus towards IGA trainings and include demonstration sessions.** This would encourage the households to change their existing low production generating practices.

4. Households are making investments in the khas lands, however, these investments are not undertaken at the correct time or in the most appropriate way. The project can **encourage households to get the most return from the investments they are making**. And this can only be done if their existing practices can be changed, for instance, by applying good practices such as applying the adequate amount of lime at the time of pond preparation, or providing a regular amount of fish feed, or releasing the fish fries at the right time and in the right amount.

10.2 PRACTICAL STEPS FOR SEMPTI TO PROVIDE INPUT PACKAGES WITH KHAS LAND TRANSFERS

From the interviews with various respondent groups who are the stakeholders of SEMPTI project, it became evident that improved coordination between khas land transfer and input packages is needed to maximise the production from the land. For this purpose, the following steps could be considered:

Step 1: Providing information on all IGA options to the households. While analysing the household demands, the field staff can discuss land productivity issues with the households along with different marketing options for the produce. If the household shows interest in utilising IGAs in the land, then field staff can discuss with his or her supervisor and take necessary actions.

Step 2: Harmonising IGA distribution periods with that of the production periods, may it be paddy or shrimp. In some cases, it was seen that the fish fries were given at the end of the production cycle. This did not bring in higher production. It was also observed that beneficiaries were not aware that they could ask for inputs like fertilisers and seedlings as IGAs.

Step 3: Training of field staff in shrimp, paddy and mixed cultivations so that they can provide technical assistance to the households.

Step 4: Intensive training of the beneficiaries based on field level demonstrations. Beneficiary households who have done relatively well can be asked to facilitate sessions as resource persons. This would ensure effective communication of messages among the households.

Step 5: Regular monitoring of households combined with continual encouragement to households to invest in high production generating practices.

---

development training they require to productively use the assets received from the project. According to the demands of the beneficiary households, assets are gradually distributed and one member of the beneficiary household (who will be managing the assets) is invited to attend the skill development training.

10.3 POLICY RECOMMENDATIONS

Through this study the following national and local level policy messages have been identified:

1. Extremely poor people with no homestead or agricultural land should have full access and control over the khas land allocated to them. They should be able to exercise full control of it to make it productive. Policies should include strict measures against land grabbers who pose threats to the tenure security of extremely poor households.

2. Khas land identification and distribution should be considered as a development imperative by the government. In this way, rural development policies and farmer development projects should include components for the development of khas land receiving households.

3. Though the 1997 policy has given Upazilla Nirbahi Officer the responsibility to oversee both how khas land is given to the landless and how it is being used, this is rarely carried out by the UNOs. The UNO's role as the Chair of the 'Upazilla Khas land Identification, Recovery and Settlement Committee' could be further strengthened in this regard.

11. REFERENCES

Azad, L (2011). *Bangladesher Krishi Khathamo: Ekti Porjalochona*. in Yusuf, Abu edited Bangladesher Krishi—Dhonotantrik na Adhashamontotantrik. Dhaka: Shamabesh.

Bangladesh Development Series Paper 26 (2008). "Poverty Assessment for Bangladesh: Creating Opportunities and Bridging the East-West Divide." Dhaka: The World Bank Office.

Barakat, A (et al.) (2001). *Political Economy of Khasland in Bangladesh.* Dhaka: ALRD.

Barakat, Abul (2005) "Bangladesher khas jomi o jolai doridro manusher hissah: Shomoshha o uttoroner upay songcranto prostabona." published in Land Rights and Poverty Alleviation, Dhaka: BLAST.

Department for International Development (DFID) (2007). *Land: Better Access and Secure Rights for Poor People.* UK: DFID.

Devine, J (1999). One Foot in Each Boat: The Macro Politics and Micro Sociology of NGOs in Bangladesh. UK:University of Bath. Ph.D Thesis.

Devine, J, Tania Notely and Taifur Rahman (2009). Extreme Poverty Policies of Donors in Bangladesh: An Overview. Dhaka: shiree.

IFAD (2009). *Bangladesh: Leasing of Ponds for Poor Fisher Group*. Rome: IFAD.

Januzi, F.T and Peach, J.T (1980). "Bangladesh: A strategy for Agrarian Reform, in Prosterman R.L, M.N. Temple and T.M Hanstad (eds.) *Agrarian Reform and Grassroots Development: Ten Case Studies*. USA: Lynne Rienner Publishers, Inc.

Mahbub Ullah (1996). *Land, Livelihood and Change in Rural Bangladesh*. Dhaka: UPL.

Government of Bangladesh, Ministry of Land (1997). *Policy on Khasland Identification, Recovery and Settlement.* Dhaka: Government of Bangladesh.

Nuruzzaman, M (2006). "Dynamics and Diversity of Shrimp Farming in Bangladesh: Technical Aspects." in Atiq A. Rahman edited *Shrimp Farming and Industry: Sustainability, Trade and Livelihood*. Dhaka: UPL.

Patton, M.Q (2002). *Qualitative Research and Evaluation Methods*. (3rd edition). London: Sage Publication.

Hye, H.A (1996). *Below the Line: Rural Poverty in Bangladesh*. Dhaka: UPL.

Saha, B.K (1997). *Agrarian Sturucture and Productivity in Bangladesh and West Bengal.* Dhaka: UPL.

Sen, B and Sharifa Begum (2003). "Drivers of Escape and Descent: Changing Household Fortunes in Rural Bangladesh." *World Development*. 31(3): 513-534.

Thorner, D and Alice Thorner (1962). *Land and Labour in India.* Delhi: Asia Publishing House.

Uttaran (2009). Operational Context Study on the Right to Khasland in Southwest Bangladesh.

Wood, G.D (1999). "From Farms to Services: Agricultural Reformation in Bangladesh." in Rogaly et al. edited Sonar Bangla *Agricultural Growth and Agrarian Change in West Bengal and Bangladesh*. Dhaka: UPL.

World Bank (2007). "Has Growth been Pro-Poorest in Bangladesh? Evidence between 2000 and 2005."

ANNEX 1

TABLE 1: HOUSEHOLD CHARACTERISTICS BASED ON CMS 1 DATA (2009) FOR SHRIMP REGION

Informant Households	CMS1 Data									
	Income (Monthly)		Expenditure(Monthly)		Household Asset		Indebtedness		Mobility	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
More Successful Households										
HH1	Less than 2000		1695		Cow 1, Goat 4 and		No			Once a month
HH2	Less than 2000		876			3 Poultry birds	No			Once a month
HH3	Less than 2000		1197		Goat 1,Poultry		No			Once a month(w
HH4		less than 2000		1558		0		No		Once a month
HH5		less than 2000		1055		8 poultry birds		No		Once a month
HH5		less than 2000		1714		0		No		Not at all
Less Successful Households										
HH6		less than 2000		1590		4 poultry bird		No		Once a month
HH7	CMS 1 data was not available									
HH8	less than 2000		1321		0		No			Once a month (wife)

TABLE 2: HOUSEHOLD CHARACTERISTICS BASED ON CMS 1 DATA (2009) FOR PADDY REGION

Informant Households	CMS 1 Data									
	Income		Expenditure		Household Asset		Indebtedness		Mobility	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
More Successful Households										
HH 1	Less than 2000		1209		4 Poultry Birds		No			Once a month
Less Successful Households										
HH2		Less than 2000		831		No		No		Once a month
HH3	Less than 2000		1281		No		No			Once a month

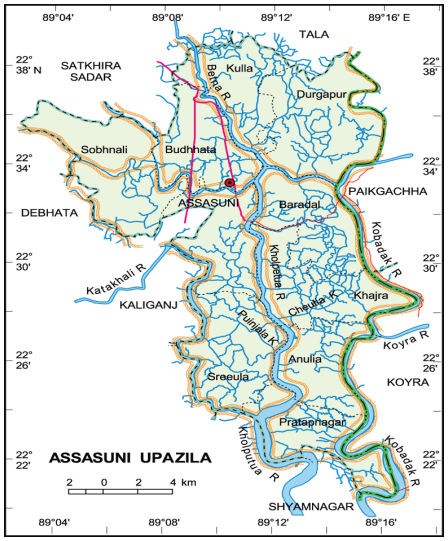
TABLE 3: HOUSEHOLD CHARACTERISTICS BASED ON CMS 1 DATA (2009) FOR PADDY AND GOLDA REGION

Informant Hosueholds	CMS 1 Data									
	Income		Expenditure (Monthly)		Household Asset		Indebtedness		Mobility	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
More Successful Households										
HH1	Less than 2000		2433		No		No			Once a month
Less Successful Household										
HH2	Less than 2000		No data		No		No			Not at all

ANNEX 2: DESCRIPTION OF LIVELIHOOD REGION STUDY AREAS

CASE STUDY 1- SHRIMP PRODUCTION

Debhata Upazilla is the smallest Upazila of Satkhira district in respect of both area and population. It was formally determined a thana in 1919 and later an Upazila in 1983. The Upazila occupies an area of 176.33 sq. km., and consists of 5 Unions, 55 mauzas and 122 villages. The average population of each Union, mauza and village are 23,789; 2,163 and 975 respectively (Uttaran, 2009). According to the Debhata Upazilla Uttaran bhumi committee (a group consisting of local teachers, civil society members and which acts as a pressure group), the eastern part of the Upazila is largely used for shrimp cultivation. Khas land recovery and distribution is slow here due to protracted red tape procedures. Most of the khas lands are illegally occupied by rich people. Data for this study were collected from Noapara union located in the shrimp cultivation region. 63 households in Dephukhali and Kathmahal area received 1 acre of khas land as permanent settlement which they then used for shrimp production. Informant households were located in Dephukhali and Kathmahal which were located 10 kilometers away from the nearest local market.



Ashashuni Upazilla is the second largest Upazila of Satkhira district in terms of area size. It was made a thana in 1896. The Upazila occupies an area of 402.36 sq. km. and consists of 11 Unions, 139 mauzas and 242 villages. The average population of each Union, mauza and village are 22,659; 1,793 and 1,030 respectively (Uttaran, 2009). This disaster-prone Upazila is often affected by tidal surges. Several unions were affected by Aila in 2009 damaging people's houses, livestock and agricultural productions. Thousands of people were separated from their homes and salinity of the area has increased manifold following Aila. Data for this study was collected from Sriula union in the Upazila. Most of the beneficiaries of this area use allocated khas land for shrimp production only. Informant households were located 4 kilometers away from the nearest market. In Sriula union, a total of 184 households received khas land from the SEMPTI project. Of these, 175 households had received a temporary settlement for one year and 9 households had received a permanent settlement.

Map Source: Banglapedia, 2008

4.4 CASE STUDY 2: PADDY PRODUCTION

Batiaghata Upazilla is the fifth largest Upazila of Khulna district in respect of area and was designated a thana in 1892 and an Upazila in 1983. The Upazila occupies an area of 248.32 sq. km. It consists of 7 unions, 127 mauzas and 169 villages. The average population of each union, mauza and village are 20,082; 1,107 and 832 respectively. The number of households enumerated in the census for the Upazila is 29,799 (Uttaran, 2009). Several rivers flowing through the upazilla including Bhadra, Shailmari, Zhapzhapia and Kazibacha. Data was collected from Baliadanga union which is located on the banks of Kazibacha river. Several beneficiary households have received khas land outside the embankment. These lands remain under water most of the year. Only transplanted Aman cultivation is possible in the rainy season (July to September). Households receiving land inside the embankment can also cultivate one crop a year. The DCR copy mentions that 50 decimals of khas land are allocated to beneficiary households.

The informant households were located only 2 kilometers away from the nearest market centre.
Map Source: Banglapedia, 2009

4.5 CASE STUDY 3: PADDY AND GIANT WHITE SHRIMP (GOLDA)

Dumuria Upazilla is second most populous Upazila of Khulna district, Dumuria and became a thana in 1918 and an Upazila in 1983. The Upazila occupies an area of 454.23 sq. km. It consists of 14 Unions, 187 mauzas and 237 villages. The average population of each Union, mauza and village are 19,990; 1,497 and 1,181 respectively (Uttaran 2009).

The northern part of Dhumuria upazila is three-crop-per year area with available facilities for irrigation.

The south eastern part is partially affected by saline intrusion and is a two-crop-per year area. The south western part is one-crop per year area with high saline intrusion. Khas land is available in almost all the unions of the Upazilla. The Government only provides one-year lease of the khas land. Data is collected from Rudhaghora union located in the three-crop-per year region. Most of the households cultivate both "Giant White Shrimp (*Golda*)" and paddy in the khas lands.

The informant households were located 14 kilometers away from the nearest market centre.

Map Source: Banglapedia

ANNEX 3: PRODUCTION EXPERIENCES OF HOUSEHOLDS

TABLE 4: PRODUCTION EXPERIENCE OF THE HOUSEHOLDS FOR SHRIMP (AMOUNTS IN TAKA)

Heads of Items	More Successful households												Less Successful Hosueholds					
	Household 1		Household 2		Household 3		Household 4		Household 5		Household 6		Household 7		Household 8		Household 9	
	PS 1-2011	PS2-2010	PS1-2010-11	PS2-2009-10	PS1-2010-11	PS2-2009-10	PS1-2011	PS2-2010	PS1-2010-11	PS2-2009-10	PS1-2011	PS2-2010	PS1-2010-11	PS2	PS1-2011	PS2-2010	PS1-2010-11	PS2-2008
PL white fishes	1500						750	750	800			1500	1200				1300	6000
Poat larvae white giant shrimp					320													4500
Post Larvae shrimp (tiger)	2884	20897	7800		4000	3100	4800	4341	3410	9800	4050	4309	4800		3280	4380	3700	5700
-Calcium Oxide	420	1340	116				1200	1050	72	84	600	320	111		195	120	370	48
-Cow dung	457	480	210				300		120	210	400		200		80	160	500	
-Uria		240	120						36	72	60		272		20	12		300
-TSP		800	253						48	184	500		120		20	20	290	
-Oil Cake	220	800									125							
-Rice husk	660	115							70							60		
Virus solution/medicine																		455
-Fish feed	600	160	1062			930				884		3000	620					
-Pump	500	6700					2000	2000							800			
cage(atol)									100				600				2000	1200
Fishing gear and net		500	1280							2210		500	1150			500	700	
Packaging																	150	150
-Labour	8800	3500	360					1000	240	500	2000		600		100	100	100	500
Own labour									140			2700	210		210	210	1000	1000
Transport										150								
Total Input Cost	16041	35532	11201			4030	9050	9141	5036	14094	7735	12329	9883	0	4705	5562	10110	19853
Income from selling of produce		110000	21201		4800			15000		3974		40280	13000			18570		35000
Value of self consumed produce		3000						400	200			300	300			200		300
Net return	can be calculated at the end of season	77468	10000	information not available	2400	-4030	can be calculated at the end of season	6259	can be calculated at the end of season	-10120	can be calculated at the end of season	28251	3417	0	can be calculated at the end of season	13208	can be calculated at the end of season	15447

TABLE 5: PRODUCTION EXPERIENCE OF HOUSEHOLDS FOR PADDY

Heads of Items	More Successful Households		Less Successful households			
	Household 1		Household 2		Household 3	
	Production Season 1-2010	Production Season 2-2009	Production Season 1-2010	Production Season 2-2009	Production Season 1-2010	Production Season 2-2009
Cost of preparing the seed bed	0	0	0	0	Was not able to cultivate due to severe land erosion	0
Seed/seedlings	300	300	500	600		500
-Cow dung	0	0	0	0		0
-Uria	0	0	0	0		0
-TSP	0	0	0	0		0
Pesticides	10	0	0	0		0
irrigation	0	0	0	0		0
Own labour	200	200	200	200		100
Ploughing	0	0	0	0		400
Total Input Cost	510	500	700	800		1000
Income from selling of produce	5250	2000				0
Value of self consumed produce			2100	2100		1200
Net return	4740	1500	1400	1300		200

TABLE 6: PRODUCTION EXPERIENCE OF HOUSEHOLDS FOR GOLDA AND PADDY REGION(AMOUNT IN TAKA)

Shrimp(Golda)					**Paddy**				
Heads of Items	**More Successful**		**less successful**		**Heads of Items**	**More Successful**		**Less Successful**	
	Household 1		**Household 2**			**Household1**		**Household2**	
	PS1-2010-11	**PS2-2009-10**	**PS1-2010-11**	**PS2-2009-10**		**PS1-2011**	**PS2-2010**	**PS1-2011**	**PS2-2010**
Cost for leasing in land		2500		2500	Cost of Leasing in Land	production yet to be started	2500	production yet to be started	
-Shrimp	6400	7000	3200	8380	Cost of preparing the seed bed				
-Calcium Oxide					Seed		600		4633
-Cow dung	750	700	450	6500	-Cow dung				400
-Uria		200		200	-Urea		1200		
-TSP	1150	1000	500	400	TSP, Zink		1700		1230
-Oil Cake	1300	1100	900	550	Pesticides		500		480
-Rice husk	600	8000			irrigation		2500		2500
Transport	400				Ploughing/mulching				
-Fish feed	2000	8000	250		Transport				
-Pump	2200	3000	1250	1100	Labour		4000		2000
-Labour	700	25000	1500	1700	Own labour				2000
White Fishes					Total Investment/input cost		13000		13243
Own labour	600		400	1000	Total Income from selling of produce		2100		
Total Investment/Input Cost	16100	56500	8450	22330	Value of self consumed produce		1200		
Total Income from selling of produce		75000		33000	Net return		No return as the harvest was low due to salinity		No return as the harvest was low due to salinity
Value of self consumed produce		5000		3000					
Net Return	can be calculated at the end of season	23500	can be calculated at the end of season	30000					

shiree

www.shiree.org

House 5, Road 10, Baridhara, Dhaka-1212, Bangladesh
October 2011