

**INTERVENTION OF CHAR DEVELOPMENT AND SETTLEMENT
PROJECT: DOES IT MAKE A DIFFERENCE IN PEOPLE'S
LIVELIHOOD AT BOYER CHAR IN BANGLADESH.**

MD SHAKIL MAHAMUD

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**Master in Public Policy and Governance Program
Department of General and Continuing Education
North South University, Bangladesh**

Dedicated to -
The vulnerable, poor people of Char areas of Bangladesh

ABSTRACT

Bangladesh, formed from deltaic land, has 580 km coast line with significant number of temporary and permanent coastal islands and *chars*. *Chars*, low-lying regions of land mass within water bodies, typically just above the water level created by sedimentation from various rivers meandering through the country and land accretion, are the abode of around six million people of heterogeneous admixture.

All of those *chars* and islands are not easily accessible and people are beset with lots of problems and sufferings. Despite appalling conditions, a large number of families, due to abject poverty and lack of alternatives, are often forced to relocate to such temporary lands battling precarious weather and adverse living conditions. As the families are often hard to reach through mainstream anti-poverty programmes, it drastically reduces opportunities to promote social and economic development within these communities. In consequence, to achieve the millennium development goals (MDGs) and accelerated economic growth and nationwide poverty reduction policies of the Government are hindered.

In an attempt to address these crucial issues, study is carried out to examine the livelihood of the people of Boyer *Char* in Noakhali District, located in South Eastern part of Bangladesh, under the intervention of Char Development and Settlement Project (CDSP) by the Government of Bangladesh. The study answers the research question whether and to what extent the Char Development and Settlement Project bring any changes to the livelihood of the people of Boyer *Char*. To answer the research question, whether and to what extent the change in livelihood of the people of Boyer *char* has taken place under the project intervention, two areas have been studied, one area is under the intervention of the project (Boyer *Char* as project intervention area) another is not under the project intervention (Noler *Char* as control area). Both have been chosen of the vicinity of similar characteristics and geographical location for the ease of addressing the problems and analytical comparison.

The study uses semi-structured questionnaire for household interview both for the project intervention and the control area as random sampling basis. Moreover, interview of government officials and experts opinion are also taken into cognizance for collecting primary information.

Both the primary data, qualitative and quantitative, are synthesized and analyzed and validated with the secondary data both from published and unpublished sources.

To answer the research question four (access to land, food security, income and assets and vulnerability) variables are identified and the analysis shows that access to land resources among the char dwellers has established legal ownership and entitlement of land and resolve the crisis of permanent settlement which bring change in livelihood in terms of access to land resources to some extent. Though less productive use of land resources, frequent victimization of natural calamities and limited scope of off farm income generating activities have created seasonal migration and higher dependency on traditional money lenders for accessing credit supply which bind them to fall into the vicious cycle of debt and poverty.

In absence of technical support and inability of non government organizations to reach the poor people, the food security, and income and assets generation level of the project intervention area have not brought significant change compared to their counterparts. Though the availability and use of potable water supply system has increased but in case of health and environmental issues, preventing disease and combating climatic hazards both the areas are more or less vulnerable.

Key words: *Coastal Islands, Char, Livelihood, Settlement, CDSP, Food Security, Vulnerable*

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ACRONYMS

BRAC	Bangladesh Rural Advancement Committee
BWDB	Bangladesh Water Development Board
CDSP	Char Development and Settlement Project
DAE	Directorate of Agriculture Extension
DFID	Department for International Development
DPHE	Department of Public Health and Engineering
EDP	Estuary Development Program
FD	Forest Department
FGD	Focus Group Discussion
ICZM	Integrated Coastal Zone Management
ISPAN	Irrigation Support project for Asia & Near East
IWRM	Integrated Water Resources Management
LGED	Local Government and Engineering Department
LRP	Land Reclamation Project
MDGs	Millennium Development Goals
MES	Meghna Estuary Study
MoL	Ministry of Land
MoWR	Ministry of Water Resources
NGOs	Non Governmental Organizations
SPSS	Statistical Package for the Social Science
TK	Taka
UNO	Upazila Nirbahi Officer
UP	Union Parishad

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1.1. Background of the Research:

The char¹ areas at coastal zone of Bangladesh are often perceived as a zone of multiple vulnerabilities. But these have much potentials and opportunities. Moreover, the areas contain several important and critical ecosystems (Wilde, 2000:2-3). By harnessing and exploiting these opportunities can make a substantial contribution to achieve the national goals of accelerated poverty reduction and economic growth. The need for an area specific program in coastal Bangladesh was recognized in a number of earlier initiatives and the policies and programs of different government agencies.

In 1978, the Govt. of Bangladesh had taken up Land Reclamation Project (LRP) under the Cooperation of government of the Netherlands. Initially the aim of the project was to address the problems of floods, erosion and accretion of the coastal areas and to find out suitable remedy to combat the problems in order to reclaim land and to develop the *chars*. Afterwards emphasis was given more to the development of the new land rather than to the accretion of land. By the end of LRP, in 1991, both the Government of Bangladesh and the Netherlands, in recognition of the two distinct approaches decided to continue the LRP project under two separate projects namely: *Char* Development and Settlement Project (CDSP, a land based project); and Estuary Development Project (EDP, a Water based project)(documented from the website of CDSP).

After initiating the *char* development and settlement project in newly accreted land in coastal areas, incorporating different Government Ministry with their executing agencies i.e. Bangladesh Water Development Board (BWDB) under the Ministry of Water Resources, Ministry of land, Local Govt. and Engineering (LGED), Department of Public Health and Engineering (DPHE) under the Ministry of local Govt. and Cooperatives, Department of Forest (DAF) under the Ministry of forestry and environment, Department of Agricultural

²*Char* a tract of land, surrounded by the water of an ocean, sea, lake, or stream; it usually means any accretion in a river course or estuary (Chowdhury E H, 1988).

Extension (DAE) under the Ministry of Agriculture and national level and local level non govt. organizations (NGOs). People from nearby locations affected by river erosion or beset with many other problems settled in newly accreted land.

The life of the people of those areas is much more harsh and full of uncertainties totally different from that of main land. Basically, the poor people of the bottom stratum of the society, having no capital² and little access to resources are the inhabitants of those *char* areas. Interventions both form of physical and livelihood supporting by the Government and other organizations are very meager than what is required at the minimum level. Normally it requires significant amount of time to stabilize newly accreted land having significant geographical and geo-morphological characteristics (Haque, 1989: 15).

With the application of some physical intervention using technology and sprinkling some of the life supporting elements may be an option to settle earlier to the target group of people in those areas, though it requires much attention and intervention to achieve sustainable livelihood and wellbeing of life for the poor people. Therefore, it is imperative and very pertinent to study and analysis the livelihood of the people of *char* area under *char* development and settlement intervention. The proposed study area *Boyer Char*³ is a coastal island located in between Hatiya Upazilla⁴ of Noakhali and Ramgati Upazilla of Laxmipur District. By this study, the researcher would try to analyze the livelihood in terms of some pre identified variables in accordance with the later discussed analytical frame work for the people of that *char* in the South eastern coastal part of Bangladesh.

1.2. Statement of the Problem:

Bangladesh occupies the greater part of what is popularly known as the Bengal Delta formed by the three rivers the Padma, the Meghna and the Jamuna and is subject to recurrent tropical cyclones and tidal surges. The region is exposed to and repeatedly affected by a particular type of hazard-floods with concomitant riverbank erosion due to shifting of river channels. The major rivers of Bangladesh do not flow in the same course for two successive years (Ahmad,1956: 389). This statement perhaps seeks to focus the compulsions which shape the

² All forms of livelihood assets.

³ The reclaimed area of *Boyer Char* is around 6600 ha.

⁴ A local administrative unit which is under the control of district administration.

human-nature interaction. The large land areas adjacent to the principal rivers are therefore subject to active fluvial action in all the season of the year. The rivers not only erode land causing settlements to be constantly on the move, they also throw up new lands through accretion for new settlements. These newly formed lands, called Char or diara in Bengali, are inhabited by some of the most ill fated, ill treated people in the country (Haque, 1989: 16).

In Bangladesh it is tentatively measured that around six million people live in *chars* among them a significant number of inhabitants are settled in South Eastern coastal *char* areas. Due to the natural hydro-morphological dynamics of rivers and human intervention, formation of new land is a continuous process. With the progression of this process, settlement of poor people in this land is also propagates on rapid pace. With the increase in number of settler in *chars*, problems are getting in the worst shape. The voice of the poor people of the farthest *char* at the coastal belt of South Eastern part is hardly heard from the ivory castle of the policy framer. Frequent shift and relocation, landlessness, acute poverty, epidemic diseases, lawlessness—above all things are become more aggravated by the whims of merciless natural calamities. All these factors affect the livelihood and wellbeing of the life of people of *char* area.

1.3. Illustration of the Problem:

The area which is under the coverage of this study is one of the remotest *char* areas in the South Eastern part of Bangladesh is very near to the Bay of Bengal. Due to its funnel shape and adjacent location to the confluence of Bay of Bengal and Meghna River, the study area is highly tidal surge prone and due to frequent event of depression into the Bay of Bengal makes the area first target of high magnitude cyclone attack. Besides these, erratic behavior of river during ebb and tide with the influence of moon and sun on surface water cause huge amount of saline intrusion in cultivable land and damage homestead and house stuff. Water levels in the rivers rise owing to the monsoon rainfall within the country as well as the catchment area in India, Nepal, Bhutan and China that cause all most all the low lying areas close to the three major river systems inundated. The low topology and high annual rainfall (over 2000 mm per year) much of which is concentrated in monsoon period result in the annual inundation of about one third of the country. In normal a year, one tenth of the total land surface is severely hit by flood (Zaman,1988:4); at least one half of Bangladesh is subject to some inundation and about 2,400 square kilometers are annually experience major

erosion (Islam & Islam,1985:19). However, areas subject to flooding every year are not always the same. Currey (1979) identified 283 localities ; 38 were in Jamuna flood-plain area, the Padma caused erosion in 30 places; the Meghna at 24 places, the Teesta at 8 places and rest other created by other minor rivers in different places. Every year hundreds of thousands of people in the country find themselves bereft of their homes and agricultural lands because of this harsh phenomenon of massive annual land erosion. All these displace become destitute and their lot is reduced to simply swelling the country's already very large floating population. Moreover, shrimp cultivation by the powerful local elite in the vicinity, violating rules; worsen the life of the poor farmer of the area. Difficult means of transportation system hinder the way of growth in business and trades in *char* area. As a result there is little scope of cash flow and resource mobilization which stop the path of employment opportunities and income generation which cause devaluation of labor market with poor wage and competition reduce productivity.

The asset capital of the poor are reduced with the wide spread of epidemic diseases. Illiteracy, superstition, lack of technical skill reduces the human asset capital. Different caste, group, class deters the people make cohesion or bondage is responsible for poor social capital.

The researcher is confined in this study to analyze some of the factors which influence the livelihood of the people of Boyer *char* due to the intervention by *char* development and settlement project.

1.4. Review of Literature:

In reviewing the literature, the researchers found varieties of definition of livelihood in terms of society, community and class of people discussed by the academics and researchers. There is a consensus that livelihood is about the ways and means of 'making a living'. The most widely accepted definition of livelihood stems from the work of Robert Chambers and Gordon Conway: 'a livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living' (Carney, 1998: 2). Ellis (2000) suggests a definition of livelihood as 'the activities, the assets, and the access that jointly determine the living gained by an individual or household'. Murrey (2002) who did research on livelihoods in Africa in the early late 90s approached livelihoods as always more than just a matter of finding or making shelter, transacting money, and preparing food to put on the

table or exchange in the market place. It is equally a matter of the ownership and circulation of information, the management of social relationships, the affirmation of personal significance and group identity and the inter relation of each of these tasks to the other. All these productive tasks together constitute a livelihood. For an anthropologist such as Murrey livelihood is an umbrella concept, which suggests that social life is layered and that these layers overlap (both in the way people talk about them and the way they should be analyzed). This is an important analytical feature of the notion of livelihoods.

One feature that these definitions and interpretations share in common is that they eloquently underline the generally accepted idea that 'livelihood' deals with people, their resources and what they do with these. Livelihoods essentially revolve around resources (such as land, crops, seed, labor, knowledge, cattle, money, social relationships, and so on), but these resources cannot be disconnected from the issues and problems of access and changing political, economic and socio-cultural circumstances. Livelihoods are also about creating and embracing new opportunities. While gaining a livelihood, or attempting to do so, people may, at the same time, have to cope with risks and uncertainties, such as erratic rainfall, diminishing resources, pressure on the land, changing life cycles and kinship networks, epidemics, markets, increasing food prices, inflation, and national and international competition. These uncertainties, together with new emerging opportunities, influence how material and social resources are managed and used, and on the choices people make (Scoones, 1998:11).

In Bangladesh the study on char land is mostly done by the academicians and professionals focused mainly on human livelihood and socio-cultural perspective. In this lime the first one was taken by Adnan (1976) on the dynamics of power in a remote village in Barisal region which was a *char land* area. Currey's (1979) worked which documented in Rangpur region. The main objective of the study was to examine survival strategies during the period of food shortage. Ali (1980) had done his work focusing on the evolution of the laws that operate in the *Char land*. Another anthropological study was done by Zaman who attempted to examine the nature and causes of the conflicts that characteristics the *char lands* with special reference to local politics. Zaman's study argued that the response to natural hazards varied in accordance with the background of the family which dictates the nature of response to the hazards. The major study was done by Baqee (1998) naming the Char land as the land *Allah Janne* (God Knows). In his study the author characterize the uncertainties of the lives of the

inhabitants of *char lands* in Bangladesh. The study describes the survival strategies of the *char land* people in the face of both of natural and social crisis using case studies. In his study the major focus was on the peopling process by using a framework. The author also pointed out the role of power elite in the settlement process. He author shows the belief of people where the sufferings are divinely oriented. Accordingly to study findings he shows a belief system over the people of *char land*. From the article by Ann and Hobley, (2003), and citing Aminuzzaman, the author found that the deep structural barriers preventing the exercise of voice by the extreme poor at char areas of Northern part of Bangladesh. Another research by Haque and Mohammad (2006) in char livelihood program under five district of Northern part of Bangladesh in, they found that a significant number of char dweller (27percent) were dissatisfied by the intervention of the char livelihood program because the livestock and the poultry supplied were died and that also damaged their existing own stock of livestock and poultry. They found and identified that alien variety did not survive at the extreme harsh environment of the char area.

Another research by Rahman (2007), for the Nodi o Jibon Policy Paper, the author showed that the scenario of poverty status varied far more than division than district than char areas where the study was carried out on 14 chars of Jamuna basin in Northern part of the country. Besides these, internal project study report of CDSP by the respective project evaluation and monitoring authorities were reviewed. Significant number of people (78 percent) is found below the poverty line average per capita annual income was much lower among *char* dwellers compared to national level i.e. BDT 14,955, Barua, 2007 and BBS 2007) and clear disparity between the main land and char land (Poverty rate is one and half times higher in *char* land compared to main land, Barua, 2007) was observed.

For analyzing the livelihood of the people of Boyer *char* the researcher studied vulnerability theory (Blaikie et al,1994), basically, this theory is based on human vulnerability with exposure to hazards, and sustainable frame work for livelihood developed by Department for International Development (DFID) both of them are discussed in the following chapters.

1.5. Significance of the Research:

Bangladesh has formed from deltaic land. The country is frequently affected with recurrent flood of different magnitude and intensity along with related natural calamities. As a result, river bank erosion and river eroded people are becoming at a large in number in the coastal

and riverine places. At the same time significant amount of land are accreted in natural process, this land are called *chars*, a tract of land surrounded by the waters of an ocean, sea, lake, or stream; it usually means, any accretion in a river course or estuary. In the dynamics of erosion and accretion in the rivers of Bangladesh, the sand bars emerging as islands within the river channel (island *chars*) or as attached land to the riverbanks (attached *chars*), often create new opportunities to establish settlements and pursue agricultural activities. A distinction between island *chars*, which are surrounded by water year-round and attached *chars*, which are connected to the mainland under normal flow and once vegetated such lands are commonly called *chars* in Bangladesh. (Islam and Islam, 1985:5)

Chars in Bangladesh can be considered a 'by-product' of the hydro-morphological dynamics of rivers. The rivers overflow an enormous amount of silt and part of this deposit in shallow waters off the coast. The sedimentation, at the long end, result in the formation of new land, coastal *char*. Consequently, these are low lying and the soils have a relatively high salinity with low organic substances which is responsible for low fertility compared to older land and there is dynamic physical environment of the coastal belt that changes over the seasons and years. When the *chars* are high enough to be free from frequent flooding by seawater, these are fit for the inhabitation of the settlers, come from different parts of main land. To resettle the settlers, victimized by the flood, river erosion or any other natural calamities in the *chars* may be one of the solutions to accommodate huge number of landless people of the bottom stratum of the society. But little attention has been paid on the livelihood of this group of people of *char* land in comparison of town protection due to river bank erosion.

Besides these, people from different places, classes, groups, religions come and settle in *chars*, powerlessness, lawlessness, vulnerability, isolation, physical weakness, unemployment, illiteracy, malnutrition, epidemic diseases and poverty interlock the *char* people. Only government is marginally present in these *chars* with a few development initiatives that are merely sufficient for survival of the people of *char*. This study would help to address the above issues and initiatives taken by the government and other agencies in South Eastern part of Bangladesh. Though several study already have been done regarding CLP in the Northern part of the country but those studies are different as the problem and its manifestation vary with regard to places and contexts.

As, the government does not have a separate *char* development strategy, the study would help to understand how much benefitted were the people at the expense of what amount of capital and human resources invested. Besides these, the study could help to investigate the pros and cons of the Capital City bound migration of river eroded people.

As the government intervention and development activities are very meager than sufficient, different multinational donor organizations, different government agencies and non government organizations are involved, the research would help to understand all these organizational interaction, their dynamics of synchronization and how the whole process of coordination were operated.

Moreover, this study would help to identify how different water and land management groups work for the people of *char*, *char* inhabitant women representation, their participation in project operation and maintenance and how their decisions are taken into account by other people of the *char* areas.

Last but not the least, today the climate change migrants⁵ are increasing in an alarming way, the study would find to identify the challenges and prospects of the millions of climate change migrants livelihood and assess their timely demands and put intervention where needed to address the issue effectively.

1.6. Scope of the Study:

Bangladesh has 580 km coast line with significant number of temporary and permanent coastal islands and *chars*. All of those *chars* and islands are not easily accessible and people are beset with lots of problems and sufferings. To study of those and to come out with meaningful research, require adequate time, logistic support from both central and local level administration with sufficient knowledge and experience rather taking a section that is represent able from most of the part, could lead to address the statement of the problem and research questions properly--- that is the scope of this research.

For this reason, the researcher has chosen one of the coastal islands i.e. Boyer *Char*, which is bisected by Hatiya River and its western part is under *char* development and settlement intervention but its eastern part is out of that intervention. Therefore the first part is taken as

⁵ Bangladesh is ranked number one high risk country in the world in climate change, WB, May, 2010 in Paris.

the area of study and the second part is taken as the controlled area for comparison. The main object of the Char Development and Settlement intervention was to improve the living condition and economic situation of the people of that char area which is congruent with this research objective and satisfy the research questions. Besides these, the study is aimed not to evaluate the project or the intervention taken by government of Bangladesh and other donor agencies --- rather it is an independent research based on the theoretical and analytical framework to study whether and to what extent the intervention bring any change of the livelihood of the people of Boyer Char. There are many factors and indicators that shape and dominate to change the livelihood of the poor but only a few of them are considered in this study for better understanding the research topic and simplicity in analyzing most important variables with pertinent indicators.

As a result, the study could not give any result of the social, cultural, political or organizational factors influencing changes in livelihood of the poor people but those influential factors are kept beyond the scope of this study to avoid complexity. Moreover, the geo-hydro morphological aspects of the *char* in different parts of Bangladesh possess some salient *characteristics*; this study could not satisfy the equation of changes in livelihood of other parts of *chars* (*chars* formed in Jamuna or Ganges or other river basins) in Bangladesh.

Above all, the study would be conducted only the *char* development and settlement project intervention, other interventions are kept away from the scope of the study.

1.7. Objective:

1.7.1. General objective:

The prime objective is to study the livelihood of the people of Boyer *char* under the intervention of Char development and settlement project.

1.7.2. Specific Objective:

To know the land allocation and distribution for the people of the Boyer *char* under *char* development and settlement project.

To study of the food crisis and economic condition of the people of Boyer *char*.

To study the factors that make the life of the people of Boyer *char* vulnerable against natural hazards and some fundamental issues (health, pure drinking water etc).

1.8. Research Questions:

Whether and to what extent *Char* Development and Settlement Project intervention bring any change to the livelihood of the people of Boyer *char*?

1.9. Limitations of the Study:

Components of livelihood are complex and related with the socio-politico-economic culture and institutional arrangements. All the aspects of change in livelihood of a particular area under any project intervention as such, quite impossible to determine and measure in a short period of time. The impact or change usually has taken place for a long period of time under the influence of any intervention. Collecting primary data from any remote and near to inaccessible char area in Bangladesh is not an easy task. Yet in order to make the study a success, many attempts were taken within the existing environment, which also suffered from some limitations.

- ❖ Time and resources constraints always pain the researchers. Limited time and resources have been allotted for the completion of this study also. Hence two Char lands, one is intervened Char area and another one is controlled Char area from one Upazila of South Eastern part of Bangladesh were chosen for convenience.
- ❖ The respondents in the study were asked to recall those impacts from their back up mind. As a result, there might be some deviation from the actual incident. It is also that the findings have been verified through secondary data.
- ❖ Small sample size may be a concern. However, samples of different cross-sections of community people along with local political leader, land lord etc. were studied. Though efforts were there to ensure a modest representation of target groups but the sample size might be more than that.
- ❖ Access to women has always been difficult in Bangladesh. Collecting data from the women, vast majority of which is uneducated, proved to be very difficult for the researcher. Many denied to give any interview and those who were not reluctant were found hesitant in their responses.

1.10. Outline of the Study:

The thesis is composed of six chapters, references and appendix. **The first chapter** deals with the background of the research, its objectives and significance. It also deals with the limitations to carry out the study.

The second chapter describes the char areas of South Eastern part in Bangladesh, history of char development project, objectives, description of the project and brief description of the study area.

The third chapter explicates the theories on which the study is based on and the analytical framework on which the dependent and independent variables have identifies and correlates theories models and analytical frame with. It also has discussed explicitly the methodology of the research.

The fourth chapter depicts the findings in respect of livelihood of the people of study area, Boyer Char, and control area, Noler Char, in quantitative and qualitative format using the designated questionnaire.

The fifth chapter is the nucleus of the report, which analyses the findings corresponding to the secondary findings. It also gives the researcher's own explanation about findings and analysis.

The sixth chapter gives the summary, conclusion and reflection of the research, on the basis of research questions and objectives with giving direction about future research.

The reference chapter presents the various references used within this thesis and the appendix chapter provides the questionnaire used for primary data in this study.

Char areas of Bangladesh and the Project perspective

2.1. Introduction:

This chapter presents an overview of the Char land of Bangladesh, its problems and relevance of this study. Besides these, emergence of Char development and settlement project, its objectives, project areas and salient features are described in a brief.

2.2. General Description of Char in Bangladesh:

Bangladesh is a country of *Deltaic* basin within flood plains of three great rivers. The Brahmaputra-Jamuna, the *Padma* and the *Meghna*, along with them, more than 250 rivers criss-cross the country (Islam, 1974: 7). All these rivers are contributing a great in Geomorphological system of Bangladesh and *char lands* can be considered as by product of the hydro morphological dynamics of the rivers.

Char lands are pieces of land resulting from the accretion for silt in river channels. The *char lands* of Bangladesh can be divided into five sub areas such as the *Jamuna*, the Ganges, the *Padma*, the upper *Meghna* and the lower *Meghna*. The old *Brahmaputra* and *Tista* also constitute some *char land* area again chars are areas of new land formed through the continual process of erosion and deposition in the major rivers and coastal areas. The whole of the char land is unstable and prone to annual flooding. *The* char dwellers are some of the poorest and most vulnerable people particularly those who live on the Island/attached river chars although people living on the unprotected riverbanks experience similar difficulties (Islam & Islam, 1985:9). According to ISPAN (Irrigation Support project for Asia & Near East, newsletter March, 2006) in their publication riverine chars in Bangladesh in 2004, Bangladesh has around 1722.89 Sq.km. of Char lands on her five major rivers which are equal to the district like Natore, Besides, there is lots of chars on minor rivers of the country. If the Char land can be distribute properly among the landless poor by taking those in Khas account, it can contribute significantly to the alleviation of poverty in the remotest areas of Bangladesh, But major causes to failure the distribution of Khas land among landless and other poor people are: Negative impacts of unjust land laws and land policies especially Alluvion-Diluvion laws, Problems regarding land survey and settlement, Negative impacts of

local administrative actions, Discrepancy in political will of the political parties (Barkat, Roy & Khan, 2007:13). Locally Char land is known as Char or Diara. The riverine *chars* in Bangladesh offer, on a continuous basis, significant areas of new land for settlement and cultivation. Living and working conditions on these newly emerged lands are harsh in terms of social and environmental context. The Chars are poorly connected to the mainland and are prone of acute erosion flooding which makes the inhabitants feel vulnerable (Rashid, H. 1981). Some Char lands are old, having much population living there; some are newly born chars where few families have started settling. Char communities suffer from seasonal flooding, erosion and the river that expected to continue widening substantially and shifting westwards in future (Ann and Hopley, 2003: 5). Individual and household mobility is high and temporary or permanent displacement is common.

People face structuring access to productive land and their other resources are also highly vulnerable. Communities are largely excluded from mainland services and do not represent a priority for mainland leased government administration (Islam, 1993:12). Thus, a lack of social services perpetuates poor health, educational status particularly for women and children. These multiple vulnerabilities (physical, social, economic, political.) are the underlying cause of chronic and persistent poverty on the chars. These communities are amongst the poorest most vulnerable; least served, and chronically marginalized which requires a different approach by the service providers like government, NGOs, etc. Because, all char dwellers have established livelihood strategies which enable them to survive in the chars environment but for the poorest, these strategies merely permit survival and do not enable them to accumulate sufficient assets to break the spiral of poverty. On the contrary, erosion is a largely predictable catastrophic livelihood shock through which households lose their lands, their shelter and other assets which they have in sufficient time of resources to move. The annual cycle of monsoon and drought is regarded by char dwellers as a “way of life” and they adopt a range of strategies which enable them to cope with seasonal variation (Islam, 1974:6).

A particular feature of the char’s environment is the preponderance of especially vulnerable groups who would be categorized as extreme poor who are in capable of engaging with or benefiting from production or employment based livelihood strengthening activities. People living at the edge of these places, have distinct way of lifestyle. As they live at the edge in perspective of environmental and social context the way of life there in Char is little different then to mainland people. The major characteristics of *Char land* people are their settlement

pattern, way of living, professional disturbance due to absence of principle occupation, coping strategies against the social and natural hazards, uneven mobility pattern due to river erosion (Zaman, 1991:3). In common way, the people are known as tough and daring as they face too many natural and social hazards. But the fact is most of the people live under the threat of natural hazards and also the threat of local power elite. The people settle there in case of gambling with their life and families. If they can ensure their settlement in spite of such hazards the landless people can become landowner (Adnan, 1976:5).

The livelihood pattern, settling story, social crisis and coping pattern of the Char land community can be a source of understanding of settling process and community formation. The present study on *Char land* Community has been undertaken with the consideration that this is the less attempted area by the conventional researchers because of its diversity as compared to other research areas in social sciences.

2.3. Over view of Char Development and Settlement Project (CDSP):

River erosion is a curse equally for landless and land owners living there while accretion of *char* (polder) is bliss for them. The *chars* are areas of new land formed through a continual process of erosion and deposition associated with the major rivers, which run through the country (Chowdhury, 1988:8). Excessive population pressure on main land compels people especially the homeless in Bangladesh to migrate into a new land like polder though these areas are marked by extreme vulnerability. The *Char* Development and Settlement Project (CDSP) is designed to reduce this vulnerability and assist the *char* dwellers. CDSP has been implemented in three different phases. Before getting into CDSP-III it is worthwhile to discuss a bit about the background and evolving of the project into present shape.

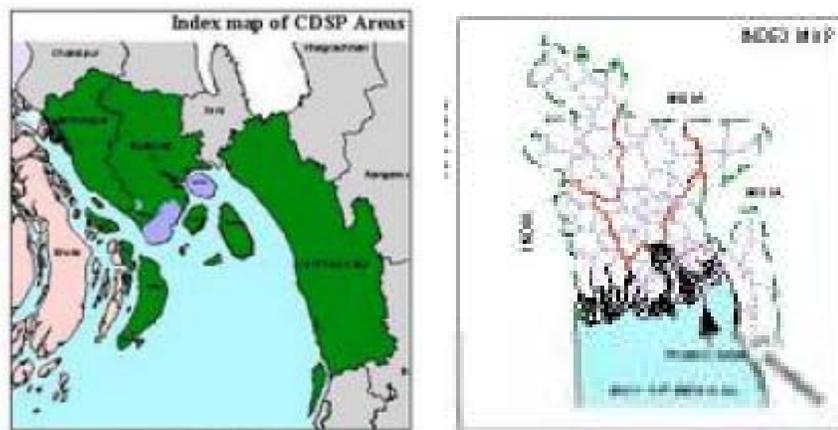
2.4. Historical Background of the Project:

The government sponsored interventions aimed at developing coastal *chars* started in the late 70s with the Land Reclamation Project (LRP). The experience of this project was applied in the first *Char* Development and Settlement Project (CDSP-I) that ran from 1994 to 1999. Both the government and the donors were interested to continue the project beyond interventions after embanking a *char*. As such, CDSP-II initiated in early 2000 aimed at supporting the unprotected lands. It was run up to 2005. The objective of CDSP-II was to improve the socioeconomic condition of the poorest in the coastal areas of southeastern Bangladesh. Following the Integrated Coastal Zone Management (ICZM) and Integrated

Water Resources Management (IWRM) approaches, CDSP-III was launched in 2005 for poverty alleviation and integration. This project site is located in Boyer *char*, which is an island between Hatiya Upazila of Noakhali and Ramgoti upazila of Laxmipur Districts.

Name of project	Location of project	Project duration	Source of fund	Implementing organization
LRP	CharBaggar Dona-I, Noakhali	Late 1970s	Bangladesh, The Netherlands	BWDB, MoL
CDSP-I	CharMajid,charBatirtek, charBaggar Dona-II, Noakhali	1994-1999	Bangladesh, The Netherlands	BWDB, MoL, LGED
CDSP-II	Chittagong, Feni, Noakhali	1999-2005	Bangladesh, The Netherlands, WFP	BWDB, MoL, LGED, DAE, DPHE, BRAC, The Netherlands
CDSP-III	Boyerchar, Noakhali	2005-2010	Bangladesh, The Netherlands, WFP	BWDB, MoL, LGED, DAE, DPHE, DoF, BRAC, The Netherlands

Table: 2.1. Project coverage from its inception to present stage.(source: CDSP, Website)



Map: 2.1.Index map of Char Development and Settlement Project areas.
(Source: CDSP website)

2.5. Objective of the Project:

The broad objective of the CDSP is poverty reduction through improvement in economic situation and living conditions of people in the targeted region, with special emphasis on the poorest segment of the population. Underlying this broad objective there are a number of specific objectives, which aim to provide the participants with (i) access to credit, (ii)

extension with regard to economic activities, (iii) access to safe water, health, and sanitation facilities, (iv) access to education and legal aid services, and (v) important lessons on disaster management. These programme objectives are sought through constructing embankment and cyclone shelters, ensuring appropriate environment for agriculture and non-agriculture opportunities, and providing awareness lessons and discussions regarding safe water, sanitation and so forth. From 1994 to 2010, CDSP has been implemented in three phases, starting successively in 1994, 2000, and 2005. The last of these three phases spanned from July 2005 to June, 2010.

Target group:

CDSP targets the poor people of coastal *char* areas who are- landless laborers, destitute women, small tenants/landowners, and very small landowners and fishermen. All households in any particular intervention area are covered by the programme, since only vulnerable individuals and families usually decide to come and reside in the *chars*. According to government regulations, each household is entitled to 1-1.5 acres of land, and the Ministry of Land ensures the execution of this regulation.

Target area:

Boyer Char, an island between *Hatiya Upazilla* of Noakhali and *Ramgoti Upazilla* of Laxmipur, was the most prominent target area of CDSP-III. In addition, the project also covered the CDSP-I and the CDSP-II areas (spread over the districts of Noakhali, Feni and Chittagong) of *Char Baggar Dona I and II*, *Char Majid*, *Char Bhatirtek*, South *Hatiya polder*, *Char Moradona*, Polder ⁶59/3B, *Char Gangchil- Torabali*, *Char Lakshmi*, Polder 59/3C, *Bamni catchment area* and *Muhuri accreted area*. CDSP-III also aimed to focus on new *chars* where development programmes can be undertaken in future.

2.6. Problem and Relevance of this study:

Due to the location on a Delta plain, Bangladesh is crossed over by several mighty rivers such as the Padma, the Meghna, the Jamuna, and their countless branches and tributaries on their way towards the Bay of Bengal. The monsoon typically overflows these rivers and carries substantial amount of silt, and deposits a huge part of that silt in the shallow water along the coastal belt, predominantly in the southeastern region. Ultimately, this

⁶ This is a German word that generally means an area of low-lying land, especially in the Netherlands, Germany, which has been reclaimed from a body of water and is protected by (barriers) dikes from the sea.

sedimentation leads to new land formation in the form of coastal *chars*. These *chars* are low-lying regions and the soil usually has relatively high salinity with low contents of other organic materials and mineral components (Brocklesby and Hobley, 2003:14-15). This particular type of soil composition in coordination with the location, results in low fertility level and extremely dynamic physical environment that faces frequent changes over the years and even throughout the seasons (Ali, 1980:296). According to the government rules, the Forest Department usually takes care of the newly emerged *chars* for a period of twenty years. This time is required for raising plantation and management of forests. The objectives of the Forest Department activities are to accelerate accretion, stabilize the land, and protect the mainland against storms and cyclones (CDSP Progress Report 2007:34). However, among the *chars*, the ones which are less likely to be flooded by sea-water are in most cases occupied by the settlers migrating from the main land before the end of these twenty years. Due to widespread landlessness and poverty in the country, this type of migration is quite common. Even after the migration taking place, various forms of social unrests take place in the *char* regions, particularly to take control of the lands (Zaman, 1988:16). The bio-physical condition and location of the *chars* make it quite easy to understand that human life on these geographical settings is neither convenient nor easy. Isolation from main land and associated attributes, lack of infrastructure, disaster prone nature, and powerlessness interlock the *char* dwellers into a downward spiral of poverty.

This state of deadlocked poverty has been seen to be quite persistent due to the lack of adequate institutional intervention (Zaman, 1989:19). Government sponsored interventions aimed at coastal *char* development started in late 1970s through the Land Reclamation Project. This project was jointly funded by the Government of Bangladesh and the Kingdom of the Netherlands. Under this project, *Char Baggar Dona-I* in Noakhali district was poldered, along with actions taken for settlement through provision of land titles and agricultural development. Understandably, there has been limited intervention by the government to promote development in these regions. In an attempt to address the myriad of issues in these areas, the Royal Netherlands Embassy and the Government of Bangladesh (specifically, the Ministry of Water Resources) initiated a *Char* Development and Settlement Project (CDSP) in the coastal areas of south-east Bangladesh in 1994. Under the initiative, third phase of the programme was implemented in *Boyer Char* in Noakhali district and other regions covered in the phase I and II (Barua, 2007:4). The programme aimed to improve the

livelihoods of the newly migrated dwellers in the areas. Besides these, different types of studies have been conducted, those are basically project evaluation report, based on the project evaluation and specific focus on project component and relating to extension, renewal of the project and above all donors, NGOs and government executing authority driven, and where as no independent research from the individual perspective for the purpose of research was rarely found. As a result, real scenario may not come out or chances of exaggeration may occur in presenting the socio economic condition of the people of remote char area. Besides these, inaccessible geographic location, remoteness and pervasive lawlessness hinder the way of through research. This study aimed to assess the change in living condition, due to the interventions, with specific focus on: (i) the effect on livelihood strategy such as means of income (ii) the effect on asset holding (natural, physical and financial), (iii) the effect on vulnerability in terms of food security, crisis conflict, etc., and (iv) the effect on land allocation and settlement to find out the answer of the research question to what extent the programme contributes in improving their livelihood. For this reason, the researcher has chosen one of the coastal islands i.e. Boyer *Char*, which is bisected by Hatiya River and its western part is under char development and settlement intervention but its eastern part is out of that intervention. Therefore the first part is taken as the area of study and the second part is taken as the controlled area for comparison. The main object of the Char Development and Settlement intervention was to improve the living condition and economic situation of the people of that char area which is congruent with this research objective and satisfy the research questions.

Besides these, the study is aimed not to evaluate the project or the intervention taken by government of Bangladesh and other donor agencies --- rather it is an independent research based on the theoretical and analytical framework to study whether and to what extent the intervention bring any change of the livelihood of the people of Boyer Char.

There are many factors and indicators that shape and dominate to change the livelihood of the poor but only a few of them are considered in this study for better understanding the research topic and simplicity in analyzing most important variables with pertinent indicators. As a result, the study could not give any result of the social, cultural, political or organizational factors influencing changes in livelihood of the poor people but those influential factors are kept beyond the scope of this study to avoid complexity. Moreover, the geo-hydro morphological aspects of the *char* in different parts of Bangladesh possess some salient

characteristics; this study could not satisfy the equation of changes in livelihood of other parts of *chars* (*chars* formed in Jamuna or Ganges or other river basins) in Bangladesh.

2.7. Conclusion:

From the above discussion it is revealed that so far lot of researches have already been done but that are based on the anthropology and socio-cultural aspects of the people of char land of North Eastern part of the country. A few of them are related to the project evaluation and monitoring perspectives respected to the concerned projects and programmes of those areas moreover, the contexts are different that tell the relevance of the study.

Theoretical and Analytical Framework and the Research Methodology

3.0. Introduction:

The central objective of this chapter is to develop a framework for analysis. This chapter has been divided into different parts. In the first part, important concepts have been discussed, major theories, models and framework have been examined and correlation among theories, models and framework have been depicted for the livelihood of the people of char areas. On the basis of theories, models and frameworks, a framework for analyzing the livelihood of the people of char areas have been developed. In fact, livelihood of the people of char area under the intervention is the fundamental issue that the research endeavors to address in this study. Finally, research methods have been devised to conduct the study.

3.1. Relevant Theories:

The Vulnerability Theories and models by Blaikie et al, (1994) and the Department for International Development (DFID) developed sustainable livelihood framework may be relevant to conceptualize the issue of livelihood of the people of *char* area.

3.2. Vulnerability Theory:

In this theory relationship between human actions and the effects of calamities and the socio-economic dimension of vulnerability was discussed in early 1980s. Later in the early 1990s two conceptual models were devised to understand vulnerability and to reduce its level they are:

- Pressure and Release models (Blaikie et al., 1994)
- Access models (Blaikie et al., 1994)

These two related models were developed as part of the detailed study of human vulnerability to natural hazards by Blaikie et al. (1994). The concept of vulnerability recently emerged as a powerful analytical tool for unfolding states of susceptibility to negative attributes like harm, powerlessness, and marginality emanating from both physical and social systems. Entitlement-based explanations of vulnerability focused almost exclusively on the well-being and social realms of institutions such as class, social hierarchy and gender as important variables. Vulnerability research aims to build on integral knowledge of environmental risks

and the associated human responses with focus on geographical and psychological perspectives in addition to the embedded social parameters of risks (Ellis, 1998). The human ecology traditions attempted to explain the reasons for which the poor, especially in the developing countries, are the most at risk of natural hazards (Helmore, Singh, & Haque, 2001).

3.2.1. Pressure and Release model (Blaikie et al. ,1994):

In the Pressure Release model, there are two sides, the processes generating vulnerability is in one side and the physical exposure to hazard is in another side. Increasing pressure can come from either or both the side but to release the pressure vulnerability has to be reduced. According to this model by Blaikie et al. (1994) generation of vulnerability is a progression of three main levels: root cause (limited access to power, structure, resources), dynamic pressure (lack of institution, skills, markets, soil or water quality) and unsafe conditions (low income level, geographic location) on the other hand exposure to hazards are floods, cyclone, land slide etc cause pressure of the livelihood of the people. The more pressure creates more risk and hazards for the livelihood of the vulnerable group of the people.

3.2.2. Access model (Blaikie et al.,1994):

In this model, livelihood strategies are considered key to understand people to cope with vulnerabilities. Access involves the ability of an individual, family, group, class or community to use resources to secure a livelihood. According to this model, the level of household's or individual's access to resources and livelihood opportunities is called its access profile. The access profile for the rich and the poor are different. Depending on the income earned and decisions may improve the access profile.

3.3. DFID's Livelihood Framework:

The DFID Livelihood approach is one of a number of conceptual frameworks which takes an approach to analysis of the livelihood of poor vulnerable people. In understanding the vulnerability context of the poor people and the organizational and institutional structure and process by which poor people draw upon assets of different types in order to implement a livelihood strategy. It defines five types of asset: human capital, social capital (the ability to draw on support through membership of social groups), natural capital, physical capital, and financial capital. According to Carney (2002) the livelihood approach has some normative ideals: it is people-centered, holistic, multi-level, flexible, responsive, participatory, and

empowering as it provides serious considerations to the needs and well-being of the poor; it is predicated on sustainability, and takes an enduring vision. It is the primary responsibility of the government to follow an appropriate political discourse for creating an enabling environment for the poor and guide its institutions towards the materialization of the livelihood concept (Chambers and Conway, 1992). The policies and regulations need to be directed in a pro-poor way that ensures the poorest communities are not discriminated against, but instead are socially prioritized when it comes to appropriating assets. SL, being a holistic approach, demands the exercise of cross-scale negotiation with a variety of stakeholders as fundamental to any intervention process (Scoones, 1998:19). There is the criticism that SL ignores long-term spatial dimensions, and hence, the construction of a livelihood has to be seen as an ongoing process in which the dynamic nature of the elements is captured over time and space (Ellis, 2000:10).

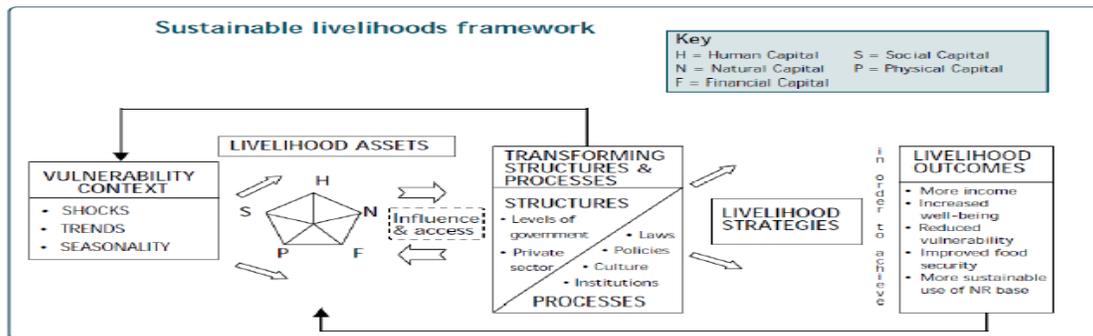


Fig.3.1. DFID SL Framework (Carney 1998)

Vulnerability Context: frames the external environment in which people exist. People’s livelihoods and the wider availability of assets are fundamentally affected by critical trends as well as by shocks and seasonality – over which they have limited or no control.

- **Shocks:** can destroy assets directly (in the case of floods, erosion, cyclone, tidal surge storms, civil conflict, disease etc.).

- **Trends:** may (or may not) be more benign, though they are more predictable. They have particularly important influence on rates of return (economic or otherwise) to chosen livelihood strategies.

- **Seasonal Shifts:** in prices, employment opportunities and food availability are one of the greatest and most enduring sources of hardship for poor people in coastal *char* areas of Bangladesh.

Livelihood Assets: The asset pentagon lies at the core of the livelihoods framework, ‘within’ the vulnerability context. The pentagon was developed to enable information about people’s assets

to be presented visually, thereby bringing to life important inter-relationships between the various assets. (DFID, 1991)

❖ **Human Capital:**

Represents the skills, knowledge, training, education, ability to labor and good health that together enable people to pursue different livelihood strategies and achieve their livelihood objectives.

❖ **Social Capital:**

In the context of the sustainable livelihoods framework it is taken to mean the social resources upon which people draw in pursuit of their livelihood objectives. These are developed through: Networks and connectedness, Membership of more formalized groups, Relationships of trust, reciprocity and exchanges.

❖ **Natural Capital:**

The term used for the natural resource stocks from which resource flows and services (e.g. nutrient cycling, erosion protection) useful for livelihoods are derived.

❖ **Physical Capital:**

Comprises the basic infrastructures and producer’s goods need to support livelihoods.

❖ **Financial Capital:**

Denote the financial resources that people use to achieve their livelihood objectives. It can contribute to consumption as well as production.

Relationships with other Framework components:

- ***Assets and the Vulnerability Context:*** assets are both destroyed and created as a result of the trends, shocks and seasonality of the *Vulnerability Context*.

- ***Assets and Transforming Structures and Processes:*** The institutions and policies of the *Transforming Structures and Processes* have a profound influence on access to assets.

Create assets – e.g. government policy to invest in basic infrastructure (physical capital) or technology generation (yielding human capital) or the existence of local institutions that reinforce social capital.

Determine access – e.g. ownership rights, laws, rules of institutions regulating access to common resources.

Influence rates of asset accumulation – e.g. policies that affect returns to different livelihood strategies, taxation, etc. However, this is not a simple one way relationship. Individuals and groups themselves influence *Transforming Structures and Processes*. Generally speaking the greater people’s asset endowment, the more influence they can exert. Hence one way to achieve empowerment may be to support people to build up their assets.

- **Assets and Livelihood Strategies:** Those with more assets tend to have a greater range of options and an ability to switch between multiple strategies to secure their livelihoods.

- **Assets and Livelihood Outcomes:** Poverty analyses have shown that people’s ability to escape from poverty is critically dependent upon their access to assets. Different assets are required to achieve different livelihood outcomes. For example, some people may consider a minimum level of social capital to be essential if they are to achieve a sense of well-being. Or in a remote rural area, people may feel they require a certain level of access to natural capital to provide security.

Transforming Structures and Processes:

Transforming Structures and Processes within the livelihoods framework are the institutions, organizations, policies and legislation that shape livelihoods.

- **Structures:** Structures in the framework are the hardware – the organizations, both private and public that set and implement policy and legislation, deliver services, purchase, trade and perform all manner of other functions that affect livelihoods.

Livelihood Strategies:

The livelihoods approach seeks to promote choice, opportunity and diversity. This is nowhere more apparent than in its treatment of livelihood strategies – the overarching term used to denote the range and combination of activities and choices that people make/undertake in order to achieve their livelihood goals (including productive activities, investment strategies, reproductive choices, etc.). Livelihood strategies vary at every level–within geographic areas, across sectors, within households and over time. This is not a question of people moving from one form of employment or ‘own account’ activity (farming, fishing) to another. Rather, it is a dynamic process in which they combine activities to meet their various needs at different times. A common manifestation of this at the household level is ‘straddling’ whereby different members of the household live and work in different places, temporarily (e.g. seasonal migration) or permanently. (DFID, 1991 & DFID, 1999-2000, Sustainable livelihood guidelines)

Livelihood Outcomes:

Livelihood outcomes are the achievements or outputs of Livelihood Strategies that may be more income, increased well-being, reduced vulnerability, and improved food security more sustainable use of the natural resource base (DFID, 1991 & DFID, 1999-2000, Sustainable livelihood guidelines).

3.4. Correlating theories, models and framework:

In the case of Pressure and Release model it is stated that various factors make vulnerable people fall victims of natural hazards and under pressure and it is to be released but how it can be reduced not explained.

Access model, a new thing is incorporated that is 'Accessibility' which is used to reduce the vulnerability but not mentioned about how to enabling or enhance capacity to release the pressure. Finally, on DFID's Livelihood Framework, it has come in a new form that is livelihood assets, ways are given out how to transform it through structure and process and adopting or coping with some means of strategies where poor people can reach an outcome to make a change of their livelihood.

Therefore, to analyze the livelihood of the people for the proposed area of research, this models and framework may be appropriate to reach a conclusion. Shelter is a key physical asset to attain in *char* areas. Often placed near in coast line may make life vulnerable to tidal surge, cyclone or other natural hazards. Besides these, living on the bank of embankment seasonal water logging, saline water intrusion, social unrest and poor housing materials and arrangements make life more susceptible to any shock.

Within a livelihood adapted to a particular coastal geography i.e. *char* area, an increase in intensity of the vulnerable group of people, climate extremes can cause severe shocks that set back households. The livelihood of the people of *char* area is dependent with their asset capital which is a combination of all physical, natural, human, social and financial capital.

In the coastal *char* area some natural capital are very scarce where as some are abundant drinking water, cultivable land may the example. The financial capital like savings, stocks for poor dwellers of *char* area are near to nil and also the wages are very meager as income

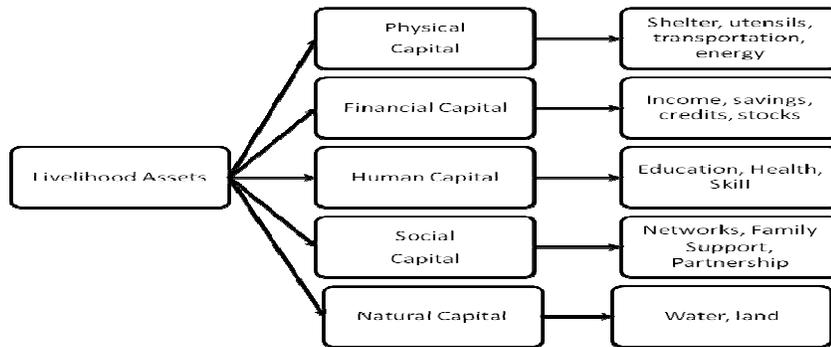


Fig. 3.2.Elements of livelihood assets

generating opportunities are limited. In the *char* area the formation of social capital is very difficult for the poor similarly to develop human capital is also critical in adverse environment. Illiteracy, chronic poverty, epidemic disease, superstitions, mistrust marred the way of forming and enriching human and social capital. Coping with such events can result in a loss of all forms of asset capital gives negative impacts both on mentally and physically require high level of intervention for transformation and adopting strategies to recover and come out of the vicious cycle of poverty and hardship in those areas.

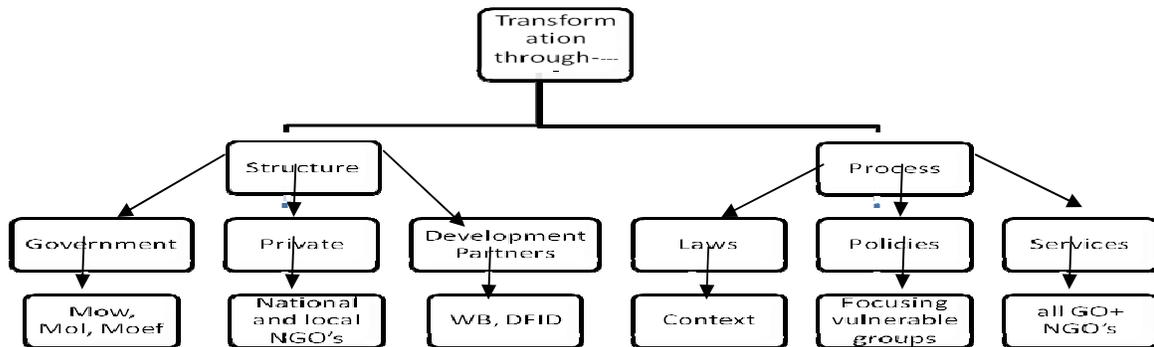


Fig.3.3.Transformation taken place by Structure and Process.

The livelihood of the people of *char* area may be transformed by applying some intervening mechanism which may be both structured and process driven. Different operational bodies of the Government, Non Government Organizations (NGO's) and development partners may fall into the category of transformation by structure. The laws, rules, regulations and policy framing by the central or local administrative authorities and services from all may fall in the category of transformation by process. In the coastal *char* areas livelihood strategies are complex. Contexts are changing and uncertain, with limited choices for life supporting strategies, vulnerability to disasters and intense competition for limited resources. Household

members employ varied living strategies, often living ill fed, ill clad, surviving and competing in different areas, undertaking seasonal work and earning incomes or on credit in the informal economy. A large proportion of the poor are forced to work in the informal sector, earning low incomes for long hours of work. Competition for work is intense, but very limited scope of employment opportunity usually making financial capital i.e. income very low.

To bring any change in livelihood of the people in *char* areas is dependent on the capacity of adopting strategies which are dependent on level of income, skill, available resources, access to resources, prevailing structure, institutional process, social, cultural factors. In general, livelihood sources of the people of the *char* area are usually narrow and their path to access resources are nearly blocked where as people of main land have more or less access to resources due to their socio-politico-geographic location and position.

3.5. Conceptual and Analytical Framework:

Going beyond the mere economic view of analysis objectively in terms of income, expenditure and some other quantitatively defined indicators, the SL framework as a new development lexicon, seeks to understand and analyze the livelihoods of the poor through the lens of the poor and then undertake appropriate poverty reduction strategies. The participatory research methods offer the best means for assessing poverty and capturing what people themselves identify as its principle dimensions, indicators and ways of exit (Chambers and Conway, 1992:14). The SL analytical framework has some inherent notions: 1. People have resources (endowments or capital) which they use to make a livelihood. 2. The resources are not homogenously distributed across members of the society and hence, there are intrinsic competitions over access to and control over those resources; 3. One's capability to transform multiple resources for livelihood goods and services determines one's livelihood resilience and status in the society; people are subject to a process of interaction among different social actors, and there are obvious influences of policies and multi-layer institutions in determining one's property rights and well-being; and households are subject to multiple sources of man-made and natural negative externalities that impact upon well-being and ill-being (Chambers and Conway, 1992:14-15).

Based on previously discussed theories, models and framework, the researcher devised a frame work for clear understanding the relationship among livelihood, its transformation,

strategies and changes of that for the people of *char* area. Strategies vary from context to context and depend on the input and the nature of transformation taken place. Strategies driven by transformation bring changes in livelihood. The change of livelihood may be changes in income, job opportunities, food security, wellbeing, vulnerability. Some factors which arise and influence in the livelihood of poor people in *char* areas come from external environment that may be natural calamities, seasonality other issues depending on the context.

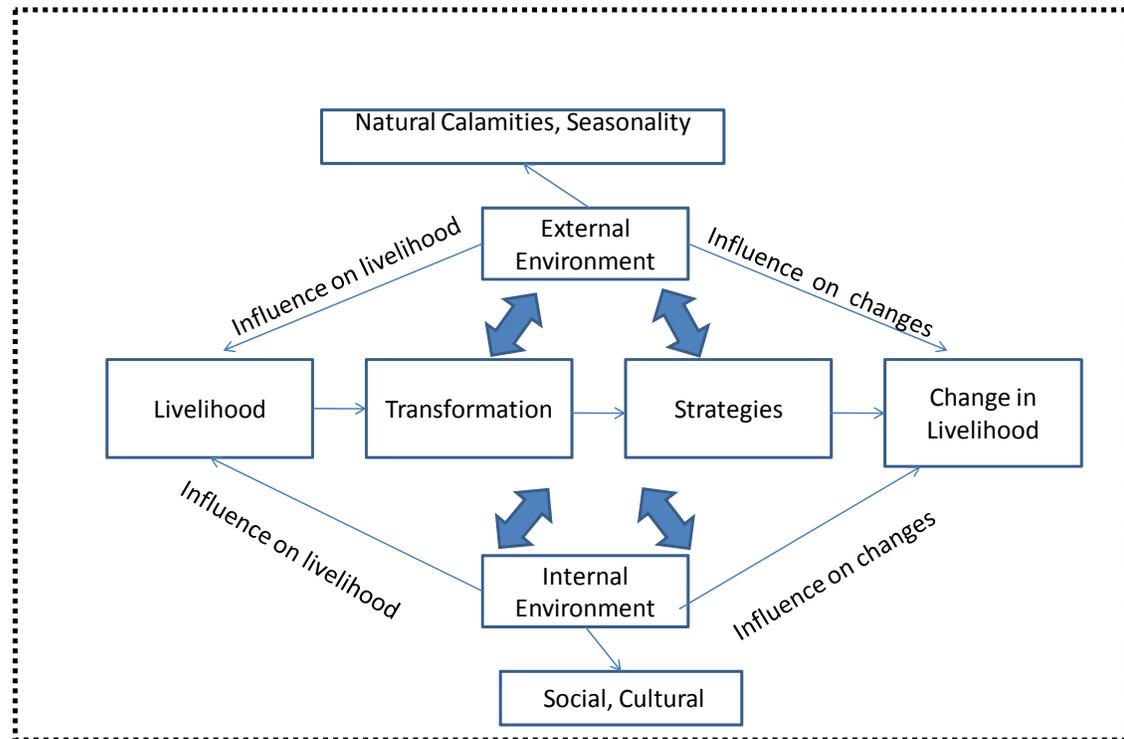


Fig.3.4. Conceptual Framework for the people of *char* area

The influence and impact of these factors may bring any changes either negative or positive on the livelihood of the people of *char* area. Some factors which arise from internal environment that may be from social, cultural or other issues may influence and result in any changes in livelihood. Due to the nature and complexity of handling internal environmental factors and the problem of their proper interpretation in such a circumstance, this part is kept beyond the scope of the research. From the above discussion, a relationship between change in livelihood of the people of *char* area, dependent variable, with other very essential elements of that of people, independent variables, may be drawn where the researcher has identified that Change in livelihood of the people of *char* (dependent variable) depends on food, land, income and asset and vulnerability (independent variable) which can be presented

as $L=f(L_a, F, I, V)$ where L = Change in livelihood of *char* people, L_a =Access to land, F =Food security, I = Income and Assets, V = Vulnerability.

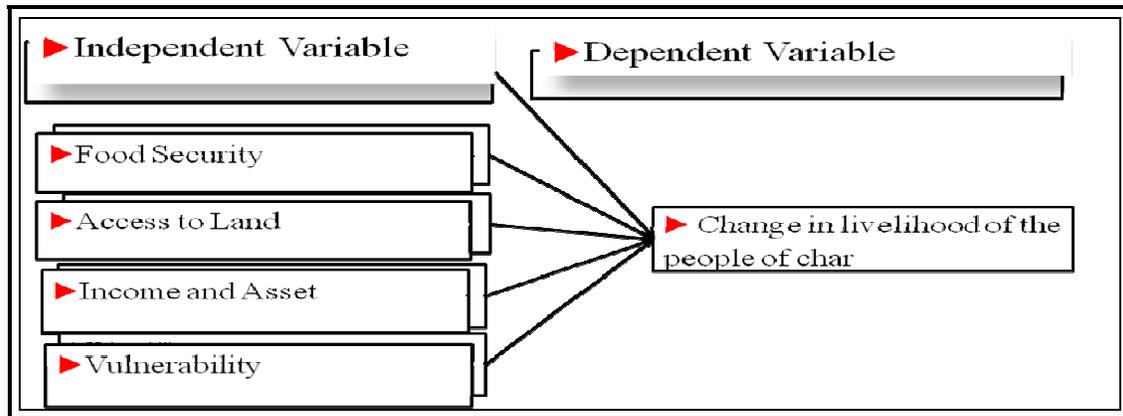


Fig.3.5: Analytical framework between Dependent and Independent variable.

Besides these, many others tangible and intangible variables are involved indirectly in the livelihood of the *char* but excluding all of those a linear functional relationship has been drawn and table 3.1 has been developed to measure the indicators for independent variables.

Sl.	Independent Variables	Indicators
1.	Food Security	<ul style="list-style-type: none"> • Number of meal in take in a day • Contents of each meal • Protein intake interval
2.	Access to land	<ul style="list-style-type: none"> • Possession of land title/deeds • Amount of homestead /cultivable land
3.	Income and Assets	<ul style="list-style-type: none"> • Assess to loan/credit • Expenditure
4.	Vulnerability	<ul style="list-style-type: none"> • Types of hazards faced • Access to potable water • Access to health service

Table: 3.1.Measureable Indicators for Independent Variables

3.6. Methodology:

Research methodology generally means the way of achieving the research objectives. To be more precise, it primarily focuses on the method(s) of data collection along with the justification of using the method(s). It also includes basic parameters to be chosen related to the selected method(s). In addition to that, the instruments for gathering data also fall within the definition of methodology of a research (Aminuzzaman, 1991: 36).

3.7. Methods:

Assessing the livelihood of the people and analyze the changes of that of the people of char area, an integrated, comprehensive approach is essential for data collection, though intangible socio-cultural influential factors are beyond the border of this study. Therefore, a combination of quantitative and qualitative approach may be used to collect primary data along with to perceive the phenomena of significant changes of livelihood parameters; a controlled area may be chosen to compare with the proposed study area. In this study Content Analysis may be chosen to identify, unitize, categorize and analyze to draw inference and conclusion on the basis of research question: whether and what and also Questionnaire Survey may be done to collect primary data to reveal and explore the research problem for the very vulnerable group of the char people.

Since the emphasis of this research is to undergo an intensive examination of livelihood of the people of area of char land in the South Eastern part of the country in Noakhali District and Laxmipur District, a case study research strategy is used. In case study research, an exploratory questions, “what” and “how”, and inductive research are most appropriate and helps to harness detailed and valuable insights and understanding of the topic which could not be achieved by a survey. The case study strategy is both qualitative and quantitative. Methodological triangulation; obtaining data from different sources, such as observations, documentations and interviews, has helped to harnesses diverse ideas about the same issue and assist in cross-checking the results, and consequently has helped to increase the validity, reliability of the findings and has eased data analysis. This study uses data from primary sources (interviews with households, local institutions’ officials and experts) and secondary data sources (published and unpublished documents, meteorological data, and newspaper report).

3.7.1. Selection of Study Area:

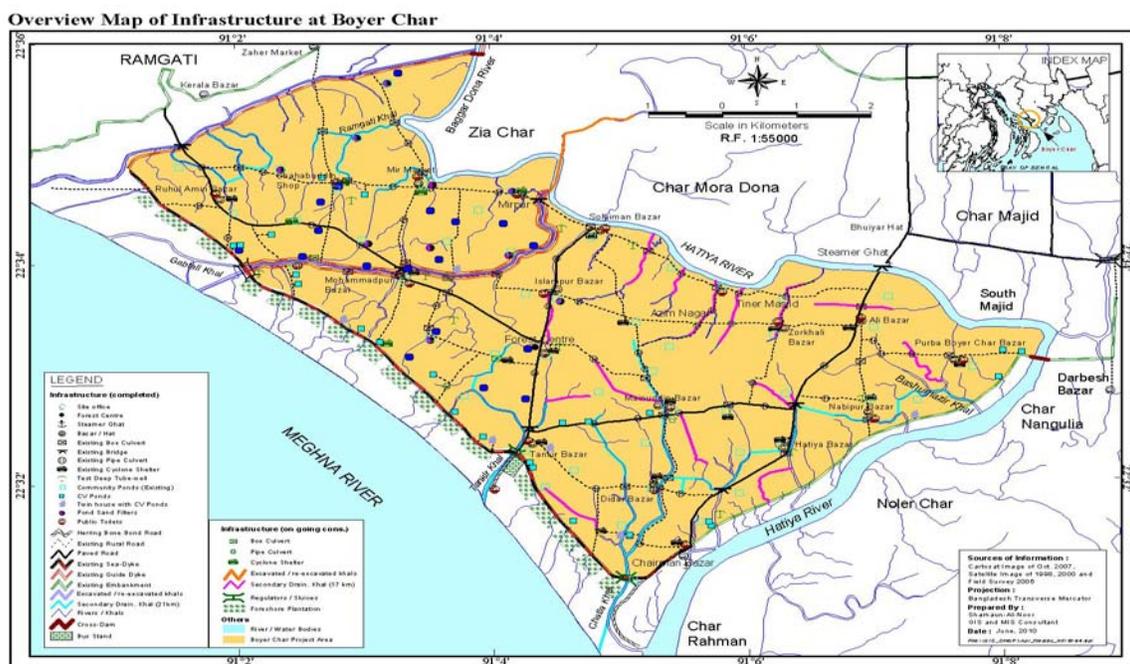
Two Char lands are selected, Boyer Char and Noler Char, first one is chosen as an area of study and the second one is as control area for the comparison both are in Hatiya Upazilla and Ramgati Upazilla under Noakhali District and Laximpur District respectively.

The location of the two Char lands is –

- Boyer Char – located Western bank of Hatiya river, close to lower estuary of Meghna River.
- Noler Char – located Eastern bank of Hatiya river, close to lower estuary of Meghna River.

3.7.2. Description of the Study Area:

Boyer Char: This land is reclaimed both by technical intervention and the geomorphological natural process though a long interval of time. The exact number of population of this area is not known due to frequent shift of the people of this area though 3286 household are settled, household survey carried by cdsp in 2004.



Map: 3.1. Location of Boyer Char and Noler Char. (Source: CDSP website)

Noler Char: This land is also reclaimed by the similar process mentioned above in the case of Boyer Char. Due to absence of communication network and inaccessibility during monsoon period, a significant number of populations shifts their place of living and migrate other char land where they find suitable for them. Moreover, there are no government and

private administrative unit established there. As a result, the people of that area only depend on nature and on Almighty God. Different groups of land grabber reign place to place. It is very common among different local land grabber groups engaged in violent blood shade and rivalry for particularly in land occupancy and control (Barua, 2007: 21-22).

3.7.3. Collection of Primary data:

a. Interview with local households:

Due to time, accessibility and resource constraints, it is not possible to reach all of them but the sampling should be such that represent most of them. So that, stratified *random sampling* is used to choose the respondent *household* for the purpose of the questionnaire survey. Three strata were chosen from each of the study areas namely *household* adjacent to the confluence, *household* at the middle part and *household* near to the mainland. Besides these, the respondents are taken balancing gender and different age groups. Moreover, poorest of the poor (destitute, widow, husband abandoned) are also taken consideration choosing household.

Primary data were collected by using household interviews from March to April 2011. The interview was conducted on 51 households, among them 36 households from Boyer Char and 15 households from the Noler Char (control area). Among the 36 households, 12 households were taken from very close to the river, 12 households are from mid section of the Char and rest of the 12 households are taken from near the main land of the Char. Similar approaches are taken for the Noler Char. 5 households are from near the river, 5 households are from mid part of the Noler Char and 5 households from inner side of the Char are taken. Since the objective of the study is to get a more comprehensive overview about the study, households were randomly selected. To enhance the chance of meeting all the members of households in the area, early morning and afternoon time was found to be an appropriate time. In cases where the households happened to be away from home a new household was randomly found in the same area. Semi-structured interview was found to be an appropriate strategy for the study because questions that were not included in the questionnaire were asked and new questions were raised as ideas emerge through the process. The interview questions focus on a more comprehensive range of issues including socioeconomic status (HH size, sex, age, and occupation), access to land, income and assets, food security and vulnerability on the livelihood assets. The households represented in the study encompass age groups 18 and above; which also encapsulates the idea of all age households. The total number of female

respondents interviewed is 19; 3 widows, 16 married and females respectively. The lower female number is mainly attributed to society's tradition and male dominance; it is the male who is responsible to identify the stranger and give family details. Therefore, it is not a surprise to see a woman refusing an interview in the presence of the men, arguing the appropriate person for interview is the husband. Based on the language know-how of the respondent Bengali were used for interview and later translated into English. The interview was taken place face-to-face. In cases of lack of consent from interviewee or distractions 'interview protocol', a form with questions and ample space between the questions to write the responses was used. To get as much information as possible the respondents were treated as a 'carriers of information' while the author acted as an 'ignorant knower', but was curious enough while the information flows from the interviewee. The interview took an average of 25 to 40 minutes each.

b. Interviews with Government officials:

Interview was also held with the acting Upazilla Nirbahi Officer (UNO) Hatiya, Deputy Project Coordinator, Consultants of CDSP, Union Land Assistant Officer (Tahsildar) and local political leader of different parties. It was kind of informal discussion (without any questionnaire or format) to know the facts and figures of concerned issues. The detailed interview with the respective officials was particularly very crucial to harness and comprehend the problems and prospects of coastal land and water management aspects, policies and their implementation status.

3.7.4. Sources of Secondary Data:

Secondary data are drawn from the existing literatures like books, newspaper reports, previous research works, seminar papers, reports etc

3.8. Sample Size:

A total of 51 (fifty one) *household* will be chosen from the three strata mentioned above. The composition of the *household* will be as follows:

Serial	Study Area	Stratum	No. of Household
1.	Boyer Char (Western Part)	Very near to the coast	12
		Middle part of the char	12
		Near to the main land	12
Subtotal:			36
2.	Controlled Char (Eastern Part)	Very near to the coast	05
		Middle part of the char	05
		Near to the main land	05
Subtotal:			15
Total			51

Table: 3.2. Sample size of the study area

3.9. Justification of Strata Sizes:

The strata sizes are kept as minimum as possible to overcome the burden of complexity and handling so many data at a time may result ambiguity where as maintaining the representativeness of sample population and covering total area of the study. Moreover, they would be further stratified on the basis of gender, age and household status. The controlled area would be chosen as similar demographic status and geographical location but out of the char development and settlement project intervention for proper analysis of comparison between the two areas.

3.10. Data Validation:

The collected data were validated through cross checking with each other and with the secondary sources if any.

3.11. Data Analysis Plan:

The data obtained from the survey method is processed with the use of simple mathematical tools as well as Statistical Package for the Social Sciences (SPSS) for graphs and charts. At first the findings from the primary source are presented. Then those findings are compared and explained with results from secondary source as well as findings from the interview with different department officials. Finally, author has given his own explanation and infer on the basis of the findings and analysis.

An Expedition to Explore the Livelihood of the people of the Study areas

4.0. Introduction:

In this chapter describes and compares four aspects of livelihood of the people of the project intervention Char area and the control Char area (Boyer Char and Noler Char respectively), their socioeconomic condition from the sampled profile of both the areas. The household attributes have been briefly discussed below under demographic, socio-economic perspectives, access to land, settlement of the char dwellers, income and asset, food security, and vulnerability on the livelihood of the poor corresponding to the developed analytical framework.

4.1. Brief Overview of the Study areas, Demographic and Socio-Economic Profile of the Respondents:

It has already been mentioned that for the purpose of this study, two Char areas of Bangladesh (intervention area, Boyer Char as prime area of study and control area, Noler Char as area of study for comparison) under past Horni-Chalondi Union in Hatiya Upazilla of Noakhali District have been purposively selected. A river called Hatiya, divided the union in two parts, the position of Boyer char is in Western side and Noler Char is Eastern side of Hatiya River respectively. The area sits in between 22° 30' and 22° 42' North latitude and 91° 30' East longitude. There are no elected representatives in the Union Parishad as the activities of the electoral members are remain closed due to the verdict of the supreme court since 2005. There is a committee of six members nominated by the Upazilla Nirbahi Officer⁷, Kanungo⁸ of Hatya Upazilla works as the convener of the committee of the Union Parishad. This area is a heterogeneous mix-up of people of different nearby regions. Homeless, rootless people, mostly eroded by river, are poor, illiterate. From the household interview it was found that (Appendix C) among the respondents 61 percent shifted to this area due to river erosion, 25 percent migrated due to forced acquisition. In the case of education a significant of them (67 percent) had not got the chance of rudimentary level of education, around 22 percent had

⁷ Chief executive, of an upazila (sub-district) as outside the metropolitan areas, is responsible for the development activities in respective jurisdiction.

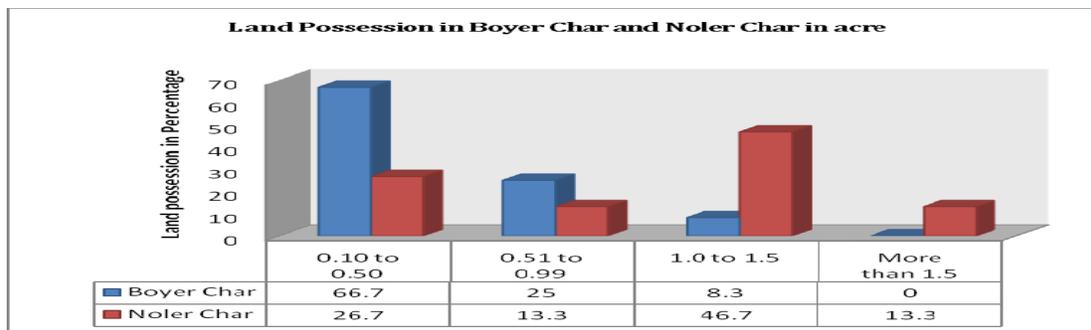
⁸ Government employee works at land administration in the district and upazila land office.

primary enrollment but not completed the primary level of education and only 9 percent had completed primary level education and only 2 percent had secondary level of education. A significant of the respondents found on their living on day labor (33 percent), about 25 percent was agricultural labor; around 23 percent was farmer and small of them found petty trading, poultry and livestock rearing etc.

4.2. Access to Land:

In Bangladesh agricultural Khas⁹ (Government owned) land covers 321,323 hectares, of which 139,691 or 43.47 percent had reportedly been distributed to landless households. Government policy states that khas lands are to be distributed to landless peasants dependent on their livelihood but leakage of khas land as much as 17.2 percent as indicated by a 2001 report (Asian NGO Coalition for Agrarian Reform and Rural Development, P: 17, 2009).

Chart: 4.1.Amount of Land Possession in Boyer Char and Noler Char



Source: Household interview in Boyer Char (n=36) and Noler Char (n= 15), 2011

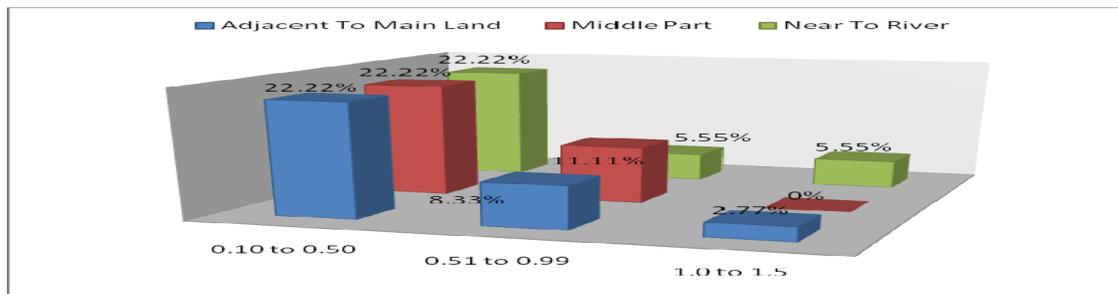
From the household interview of 36 respondents in char 4.1, it was found that in Boyer Char 66 percent had 0.10 to 0.50 acre of land, 25percent had 0.51 to 0.99 acre of land and rest of the 8.3percent had 1.0 to 1.50 acre of land and in the case of control area of study, Noler Char, it was found that 46.7 percent dwellers have land in between 1.0 to 1.5 acre, 26.7 percent had land in between 0.1 to 0.50 acre of land. 13.3percent had land more than 1.5 acre.

From the cross chart 4.2, it was shown that possession of large amount of land holding tendency exits in near to the riverside (5.5 percentage) and adjacent to the mainland (2.77 percentage). The reason might be that land near to the river side was very susceptible to river erosion and land near to main land was susceptible to water logging as a result the amount

⁹ Khas lands are state owned or public land.

may be handsome but not so worthy for use. Highest percentage of the respondents (66.66 percentage in total and 22.22 percentage from each category) had possessed 0.10 to 0.50 acre of land where as no respondent was found possessing 1.0 to 1.50 acre of land from the middle part of the intervention area (Boyer Char).

Chart: 4.2. Location of houses versus amount of Land in acre in percentage



Source: Household interview in Boyer Char (n=36), 2011

In the case of land possession in terms of valid document, it was shown that around 41 percent respondents had no valid document, 23 percent respondents' land were under on the process of registration and rest of the 36 percentage respondents had valid document and land title which had similarity from the information given from the Union land office.

Table: 4.1. Possession of valid Land ownership title and amount of Land in acre

Land Possession	Amount Of Land In Acre				Total
	Type	0.10 to 0.50	0.51 to 0.99	1.0 to 1.5	
Land title	no	(33%) 12	(8%) 3	0	(41%)15
	yes	(19%) 7	(11%) 4	(6%) 2	(36%)13
	on the way to process	(14%) 5	(6%) 2	(3%) 1	(23%)8
Total		(66%) 24	(25%) 9	(9%) 3	36

Source: Household interview in Boyer Char (n=36), 2011

As a significant percentage of the respondents had not valid document, the answer of this question was found by the author through proper investigation to the respondents as during the process of land allotment a large number of people from nearby areas settled temporarily to get allotment of land and after that allottees' sold the land to other dwellers and a few number had migrated to the urban areas which is similar to most of the rural areas of the county.

The table 4.2 below tells the pains and sufferings in terms money, valuable assets and physical torture of the local settlers of the Noler Char. About 80 percent of the respondent in controlled area (Noler Char) had answered that they had purchased token¹⁰ from bahini men by money and other valuable assets and rest of the 20 percent answered that they were physically assaulted.

Table: 4.2. Incidence occurred for the people of Noler Char in Possessing Land

No	Incidence occurred	Frequency	Percent
1.	Purchase token from bahini ¹¹ by money and valuable assets	12	80.0
2.	Physically assaulted	3	20.0
Total		15	100.0

Source: Household interview in Noler Char (n=15), 2011

There were several rival armed groups who colonized the chars and they fought each other for expanding territory. The victorious group tortured the settlers in the conquered territory. They collected extortion from the conquered settlers. When the defeated group recovered their lost territory they tortured and harassed the settlers newly by collecting extortion. Setting fire on houses, looting valuable goods like bullock, goats and molestation of women was the routine feature of those chars. Police could not reach the area. Some vested groups take the advantage of this administrative action against *bahini* since the administration had not yet established its full sway over there. They forced poor settlers to pay them extortion branding them as the *bahini* men. These vested groups rule the areas also coercing poor settlers. On the other hand in absence of full administrative control there the old armed gang appears and coerces them to succumb to their claims.

¹⁰ Permission or authorization given ,by the leaders of different bahini (armed groups) or the member of the bahini, to the helpless inhabitants, in words or supplied token for possession a piece of land temporarily in exchange of money or other valuable assets or the both.

¹¹ It is the groups or gangs of armed cadre, known as *bahini* (group/company), colonized the forest within a span of years. The *bahini* is the private armed cadre group. All *bahini* had a name after their leaders and initially they were the pirates who used the forest as the hideout. With the patronage of the influential people the *bahini* colonized the forest are active in different remote Char areas for controlling their dominance and power over the local settlers and other groups and gangs. Their commands change with the change of political government, where there is less administrative control of the government, these bahini's are more active in those Char areas.

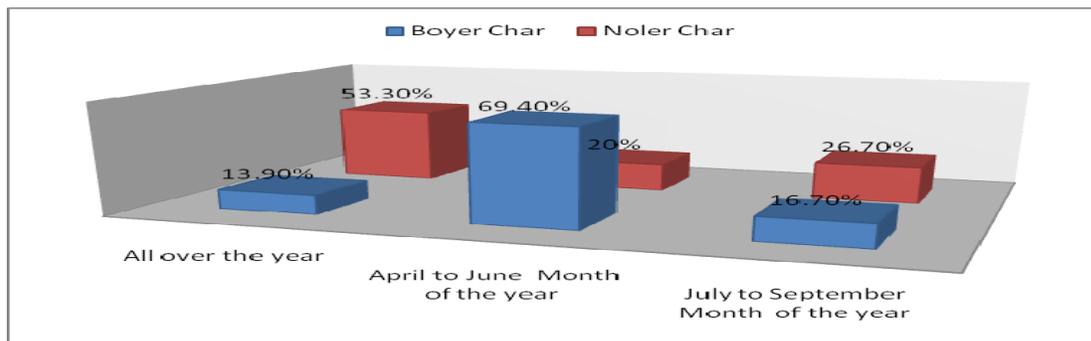
By comparing the two areas , study area and control area , the result shows that the amount of land possession was higher in Noler Char than Boyer Char (13percent dwellers of Noler Char possess more than 1.5 acre of land).

4.3. Food Security:

The researcher explored the perception of respondents about annual food security for the members of their household in terms of food crisis in different periods of last year, items of foods in each intake , number of food intake in a day normally and crisis period, protein intake pattern during crisis period, sources of foods during crisis period. For instant, respondents ranked expenditure on food items as the number one spending sector of their earnings.

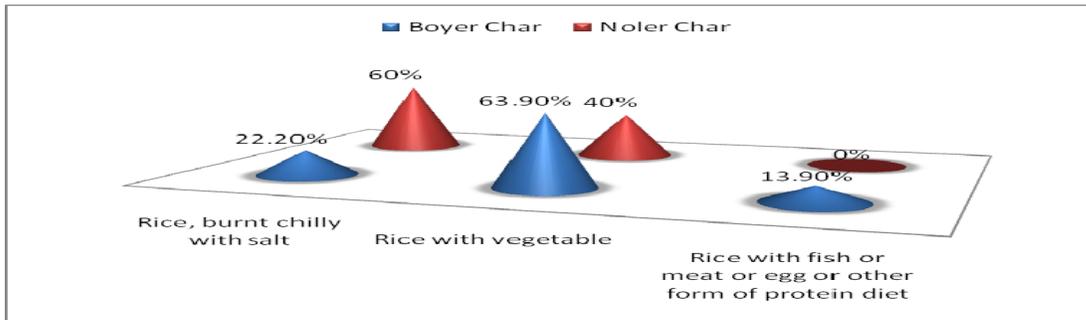
As, it was shown in chart 4.3 that about 69.4 percent of the people of the sampling population suffered food crisis during the month of April to June of last year where as 53.3 percent of sampled population in Noler Char faced food crisis all over the year, during these period of time in Boyer Char, locally the dweller did not have option to produce cereal grains in their land due to huge intensity of salt concentration in soil, only different types of lentils, pulses, peas were produced near the river side.

Chart: 4.3. Food crisis faced during the period of last year in Boyer Char and Noler Char



Source: Household interview in Boyer Char (n=36) and Noler Char (n=15), 2011

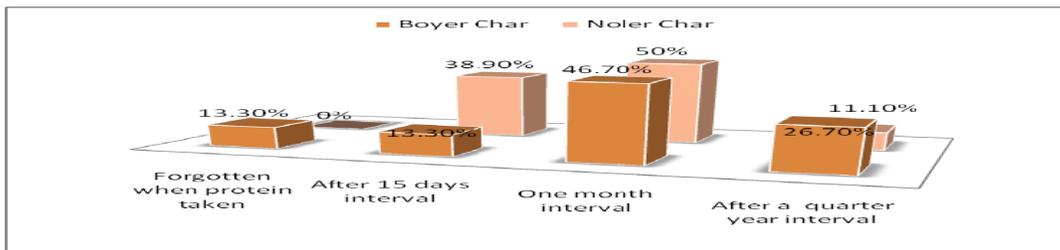
Chart: 4.4.Types of food items taken in each meal in both the Char area.



Source: Household interview in Boyer Char (n=36) and Noler Char (n=15), 2011

In rural areas people always try to take adequate rice even if they are poor, but they compromised on other items such as meat, fish, egg, etc. the prices of which are usually quite high. From the household interview in the chart 4.4 showed that 63.9 percent respondents' daily food intake contained rice with vegetable, usually grown on their homestead, and 60percent respondents' daily food intake contained rice, burnt chilly with salt in the case of project intervention area (Boyer Char) and the control area (Noler Char) respectively.

Chart: 4.5.During crisis period protein intake interval for the people of both the areas.



Source: Household interview in Boyer Char (n=36) and Noler Char (n=15), 2011

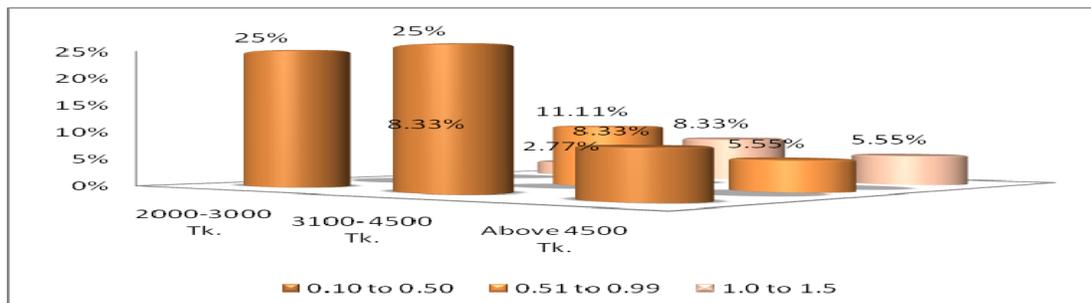
About 13.3 percent respondents, in chart 4.5, having each meal containing rice with fish or meat or egg was found in the intervention area where as for the case of people of control area it was found nil. In the case of fulfilling the nutritional level by consuming protein, the scenario was more or less similar during crisis period in the intervention area (Boyer Char), around 50 percent of the respondents had got the chances of taking protein one month interval in the last year during crisis period and 38.9 percent had taken protein diet 15 days interval during crisis period in last year. Whereas, 46.7 percent of the respondents from the control area (Noler Char) had got the chances of taking protein one month interval in the last

year during crisis period, 13.3 percent had taken protein diet 15 days interval and 26.7 percent had managed protein diet after a quarter year interval during crisis period in last year which are worse than the intervention area (Boyer Char) was showed in chart 4.5.

4.4. Income and Asset:

In the case of project intervention area (Boyer Char), from the household interview it was found in chart 4.6 that among 36 respondents, 13 respondents (36.11 percentage) of which had monthly expenditure ranges between Tk. 2000-3000 with possession of land ranging 0.10 to 1.5 acre respectively, 16 respondents (44.44 percentage) of which had monthly expenditure ranges Tk. 3100-4500 with possession of land ranging 0.51 acre to 0.99 acre respectively and 7 respondents (19.46 percentage) out of which had monthly expenditure is above Tk. 4500 with having land ranging 0.10 to 1.50 acre of land. As such, from the above findings it can be referred that having large amount of land has little impact on more income and expenditure as scopes of optimized utilization of resources are minimal.

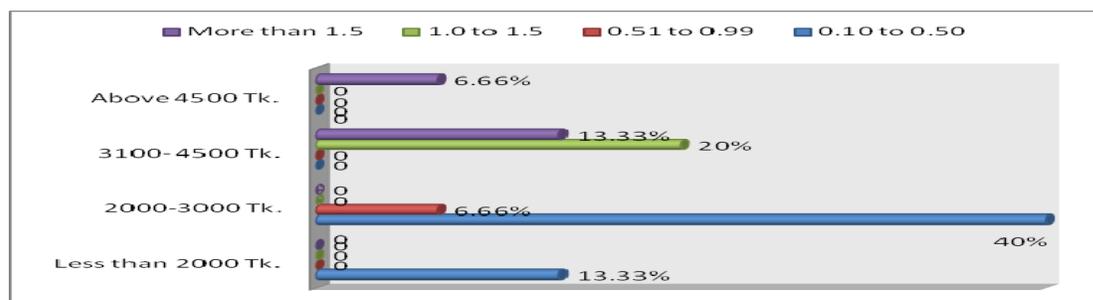
Chart: 4.6.Amount of Land in acre versus monthly expenditure in Boyer Char



Source: Household interview in intervention area (Number of respondent 36) 2011.

In the case of control area (Noler Char), from the household interview it was found in chart 4.8 that among 15 respondents, 02 (13.33 percent) respondents of which had monthly expenditure less than Tk. 2000 with possession of land ranging 0.10 to 0.50 acre, 07 (46.66 percent) respondents of which had monthly expenditure ranges Tk. 2000-3000 with possession of land ranging 0.10 acre to 0.99 acre respectively, 05 (33.33 percent) respondents out total respondents of which had monthly expenditure is above Tk. 3100-4500 with having land ranging 1.0 to 1.50 acre of land and 01 (6.66 percent) respondent having expenditure more than Tk. 4500 with land more than 1.5 acre.

Chart: 4.7.Amount of Land in acre versus monthly expenditure in Noler Char.



Source: Household interview in control area (Number of respondent 15) 2011.

For the case of control area it is shown in chart 4.7, that the maximum level of expenditure range was in between Tk. 2000-3000 while there were a significant disparity of land possession and their expenditure level in comparison to intervention area. People mostly were depend on the moneylenders for their credit because there was no formal credit institutes like banks in the remote Char areas though some local NGOs were running micro-credit programme. The rate of money lending was very high.

About 18 respondents (50 percent) out of 36 were found taking loan (dadon) from local money lenders, 11 (30.55 percent) respondents were found taking loan from local NGOs and rest of the 07 respondents (19.44%) managed credit from other means in Boyer Char in table 4.3.

Table: 4.3. Ways of collecting credit versus earning crisis during previous year in cross tabulator form in Boyer Char

Sources of credit	Earning crisis during previous year			Total
	All over the year	April to June month of the year	July to September month of the year	
Taking loan from NGOs	0	5	6	(30.55%) 11
From dadon ¹²	2	10	6	(50%) 18
Other means	0	5	2	(19.44%) 7
Total	2	20	14	36

Source: Household interview in intervention area (Number of respondent 36) 2011.

¹² Dadon is a Bengali term that means non-institutional and conditional money lending system in rural places.

These ‘other means’ were traditional ways of managing during the time crisis in rural areas. It involved storing of paddy, rice, pulses, onions, potatoes, chili and oil seeds during harvesting times and selling them off when prices soared in the lean season or exchanging commodities (chickens, ducks, eggs, vegetables etc) with the neighbors and relatives. This way they managed during their crisis period. From the household interviews these were revealed, mostly females were involved with this type of trade as most of the male partner migrate to the urban and near about industrial areas for earnings. The money thus earned was spent by female for the needs of the children or to meet the demand of relatives or to repay the loans. The non government organizations (NGOs) were yet to reach the control char area (Noler Char) which might be the main reason of taking loan (dadon) from local money lenders as 11 respondents (73.33 percent) out of 15 were found taking loan (dadon) from local money lenders and rest of the 4 respondents (26.67 percent) managed credit from other means showed in table 4.4.

Table: 4.4 Ways of collecting credit versus earning crisis during previous year in cross tabulator form in Noler Char

Sources of credit		Earnings crisis during previous year			Total
		All over the year	April to June month of the year	July to September month of the year	
	From dadon	2	3	6	(73.33%)11
	Other means	0	2	2	(26.67%)4
Total		2	5	8	15

Source: Household interview in control area (Number of respondent 15) 2011.

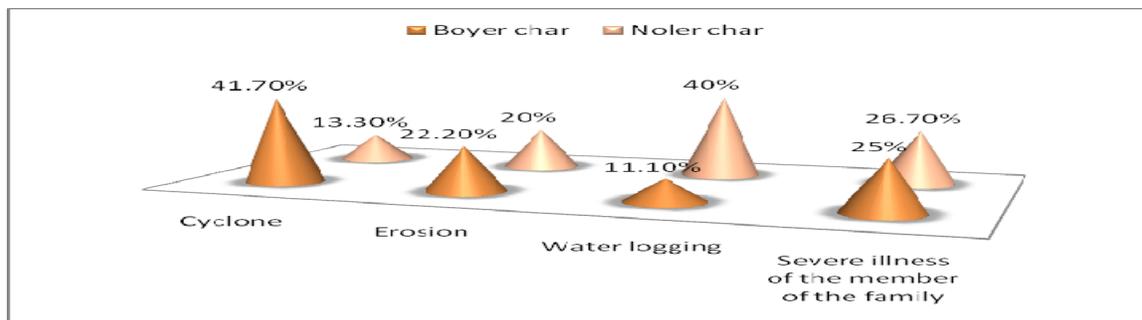
In the case of money borrowing from local money lenders it was also revealed that from the household interviews of the two areas that there was no apparent rate of interest for the borrowing from the traditional moneylenders as they charge 5 to 6 *maunds* of paddy (1 *maund*=37.5 kg. approximate) for each thousand Taka. They did not charge any exclusive interest as it is prohibited in Islam and socially down grading. They charged such fixed amount of paddy to avoid the religious injunction on interest, and charged the fixed amount of paddy dictated by market price of paddy apparently on a ground that they could sell their paddy in the open market during the lean period at a high price like this (5-6 maunds per thousand Tk.). For the borrowings from the NGO the exclusive interest is 12 percent but

eventually it was more than 20 percent for an example given by a respondent (also a borrower from a local NGO) from the Boyer Char to borrow 15,000 taka from local NGO, the borrower had to pay 400 taka each week and it was to be paid up to consecutive 48 weeks and the interest rates stood nearly 30 percent without service charge (Household Interview and field visit study). As a result, the consequences of repayment of credit were the perpetuation of the poverty of the poor settlers in these areas.

4.5. Vulnerability:

From the household interview in the project intervention area (Boyer Char), it was found in chart 4.8 that 15 respondents out of 36 respondents seriously fall victim of terrible cyclone, a significant number, 9 respondents had informed the news of health shocks a major portion of the respondents,

Chart: 4.8. Types of crisis faced last year in Boyer Char and Noler Char.



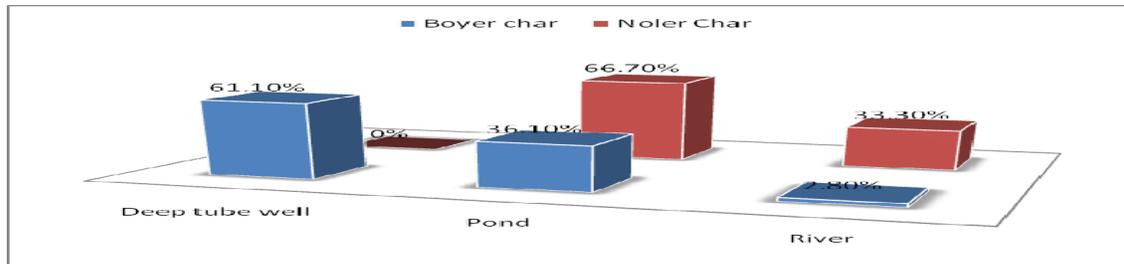
Source: Household interview in Boyer Char (n=36) and Noler Char (n=15), 2011

6 respondents (40.1percent) out of 15 suffered acute water logging due to frequent and intense tidal bore and 26.7percent had to bear the sufferings of illness and health shocks. Women were the worst sufferers of the water scarcity. They had to depend on their male counterparts for collecting water from distant tube well. If their male members migrated outside they had to collect water from the distant tube well. “Now (mid January) we could bathe every alternative day. After a few days, we would have to bathe after two-three days and situation would be so grave later that we would have to remain without bath for consecutive five to seven days (Household Interview and field visit study).

Women fetched water early in the morning or in the evening in groups. At the tube well premises, the water collectors had to make a long queue and there always created quarrel among the water collectors. Screaming and squabbling prevailed around the premises throughout mid night. Even women collected water in mid night to avoid hazards of queue

(Source: Group Discussion). From the household interview in cart 4.9 found that in the project intervention area (Boyer Char), it was found that 22 respondents (61.1percent) out of 36 respondents collected water from Deep tube well, 36.1percent (13 respondents) collected pond water and rest 2.8percent collected river water as source of drinking water but in the case of control area (Noler Char), the situation was very alarming where it was found that

Chart: 4.9.Sources of drinking water in Boyer Char and Noler Char.

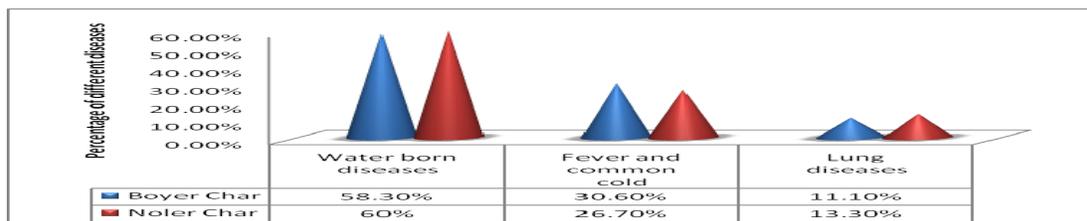


Source: Household interview in Boyer Char (n=36) and Noler Char (n=15), 2011

10 respondents (66.7percent) out of 15 used pond water and rest 33.3percent use river water as the sources of drinking water and this might lead them to suffer various waterborne and contagious health problems. It was reported that during the crisis period, during flood and water logging the situation becomes at risk due to intrusion of saline water and contamination and in draught time the layer drew down, scarcity of surface water became prevalent everywhere and chances of contamination at high rate.

From the household interview in chart 4.10 in the intervention area (Boyer Char) it was found that a major portion of them suffered water born disease, 21respondents (58.3 percent) out of 36 faced diarrhea, cholera and dysentery, 30.6percent suffered fever and cold diseases and rest 11.10 percent had lung diseases.

Chart 4.10: Diseases most often suffered by the people of Boyer Char and Noler Char.



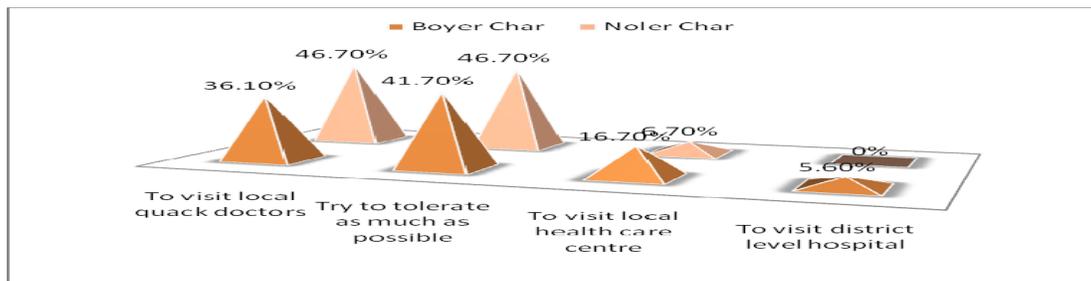
Source: Household interview in Boyer Char (n=36) and Noler Char (n=15), 2011

In the control area (Noler Char), it was found that 60.0percent suffered water born diseases, 26.7percent suffered from fever and cold, 13.3 percent had lung diseases. Scarcity of pure

drinking water and ill sanitation system might be responsible this type of higher prevalence of water born diseases among the dwellers of the control area.

From the household interview in chart 4.11 found that in the project intervention area (Boyer Char), it was found that 13 respondents (36.1 percent) out of 36 visited to local quack doctors, 15 respondents (41.7 percent) tried to tolerate sufferings of diseases without going anywhere, only 6 respondents (16.7 percent) visited to local health care that is Upazilla health care and rest of the 5.6 percent visited to District level health centre.

Chart: 4.11. Measures taken against diseases prevention by the people of Boyer Char and Noler Char



Source: Household interview in Boyer Char (n=36) and Noler Char (n=15), 2011

In the control area (Noler Char) the scenario was disappointing as because there was a tendency to avoid taking measure against diseases and shunning to visit health care centre, it was found a majority of them 46.7percent had the trend to tolerate diseases, 46.7 percent preferred to visit local health care centre. Due to poor communication and remoteness of the location might be responsible for the inhabitants are the barrier of access to health services. Male migration was very high and it made the lives of the women folk more difficult and insecure. Women mobility was not restricted. However, they had to use *burqa*¹³ when they were in outside world. In the monsoon the women combated with the daily tides that erode the homestead mounds. When water recess they repair their own mounds again being eroded by the next tide (Household Interview and field visit study). Where there survival was a matter of big threat fighting against cruel nature, awareness of health issues, pure drinking water and sanitation are beyond imagination in their real perspectives.

4.6. Summary of Findings:

¹³ A loose garment (with veiled holes for the eyes) usually black or light blue robe that is worn by Muslim women that covers the body from head to toe.

Independent Variables	Indicators	Intervention area (Boyer Char)	Control area (Noler Char)
Access to Land	Land title or legal ownership	Had land title but a significant number of land selling and transfer event had found to be happened.	No legal land ownership, the <i>bhahini men</i> (footnote 10 and 11) controlled the land, law and order system and extorted money from them.
	Amount of land ownership	Land distribution and possession were nearly similar.	Anomalies in land possession.
Food Security	Protein intake interval	A significant portion of population could afford protein fifteen days interval.	A significant group could not recall when they took protein item (egg, meat, fish) last time.
	Food crisis faced previous year	A significant portion of sampled population faced food crisis during July to September but the overall situation was comparatively better than the control area.	A major portion of the sampled population faced food crisis all over the last year.
	Food items/contents in each meal	Main food item was rice with home grown vegetable, the situation was better than the control area.	Main item was <i>rice</i> , <i>burnt chili with salt</i> , a few afford protein. These are the subsistent contents of food items that the extreme poor people of control char area can hardly afford.

Independent Variables	Indicators	Intervention area (Boyer Char)	Control area (Noler Char)
Income and assets	Monthly Expenditure	Monthly expenditure was found a slightly higher than the control area.	A significant number of sampled populations were in dire hardship.
	Sources of credit	NGOs played a significant role but yet not reached to the marginal poor.	Highest prevalence of <i>dadon</i> (footnote 12) and absence of NGOs activities.
Vulnerability	Access of drinking water	Pure drinking water sources were available.	Sources of pure and safe drinking water were scarce.
	Measures taken against diseases	Had access to the district and Upazila level health care centre.	Most of them were unaware of diseases prevention and showed tendency of tolerance against diseases.
	Types of hazard faced in previous year	The situation had slightly improved except some occurrences of natural disasters.	Water logging, cyclone and suffering of fatal illness of the family member were the major types of hazards faced by the sampled population.

Table: 4.5. Comparison of Summary findings in Boyer Char and Noler Char

4.7. Conclusion:

The households' responses regarding access to land, food security, income and asset and susceptibility to vulnerability, these elements of livelihood with different indicators of the people of the two Char areas, one intervention Char area (Boyer Char) and another control Char area (Noler Char) both have shown serious matters of concern though the values of measured indicators showed moderate change in livelihood in the intervention area than the control area.

In the perspectives of access to land it is found that due to the intervention of the project, entitlement or ownership of land has created an avenue of possessing resources among the settlers for whom it is very difficult for asset generation and ownership. Some incidence of selling off the land have found among the respondents that tells their tendency of migrating still exist as it is very common among the rural poor people to shift to urban areas to avail better opportunities. Though the ownership or entitlement of land has given security of settler but has not given enough security against seasonal food crisis, unemployment and prevalence of natural disasters.

The activities of Non Government Organizations (NGOs) have found due to project intervention but it has yet not reach to the poorest of the poor segment, only 30.55 percent of the respondents in the intervention area could have the access of credit facility, highest percentage (50 percentage) of them are still fall in the vicious cycle of traditional money lenders with higher interest rate. During crisis time they are compelled to sale their crops before harvest at a low price to meet their emergency need as a result they are deprived of their due prices and the major share goes to the hand of local influential middle men.

Besides these, those who have found of possessing land in between 1.00 acre to 1.50 acre of land could not able to increase their income level in that proportion comparing to those who have found of possessing land in between .10 to .49 acre though the scenario is better than the control area, less productivity of the land resources might be one of the reasons of that finding. The study also revealed that the household expenditure of the respondent of intervention area had moderately increased (36.11 percentage) of which had monthly expenditure ranges between Tk. 2000-3000 with possession of land ranging 0.10 to 1.5 acre respectively, 16 respondents (44.44 percentage) of which had monthly expenditure ranges Tk.

3100-4500 with possession of land ranging 0.51 acre to 0.99 acre respectively and 7 respondents (19.46 percentage) out of which had monthly expenditure is above Tk. 4500 with having land ranging 0.10 to 1.50 acre of land where as in control area (46.66 percent) respondents of which had monthly expenditure ranges Tk. 2000-3000 with possession of land ranging 0.10 acre to 0.99 acre respectively, 05 (33.33 percent) respondents out total respondents of which had monthly expenditure is above Tk. 3100-4500 with having land ranging 1.0 to 1.50 acre of land and 01 (6.66 percent) respondent having expenditure more than Tk. 4500 with land more than 1.5 acre. The reason might be that scopes for income generating activities are scare in the areas and people have the tendency of frequent movement and relocation. In the case of pure drinking water, accessibility of underground water had increased in the intervention area than the control area.

Finally, it can be concluded for the project intervention area, indicators like legal entitlement of land, accessibility of pure drinking water system had shown improvement to a greater extent where food contents, interval of protein intake, access to credit during crisis period, monthly expenditure, measures taken against diseases had given the indication of slight change in comparison with the control area.

5.1. Introduction:

From the previous chapter it was found that both the dwellers of the two Chars are lagging behind in respect of all the measurable indicators more over dense saline concentration in water and land mass, poor communication network system and vulnerability to climate hazard exacerbate the situation even more. However, the findings showed that the situation in the case of project intervention area has positively changed compared to the control area which is needed to be analyzed and validated with the existing secondary results, facts and figures.

5.2. Land a matter of contention:

Land is very limited in Bangladesh in proportion to the population and the pressure on it is constantly on the increase. For example at the turn of the present century there was only one person to every 2.5 hectare of land and today there are about 8 persons living in the same unit of area. If the present trend continues, this figure will grow to 15 persons by the end of the century (Jansen, 1987: 2). Peasants with small land holdings are gradually lose the land they own and the rich are eventually gain control of the land left by the poor. In rural areas the more land a farmer owns, the greater the degree of influence he wields in society.

Social status, leads a commanding position in local politics which again provides greater access to other resources such as Char lands. The char people who have very little agricultural land or none are highly dependent on the elites or the powerful in society for their employment for access to credit and for the little security available. Employment for the landless in the char means working as daily wage laborers in the agricultural fields. It is only the elite who can provide employment in rural Bangladesh and this is especially so in the char lands. The crop phenophases and the varying relationship with the elites result in many peasants being left without work for some periods of the year (Jansen,1987: 3), the overall conditions of the landless people especially in the chars are even more critical not necessarily the highest exposure to climate vulnerabilities but because of the acute necessity of land.

In 1997, the government instituted a policy for distributing Khas land to landless peasants. “Landless peasants” were identified to include landless families with or without homestead and are dependent on agriculture for their livelihood. The policy also prioritized certain groups such as families of freedom fighters, families that lost their land to erosion, divorced women with adult’s sons, landless families without homestead and families whose lands were expropriated by the government (ANGOC, 2009: 13-14).

Box 5.1 Case Study- Awlad Khah: Settler from Hatiya

Awlad Khah was an original inhabitant in Moinudding Bazar of Hatiya Upazila of Noakhali district. He lost his homestead land due to erosion of river Meghna and became landless in 1988. That time extreme poverty and need of Shelter drove him to become a char land dweller. He settled temporarily in char Osman of Hatiya in 1995. He was staying there with his wife and five children. His main occupation became day laborer. Occupation as day laborer is not a constant work. In lean period, khah depends on rickshaw pulling in Feni District which also helped him to run over his family. Settling in char, khah got permission from the local power elite. The contract was on temporary basis. In 1998 the char went to the river due to erosion. Again Khah became homeless. His relatives were living in another char land region. He came here and met with his maternal uncle-in-law for getting permission from the Bashar Maji Bahini (pirate) for staying temporarily. The time where Awland Khah settled in, the char land was like a forest in its formation period, full of Jungle and outsider armed group fought for each other for the control of the char. The communication was very difficult and its bad communication and remoteness people would rarely come here. Some families like him were compelled to come here as they did not have any other place to settle. Due to its remoteness and frequent maneuver of different rival armed groups people called the place ‘voyer char’ (land of fear). Many families both the original and other landless families were coming here to settle. Lack of manpower for falling trees to produce farm land from forest helps him employing himself in day labor profession. The amount of land he made clear and free from jungle, half of that, he got as sharecropper. But these land was not enough fertile. He gave much attention there, got not enough crops for one season. He could cultivate only Amon season (June to October) paddy. Along with that Khah also cultivated mastered and wheat in winter season. Awlad’s elder boy grown-up by this time. He got two cows as share and reared them; in monsoon season fishing was another subsidiary occupation. All these activities needed lot of hard work and dedication. That period he had to

pay a large amount of money to the Bashar Bahini (local armed group/ pirate) men from his scanty amount as a token of salami (a pseudo name of extortion) in every year and at the end of the harvest season. During that time he was always under pressure and financial hardship to run his family giving a large share of his earnings to the bahini men and under fear of torture to pay the money in time. After 2005, the government drove that bahini men away and the situation had improved. He had got land from the government and he had overcome those terrible days.

In Boyer Char, in 2003, plot to plot survey was done and on the basis of that survey khas land was distributed among the settlers of that char though the allotment process is not fully complete, around 2000 cases of land allotment are yet to dispose all these information were supplied from the Union land office.

As the highest percentage of the respondents do not have valid document, the answer of this question was found by the author through proper investigation to the respondents as during the process of land allotment a large number of people from nearby areas settled temporarily to get allotment of land and after that allottees' sold the land to other dwellers and a few number had migrated to the urban areas which is similar to most of the rural areas of the county.

Through investigation into this matter it is found that in Noler Char , nobody has land title or any valid document and due to the salinity in the land mass, these lands are not too worthy in terms of sale value for those reasons. Higher amount of land possession of this area also indicates the presence of higher number of absentee land occupier. These lands are occupied by political elite and cultivated by local settlers in the form of fish or agricultural projects.

5.3. Seasonal food crisis:

From the household study shows majority of population of char dwellers suffer food crisis during the month of April to June where as 53.3 percent of sampled population in Noler Char faced food crisis all over the year, during these period of time in Boyer Char, locally the dweller do not have option to produce cereal grains in their land due to huge intensity of salt concentration in soil, only different types of lentils, pulses, peas are produced near the river side. As a result, seasonal food insecurity among *char* dwellers is prevalent everywhere. Rice is by far the largest constituent of the diet. Rice accounts for about 90% of raw food,

compared to only 3- 4% contributed by fish. Thus, rice, in addition to being the bulk item of the diet, provides most of the energy and other nutrients. Small quantities of fish, pulses, vegetables, and spices are also eaten. Meat, eggs, and milk are rare additions in most of the poor households. A number of reasons are ventured for this, but primarily it is as a result of the eggs being kept to hatch chicks, sold, given away or exchanged. As a result, malnutrition is widespread and has long been a health problem in both the two areas. It affects all sectors of the community but infants, young children and women of child-bearing age are at greatest risk because of their proportionately higher nutritional requirements for growth and development. These requirements are not met due to inadequate dietary intakes, for most part in poor households, or due to improper utilization of ingested nutrients due to infection, which is more common in poor malnourished people. In the case of control area a major portion of the sampled population answered that they had forgotten when they took protein last in their meal. Thus, nutritional inadequacy sets in motion vicious circle of malnutrition, poverty and infection from early life. The consequences of malnutrition are most severe if it occurs in very early in life. Maternal malnutrition during pregnancy affects growth, resulting in low birth weight risking the survival of the child.

5.4. Unemployment, seasonal migration and credit crisis:

The rate of out-migration is very high because in the locality employment opportunity is limited. The agriculture sector, the major sector of the locality cannot absorb the labor force even during peak agriculture season. Similarly, other economic activities are limited. Multiple occupation of same member of the households might yield little income and as well scopes of expenditure what could be the possible reason for this which is a common practice among the poor. The amount of cultivable land has insignificant relationship with per capita annual income and expenditure. *Char* dwellers might not get full benefit from cultivable land due to soil salinity as well as unfavorable agro ecological condition in *char* area.

There are two types of loans: cash and kind. The cash is the predominant mode of transaction though the interest is calculated in kind as described below. Since in Islam the interest is prohibited the moneylenders do not charge any interest rather they buy paddy in advance this is the common way of meeting deficiencies in Char areas (Household interview in Boyer Char and Noler Char 2011). It was found that in the case of intervention area (Boyer Char) 30.5 percent respondents taken loan from non government organizations (NGOs), 50 percent respondents taken loan from local money lenders which are slightly different from the control

area (Noler Char). The reason may be the access of credit from non government organizations. But this quite evident that the NGOs could reach certain segment of the dwellers of the char rest are confined with dadon and traditional means of business, the reason might be that non government organizations invest their fund , to give micro credit, for the target group but most of the people of the area are in such a dire state that they are not capable enough to repay the loan and also government social safety net programme remain in this region as elusive due to corruption, nepotism and political grouping, only one hundred and twenty people are under the coverage of this social program of this area (Household Interview and field visit study).

Women work even in the crop field with their counterpart male folk. For the part of women, they rear cattle, goats and poultry and grow homestead vegetables. During the flood they look after those animals. They collect fuel for cooking. They bear the burdens of household chores. Despite all these economic activities they cannot contribute to the household income directly being engaged in income generating activities (Household Interview and field visit study).

Box 5.2 Case Study- Life story of Sanju Bala

Sanju Bala faced recurring challenges and hardships to overcome problems throughout her life. Though she was born in Chargachi, her family became landless due to riverbank erosion, and had to move to Ramgoti when she was very young. After the initial stage, the family managed to buy 80 decimal of land in Ramgoti, while her father started working as a sharecropper. While her family was settling in Ramgoti, they faced a financial challenge. Her older sister got married, and the family went broke after the wedding. In the following days, they could hardly manage one or two meals a day which consisted mostly of plain rice. She, herself, got married at the age of 20. Recalling their financial hardship, she mentioned that before the wedding, she had only two *kameezes*.¹⁴ Her husband was a trawler driver in Chittagong and came home once in every three months. Her financial situation improved little after she started living with her husband, in the sense that she could then afford two meals a day. Whenever her husband was away for work, she used to live with her parents. Five years after the wedding, she moved to her brother-in-law's house in Ramgoti. The three youngest of her children were born during her stay at the brother-in-law's house. She and

¹⁴ Kameeze is one of the most common outfits of Bangladeshi women/girls.

some other neighbors got to know about *Boyer Char*, and decided to move there with the hope of obtaining some land. They managed to buy some land, but had to spend considerable time to clean them up. At certain stage of her relocation she faced challenges from the land grabbers; however, she was able to regain her land. After moving to the *char*, she spent their savings of Tk. 5,000 to meet consumption expenditure. Her husband suddenly became paralyzed. She could not even afford to take him to the doctor. At this point, she had no way other than starting to cultivate the land herself. Gradually, her younger daughter also started earning money by selling shrimp fry. But as the daughter got a little older, she was unable to continue her earning activities. Poverty did not loosen its grip on her family for another four to five years. As the CDSP started its project intervention in *Boyer Char*, as things slowly started to appear a little promising, in 2006 she took her first loan of Tk. 3,000 and invested it in cultivation. The following year, she took another loan of Tk. 8,000 for household improvement. In 2008, she took the third loan of Tk. 15,000 and married off her eldest daughter. It is worth mentioning that she used this money for various wedding expenses. Soon afterwards however, her daughter became very ill due to kidney failure and ultimately passed away quite soon. They made an unsuccessful effort for bearing the medical expenses through mortgaging and selling parts of their land. But all these efforts failed. The family is still paying to release the mortgaged land. Later on, she took the fourth loan of Tk. 20,000, which she used for two purposes. With this money, she married off her second daughter, and opened a betel leaf store for her husband. Poverty continues to hover around her family, as she is still repaying the loan she took for her second daughter's marriage and has multiple non-formal loans (some at as high an interest rate as 60%).

5.5. Vulnerable drinking water and health facility with climatic shocks:

Various forms of crisis/incidence both idiosyncratic and covariate are likely to negatively affect the economic status of the households. This can happen for two reasons, either because the shocks often leave the households with significant asset depletion directly or because households themselves often are to sell the productive assets to cope up with the incidence/crisis. Feelings of insecurity, uncertainty and defenselessness can aggressively diminish the current state of well-being (Calvo and Dercon, 2007: 37).

Both Boyer Char and Noler Char are vulnerable to floods, cyclones and tidal surges. Noler Char and western part of Boyer Char are more vulnerable. The threat of tidal surge looms

large over the areas from April to late November as the areas are very close to the Meghna in the south and east. The land level of the areas is so low that even during daily high tide in the monsoon the areas go under water for some hours, and during the low tide the homesteads submerge into water. This causes floods in the areas and damages crops, kitchen gardening, fish in the pond and chickens. Such floods also cause many diseases like influenza, diarrhea and other water-borne and infectious diseases.

The scarcity of water dominates the lives of the settlers in the Noler Char. At the initial days of settlement they had no source of water except canal, creeks and ponds. For drinking purpose they used to collect water from the mainland walking 3 to 4 kilometers. There were spatial differences in water availability and water collection strategies. People from Noler char used to collect water by buying water from Steamer ghat¹⁵ in the mainland through boatmen who used to ply every day. They sent containers with boatmen who charged Tk.10 (ten) for each container. The boatmen delivered the container at the ghat from where they took the containers on head load.

“If anyone from our desh (country from where they have come here) came to visit us he would bring container full of water. Similarly, when we visited them we took containers with us for bring fresh water from there.”

There is dearth of health facilities in the areas. The private quack and medicine shops are the main sources of health services. Diarrhea and phenomina, particularly the second one, are two major killers of children. Death at delivery has been reported. Due to poor communication with outside world neither service can reach the area nor can the people have access to outside services. It is almost universal that the pregnant mothers do not get any pre-natal and post-natal services. As a group women are most vulnerable in the char areas. No maternity services are in place and almost all the deliveries take place at home attended by the traditional birth attendant. Dowry is pervasive in the area. Polygamy is also in vogue. Wife beating and abandoned of women by husband and divorce are the problems that haunt the women (Household Interview and field visit study).

¹⁵ A harbor place for boats, steamers etc where small trading takes place.

5.6. Relationship with variables and indicators:

Indicators	r		Level of significance
	Intervention area	Control area	
Amount of Land Possession and Income	.463	.231	.05
Amount of Land Possession and Food intake in a day	.419	.304	.05
Monthly Expenditure and Content of each meal	.582	.690	.05
Sources of Drinking Water and Types of Diseases	.568	.632	.05
Types of Diseases and Measures taken against Diseases	.407	.211	.05

Table: 5.1. Relationship with variables and indicators.

Pearson's coefficient correlation has been conducted to test and compare whether and how much each variable influence each other, both the case of intervention area (Boyer Char) and control area (Noler Char). From table 5.1, a positive correlation is observed between amount of land possession and income, amount of land possession and number of food intake in a day, for intervention area $r=.463$ and $.419$ and for control area $r=.231$ and $.304$ respectively where the test result shows moderate level of positive relationship which indicate that amount of land possession moderately has increased the income opportunity and number of food intake in a day for the people of that area, in the contrary, for the case of control area though the test result is positive ($r=.231$ and $.304$) but indicates low influence on increasing income generation and number of food intake in a day with the increasing amount of land possession.

It is known that optimum utilization of any resources base yield highest level output. In the case of land resource, its quantity and quality (soil condition, fresh water access, fertility etc), technological advent (cultivation technique, high yielding variety, good fertilizer, and protection form climate hazards etc) and accessibility of capital are the determinant factor for the best output from land resources (Rashid, 1981: 54).

As a result, multiplying factor from the land resources gets enhanced in many folds. Most of the rural areas, the scenario are deplorable due to the absence of above factors that cause most of the land resources unproductive throughout the season. In the case of control area (Noler Char), high concentration of salinity in soil mass, no legal ownership of land

resources, absence of government and private intervention and technical support are the catalysts for insignificant relationship between land possession and income, as most of the land resources remain barren and an increased amount of land possession has a little rippling impact in income generation and number of food intake in a day whereas in the case of intervention char area the scenario has slightly improved. Legal possession of land or land title has increased the value of land and intervention mechanism might be the reason of this type of relationship. In poor households of both rural and urban areas, allocation of household expenditure for food is 70 percent, yet the diet is still inadequate in quantity and quality. Market dependence is very high in the rural areas, where only one-quarter of major foods like rice, vegetables and fish are procured from own production and the remainder is purchased from the market (Barua and Sulaiman, 2007: 19-21).

It is recognized that rural poor people spend a major portion of their income for food and which is also revealed in the study. In the case of monthly expenditure and content of each meal the value of $r = .582$ and $r = .690$ for intervention and control char area respectively which indicate that higher degree of positive relationship exist in control area than intervention area. The reason might be that inhabitants of control area have to spend more portions of their earnings for purchasing food items than the intervention area. Similarly, sources of drinking water and types of diseases have more positive value, $r = .690$ of controlling area than the intervention area ($r = .568$), the reason might be that acute shortage of pure drinking water compel the dwellers to have unhygienic water from rivers and ponds that causes them to suffer different types of diseases.

Moreover very low degree positive relationship, $r = .211$, have been found in control area for types of disease and measures taken against diseases, in the case of intervention area the value $r = .407$, which is better than the previous one. The reason might be that in the case of control area are acute poverty, poor communication system, poor access to health facility and above all absence of awareness on health issues.

5.7. Conclusion:

Analyzing the changes in livelihood of the people of Boyer char is the prime objective of this research work. From theoretical perspectives, models and developed analytical framework, it is drawn that any intervention applied to a backward group of people of the society, might bring significant changes in their livelihood in theoretically and to study that very issues in real life might reveal the answer of research question of this study.

To measure the elements of livelihood of the backward group of people of a remote area is not an easy task, the relationship of different variables and indicators found were analyzed and validated with secondary evidence but to reach a clear cut decision or inference is still a far way to go. The data analysis and comparison with the control area produce some interesting findings and validation of the findings with secondary findings shows that in some aspects of livelihood of the study area has positively changed and some aspects the situation is slightly improved and rest of the aspects, the scenario remain unchanged.

In remote char areas, the land is an apple of discord is found in lot of secondary literatures, fierce battle, bloodshed, no control of government or legal authority are very common phenomena, but in the study area the scenario is far better than that stage as under the project intervention though land yet not becomes as productive for agricultural usage as most of the forward places of the country due to salinity, natural calamities and technological in advancement.

As a result, food production and ways of income generating activities are limited and seasonal. For food and labor supply, incidence of higher level of market dependency were found as communication system, infrastructural (bridges and road networks) and virtual, (mobile phone network and high mobile phone penetration rate as found in the entire studied household) both have tremendously improved in the study area those might be the other factors. In the case of pure drinking water the situation has improved though arsenic contamination, salinity and rapid drawdown of sweet water level are threatening issues for water supply system. Health services and facilities are in a dire state, geographic location and remoteness hinder the availability and accessibility of health staffs and professionals in the

place which might be the reason for common practice of high tolerance¹⁶ against diseases and ignorance of health care and family planning system.

¹⁶ Tendency of avoiding taking health care and visiting health centre especially in women found in the household study in both areas.

Conclusion and Reflection of the Study

6.1. Introduction:

This is the final chapter intended to answer the research question, objectives of the study and supplement way forward for better understanding of the statement of the problems in different angle. Livelihood of the people of a certain geographic context, such as in a Char area, is very complex and revolves around different orbits of dynamic, holistic socio-economic-political path. In the case of household level social relations and power inequalities play a significant role for impact of poverty reduction.

Livelihoods are made up of people's capabilities, their available tangible assets (stores and resources) and intangible assets (claims and accesses), and activities which contribute to their overall means of living, and the sustainability of livelihoods refers to their resilience and ability to recover from stresses and shocks, the maintenance and enhancement of capabilities and assets, provision of opportunities for future generations, and long and short term global and local benefit increasing accountability through shifting power towards local populations through decentralization, democracy, and diversity in development institutions and processes (Chambers,1995:173-174). Relationship between diversification and poverty, income distribution, farm productivity, non-farm growth, and gender policy has an important role to play in diversification through targeting vulnerable social groups by increasing safety nets, reducing risk, providing micro-credit, increasing the rural service sector, considering nonfarm enterprise, focusing on rural towns, increasing infrastructure and education, and, most importantly, raising farm productivity (Ellis, 1 998: 1-12).

As such generalization livelihoods in research are not desirable because of the heterogeneous nature of the rural economy. Murray suggests that livelihoods research should focus on the household or community level (micro), take into account the structural, historical, and institutional context (macro), analyze the impact of social relations and power inequalities on poverty, and reflect on the macro context of policy creation. Livelihoods need to be examined circumspectively (at a moment in time), retrospectively (change over time from past), and prospectively (for future policy and action) and that trajectories need to be done for the various social classes (Murray, 2002: 489-509). From above perspectives, to study and

examine the circumspective effect, household interviews have been taken of the inhabitants of the study area with semi structured questionnaire where there are there parts. In first part the demographic profile: household size, gender, education, religion, education, history or reason to migration of the people of that area, social structure etc are studied which is an essential part for relating livelihood of the people of that area. In the second part the prime elements of livelihood (assets, capabilities and accesses) are studied in terms of four variables (access to land, food security, income and assets and vulnerability) which have different measurable indicators which is prepared and set in such a way that can give the answer of the people of char area's capabilities (farm and nonfarm activities, resistant against diseases, natural shocks etc), assets (resources tangible and intangible) and accesses such as access to resources (land, credit, jobs and income opportunities, basic health care etc). The third part is about participation and future aspiration from the intervention area which examine the prospective part (for policy, intervention and action). One control area has been taken for comparison with the study area to examine retrospectively (change over time) the livelihood of the people of the study area.

6.2. Answers to the Research Questions and objectives:

The research, conducted in an area which is located in South Eastern part of Bangladesh and a control area has been chosen, examining retrospective effect, taking into account of all the necessary criteria of control area to serve the purpose bet suited, attempts to address the research question - Whether and to what extent *Char* Development and Settlement Project intervention bring any change to the livelihood of the people of Boyer *char*? The prime objective of this research is to study the livelihood of the people of a Char land (coastal land) with more specifically to study the land allocation and settlement of the people, their situation of food security with socio economic condition and some factors that makes them vulnerable against natural hazards with some fundamental issues (heath, pure drinking water etc) under the project intervention.

In response to the research question for the first part, (Whether Char Development and Settlement Project intervention bring any change to the livelihood of the people of Boyer *char*?) on the basis of empirical data it is found that 87 percent of the respondents had benefitted directly or indirectly from the project intervention, among them 82 percent benefitted from land allocation, 13 percent benefitted from both land and protection against disasters and rest 5 percent benefitted from improved communication system whereas in

consequence of project intervention, question regarding changes taken place by the intervention, the data showed that 24 percent of the respondents had found their livelihood in a way to change but rest of the 76 percent respondents found no change in their livelihood and 35 percent of the respondents had affiliation with the local Non Government Organizations (NGOs) or other community groups or association. For the question of change in livelihood of the respondents by the project intervention empirical data signifies that most of the respondents were benefitted in different ways, land possession or permanent settlement or improved communication, protection against natural calamities, but a significant portion of them yet not managed to improve their livelihoods. Unproductive use of land resources, absence of employment opportunities, frequent shifting and movement nature, lack of scopes of resources generation and mobilization, absence of basic level skills, technical knowhow, absence of basic facilities like main land might be some of the factors that hinder their path of changing livelihoods.

In response to the second part of the research question, (what extent *Char* Development and Settlement Project intervention bring any change to the livelihood of the people of Boyer *char*?) ten indicators (legal entitlement of land, amount of land, number of meal intake in a day, content of each meal, protein intake interval, access or sources of credits, monthly expenditure, types of hazards faced, access to potable water and access to health services) of four variables (access to land, food security, income and assets and vulnerability) related with the livelihood of the people of char areas are measured both quantitatively and qualitatively that showed interesting findings. As it is very complex and difficult to measure to what extent changes take place in the project intervention area.

By comparing similar type of indicators both the intervention and control area may furnish the answer of the research question. Through comparison it is found from the empirical data that in the control area, for the variable, access to land resources, land was a bone of contention, not any legal entitlement or ownership of land compelled the people of that area practicing the policy of might is right. Local extortionist groups and their gang members with the blessings of local political parties occupied the area and ruled the people of that area in their avarices and whims. They had their own systems of adjudication, controlling and ruling the people. There were several rival armed groups who colonized the controlled char and they fought each other for expanding territory. The victorious group tortured the settlers in the conquered territory. They collected extortion from the conquered settlers. When the defeated

group recovered their lost territory they tortured and harassed the settlers newly by collecting extortion. Setting fire on houses, looting valuable goods like bullock, goats and molestation of women was the routine feature of those chars the area. While such was the situation in the controlled area, in the project intervention area, there were a significant number of the respondents who had legal entitlement of land and others respondents who did not have had legal document either bought land or under way of processing legal documents. Due to the legal ownership and entitlement of land resources, it has increased the accessibility of resources of the settlers in one hand; on the other hand the increasing selling price of entitled land has created the scopes of resources generation and mobilization among the marginal poor people in the project intervention area.

The result found for the variable, food security, a major portion of the sampled population faced food crisis all over the last year in the control area and most of them could afford rice, burnt chili with salt in daily meal where as in the project intervention area a significant portion of sampled population faced food crisis during July to September and could managed vegetable with rice in their daily food intake but the overall situation was comparatively better than the control area.

The result found for the variable, income and assets, a monthly expenditure was found a slightly higher than the control area in case of access or sources of credit NGOs played a significant role but yet not reached to the marginal poor where as in the control area a large number of sampled populations were in dire hardship and highest prevalence of dadon and absence of NGOs activities.

For variable vulnerability, the result shown that in intervention area pure drinking water sources were available, had access to the district and Upazila level health care centre and the situation had slightly improved except some occurrences of natural disasters where as in control area sources of pure and safe drinking water were scarce, most of them were unaware of diseases prevention and showed tendency of tolerance against diseases and water logging, cyclone and suffering of fatal illness of the family member were the major types of hazards faced by the sampled population.

All these together, analysis of field study results, have given the answer of the first and second segment of the research question and at a time reached the objective of the study by showing a positive impact of the livelihood of the people of intervention area that has a

direct relationship with changes in livelihood of the people which also has been identified from the developed livelihood frame work (Fig. 3.1, Carney, 1998) and the conceptual framework (Fig. 3.4) developed by the author that indicates changes in livelihood might take place from choosing and adopting strategies from lot of options which are processed from transformation that is the casual effect of intervention.

6.3. Scope for Further Research:

Upon completion of the research with the given research question and the scope, it is observed that some critical and relevant issues have not been covered by this research. To map the livelihood of the people of char areas under the project intervention, prime focus is given only four elements i.e. access to land resources, food security, income and assets and vulnerability (climatic hazards, potable water and health facilities) where as internal issues such as social crisis, coping pattern and local level institutional arrangements are kept beyond the scope of this research which can be pertinent and interesting areas for future research.

References

- Adnan, S. (1976)**, Land, Power and Violence in Barisal Village, the village study group working paper No. 6, p. 1-9
- Adnan, S. (1978)**, Differentiation and Class Structure in Village Shamaj, the village study group, Working paper No.8 Dhaka
- Ahmad, N. (1956)**, Rural Settlement in Pakistan, Geographical review, vol. 46, p. 388-398
- Ahmed, M. and Jenkins, A. (1988)**, Traditional land grabbing and settlement patterns in the South Eastern Delta, Oriental Geographer, Vol. 33
- Aminuzzaman, M. S. (1991)**, Introduction to Social Research, Bangladesh Publishers, Dhaka
- Anderson, M. and Woodrow B. (1989/1998)**, Rising from the Ashes. Development Strategies in times of Disasters, London: Intermediate Technology Publication
- ANGOC, (2009)**, Securing the right to Land, a CSO overview on access to Land in Asia published by Asian NGO Coalition for Agrarian Reform and Rural Development, Quezon City, Philippines
- Ali, S.M. (1980)**, Administration of Char land in Bangladesh, Asian Affairs, Vol. 2 p 295-303
- Ashley, C., & Carney, D. (1998)**, Sustainable Livelihoods: Lessons from Early Experience. London: DFID
- Banu, D. (2002)**, BRAC-char development and settlement project 2000-2004: midterm evaluation report. Dhaka
- Baqee, M.A. (1998)**, "Peopling in the land of Allah Jaane"- Power, Peopling and Environment: The case of char-lands of Bangladesh, the university press limited
- Barkat, A., Roy & Khan, M.S. (2007)**, Char land in Bangladesh: Political economy of ignored resources, Dhaka, Pathok Samabesh
- Barua, P. and Sulaiman, M. (2007)**, Impact evaluation and client satisfaction of northwest microfinance expansion project. Research and Evaluation Division, BRAC: Dhaka
- B.B.S. (2007)**, Bangladesh Bureau of Statistics. Report of the household income and expenditure survey, 2005. Dhaka: Bangladesh Bureau of Statistics.
- Bebbington, A. (1999)**, Capitals and capabilities: A framework for analyzing peasant viability, rural livelihoods and poverty

- Blaikie, P., Cannon, T., Davis, T. I. and Wisner, B. (1994)**, At Risk: Natural hazards, people's vulnerability and disasters. London: Routledge. p. 284
- Brocklesby, M. A., & Fisher, E. (2003)**, Community development in sustainable livelihoods approaches - an introduction. Community Development Journal, 185-198
- Brocklesby, M.A. and Hopley, M. (2003)**, The practice of design: developing the *chars* livelihoods programme in Bangladesh. J. Int. Dev. 15:893–909
- Calvo, C. and Dercon, S. (2007)**, Vulnerability and Poverty. Oxford: Oxford University press
- Carney, D. (1998)**, Sustainable Rural Livelihoods: What Contribution Can We Make? London
- Carney, D. (2002)**, Sustainable Livelihoods Approaches: Progress and Possibilities for Change, London
- CDSP, Progress Report.7, (July-December, 2007)**, Char Development and Settlement Project, Bangladesh
- CDSP (2011), website:** www.csdp.org.bd. Retrieved 10 March 2011 at 4:14 pm
- Chambers, R. (1987)**, Sustainable livelihoods, environment and development: putting poor rural people first. IDS Discussion Paper 240, Sussex: IDS, University of Sussex
- Chambers, R., & Conway, G. (1992)**, Sustainable rural livelihoods: practical concepts for the 21st century. IDS Discussion Paper 296, Sussex: IDS, University of Sussex. Retrieved October 29, 2010, from <http://catalogue.nla.gov.au/Record>
- Chaudhury, M. (2008)**, Situation analysis of ecosystem services and poverty linkages in Bangladesh, Dhaka: BRAC
- Chowdhury, E.H. (1988)**, Human adjustments to river bank erosion hazard in the Jamuna floodplain, Bangladesh. Human Ecol 16 (4), p 421-37
- Currey, (1979)**, Mapping areas liable to famine in Bangladesh, University of Hawaii
- DFID, (1999-2001)**, Sustainable Livelihoods Guidance Sheets, Department for International Development, <http://www.eldis.org/go/topics/dossiers/livelihoods-connect/what-are-livelihoods-approaches/training-and-learning-materials>, retrieved from last January 24, 2011
- Ellis, F. (1998)**, Household strategies and rural livelihood diversification, Journal of Development Studies, 35(1), p 1-38
- Ellis, F. (2000)**, Rural Livelihoods and Diversity in Developing Countries, Oxford University Press

Gillespie, P. (2010), Bangladesh: of disasters and a disastrous development, Connexions Library Article, www.connexions.org/CxLibrary/Docs/CX5036- Bangladesh Disasters.html accessed on 23 January 2011

Haque, C. E. (1989), Coping with river bank erosion and hazard and displacement in Bangladesh : Survival Strategies and Adjustments, *Disasters*, Vol. 13, No. 4, p 300-314

Haque, C. E. (1987), Impact of river bank erosion in Kazipur: An application of land imagery, *REIS newsletter*, No 3

Helmore, K., Singh, & Haque, N. (2001), Sustainable Livelihoods: Building on the Wealth of the Poor, West Hartford, CT:Kumarian Press

Islam, & Islam, (1985), A Brief Account on Bank Erosion, Model Studies and Bank Protective works in Bangladesh', *REIS Newsletter*, No.2, Jahangirnagar University

Islam, M. A. (1974), Tropical Cyclones in coastal Bangladesh, *Natural Hazards: Local, National, Global*, New York: Oxford University Press

Islam, S. (1979), The Permanent Settlement in Bengal: A Study of its Operation, Dhaka: Bangla Academy

ISPAN, (2006), Irrigation Support project for Asia & Near East, newsletter March

Jansen, (1987), **Rural Bangladesh: Competition for Scarce Resources**, Dhaka, the University Press Limited

M. Ann, and M. Hobley, (2003), *Journal of International Development J. Int. Dev.* 15, 893–909

Murray, C. (2002), Livelihoods research: Transcending boundaries of time and space, *Journal of Southern African*

Rahman A. (2008), Health Poverty in Island Chars of Northwest Bangladesh for the Nodi o Jibon Policy Paper

Rashid, H. (1981), *An economic geography of Bangladesh*, the university press limited

Scoones, I. (1998), Sustainable Rural Livelihoods: A Framework for Analysis, institute of development studies, Working Paper 72, Sussex: IDS, University of Sussex

Haque, M. and Mohammad, A. Z. (2006), Report Card on char livelihood program

The Daily Janokantha, (2010), Report on Hatiyar Boba Kanna at 10th December 2010

Wilde, K. and Islam, R. (2002), The Dimension of Co-Governance in Coastal Development: a case study from Bangladesh, Paper Prepared for Presentation in Coastal Zone Asia Pacific Conference, Bangkok

Wilde, K. (2000), Out of the Periphery: Development of Coastal Chars in Southeastern Bangladesh, The University Press Limited, Dhaka

Zaman, M.Q. (1989), The Social and Political Context of Adjustment to Riverbank Erosion Hazards and Population Resettlement in Bangladesh, Human Organization, Vol. 48, No 4

Zaman, M.Q. (1988), Jore –Jar-Jomi-Tar: A Case Reform in Char land Policies and Administration in Bangladesh, River Bank Erosion Impact Study, Jahangirnagar University, Savar, Bangladesh

Zaman, M.Q. (1987) Endemic Land Conflict and Violence in Char Villages of Bangladesh River Bank Erosion Impact Study, No. 3, Jahangirnagar University, Savar, Bangladesh

Appendix

Appendix- A

Operational Definitions

Char	A tract of land, surrounded by the water of an ocean, sea, lake, or stream; it usually means any accretion in a river course or estuary.
CDSP	<p>A land based project run by the Government of Bangladesh with the collaboration of Dutch Government. The objective of the project is</p> <ul style="list-style-type: none"> □ To uplift the socio-economic conditions of the poorest population in the coastal area. □ To achieve these long term objective, the project seeks to achieve three short terms purposes- <ul style="list-style-type: none"> ➤ Promotion of Institutional Development ➤ Accumulation & Dissemination of knowledge on coastal zone ● Land Settlement of the landless population ● Development of Infrastructures ● Improvement of Agricultural Extension Services
Change in Livelihood	Livelihood is a set of complex issues that shapes a human being's ways of living; it comprises the capabilities, assets (both natural and social) and activities required for a means of living. It is assumed that application of intervention mechanism may create lot of options and scopes to the target group of population in an area which may lead to opt for strategies and choices that might ameliorate or fan the flames of previous burdens. But to measure the percept change in the livelihood, the author has taken a control area, absence of intervention mechanism, as a tool to compare and hence to draw a conclusion whether and to what extent the intervention mechanism brings change to the indicators measured in terms of access to land, food security, income and assets and vulnerability.
Vulnerabilities	Long term factors that affect a community's ability to respond to events or make it susceptible to disasters. Vulnerability has many dimensions: economic, demographic, social, political and psychological, but the poor tend to be most vulnerable.

Appendix- B

bgbr ckræj x (K)

BwZeiPK n`ÿc f³ Pi GjvKvi Rb` (eqvi Pi)

ibigambiteiKZ ckræj x nZ cÜB Z_` DcvE kpgvI b_ 9mD_ iekje` `ij tqi Gg uc uc uR tciMÜg Ašfj³, u_mmm Gi MtelYv KvtR e`eüZ nte hv cvl`Kq emfjZ Ab` tKvb KvtR e`enfti i Rb` bq|

K. mvari Y Z `:

1. big: 2. wj ½:

3. eqm

4. wkyMZ thul`Zv: K. ibiyi L.Ayi Avb m=úbæwKS`cÜ_igK ié` `ij q AbfjY`M. cÜ_igK ié` `ij q DËY`N. gva`igK ié` `ij q DËY`O

5. tckv: K.Kil Rix L.gmRix M.¶i`e`emix N.w`b gRj O.Kul klgK P.ZvZx Q.Mpeay R.Ab`ib`

6. cuietfi i tgu m`m`msL`v: K.GK nZ Pri L.cüP nZ Avl M.AvtUi AvæK

7. ag` K.gmjg L. w`y M.tešx N.Li`=ib O.Ab`ib`

8. ceZ`Pemetmi `ib -----

9. eqvi Pti Amvi Krib -----

L. fig eivi` msušt

1. Avcbri wK GB Pti wR`Rig AvtQ (Kul I emMn) K. niw L. bv

hw` niw nq Zmjtj cui gub KZ K. .1- .49 GK i L. .50- .99 GK i M. 1-1.5 GK i N. 1.5 GK i Gi AvæK

2. Rig Avcub wK fite tctjb: K. miKvix fite L. Ab`Kvtiv gva`tg M. wj tRi gratg N. Ab`Kvb Dcvq

3. Avcbri KvtQ wK Rig i gwj Kvb mE` w`w` w`M b=f AvtQ? K. niw L. bv

4. GB Rig tctZ Avcub wK tKvb mgm`vi m=šub nqtQb? K. niw L. bv

hw` niw nq Zmjtj tKv_vq I wK fite mgm`vi m=šub nqtQb K. UvKvi ev m=ut` i wewbg tq tUvtKb msMü L. kviiw K ev gubimK wbiZb

5. Avcub wK gtb Ktib GB Rig Avcbri Riebhv`vq cui eZB` GtbQ? K. niw L. bv

hw` niw nq Zmjtj wK fite -----, -----, -----

M. Lv` wbi vCËv:

1. MZ eQtii tKvb tKvb gvtm Avcbri Lv` msKU t`Lv w`tquj? K. Avt`v t`Lv t`q ub L.mviv eQiB M. Gwcf nZ Rb N. RjvB nZ tmb=f

2. mvariBZ: Avcub w`tb Kq teyv tLZ cutib? K. wZb teyv L. `teyv M.GKteyv

3.1. G a i t b i t i m l e ' v a t z A v p u s t i n t j A v c b r i v m a v i b z : u K K t i b ? K . t i m c f l i v t L b L . t i b x q K i e i v t R i K v t Q h v b M . D c t R j v t r ' t m e v t K t b ' h v b N . t r j v t r ' t m e v t K t b ' h v b

3.2. A v c b r i G j v K v q t i b x q t r ' t m e v i e e ' v A v t Q u K ? K . n i v L . b v

h v i t _ t k _ v t K Z i n t j A v c i b u K a i t b i t m e v t c t q _ v t K b t m L v t b

K.-----

L.-----

M.-----

P. B u z e v P K n t j y c / A s b z x z w / g a e z z v m s k i s t c k u e j x

1. A v c i b u K t K i b t i b x q m s N / K u g D i b u l / c i z o v t b i m m e v G i m t _ m e u , 3 ? K . n i v L . b v

h v i n i v n q Z i n t j G t _ t K A v c i b u K f i t e D c K Z n t Q b ?

K.-----

L.-----

M.-----

2. G B P t i e m e v t m i d t j A c i b u K t K i b f i t e t K i t b v c i z o v t b i K v t t _ t K c z y e v c t i y v f i t e m i n i h I m n t h u M Z v t c t q t Q b ? K . n i v L . b v

h v i t c t q _ v t K b Z i n t j u K f i t e

K. R i q e p ' v e t

L. c i K u z K u e c h f q i n v Z t _ t K m j y v

M. D b z h i Z i v q v Z e e v

3. A v i G t z A v c b r i R x e b h v i g i t b i b q b / c w i e z b N t u t Q u K ? K . n i v L . b v

h v i n i v n t q _ v t K Z i n t j u K f i t e ?

K. A v q - e q -----

L. L v ' t b i v c E v -----

M. A v e m t j -----

N. c i K u z K t h u m m j t j v -----

A v c b r i A v s t i K m n t h u M Z v i R b A v c b v t K A t b K a b e v

bgbr ckrjx (L)

ibqšy fē Pi GjvKvi Rb (btj i Pi)

ibtgambteikZ ckrjx ntZ cōB Z_ "Dcivē kpgvī b_ qmD_ nekje`ij tqi Gg uc uc wR tclMāg Ašfjē, w_umm Gi MteIYv Kvfr e eūZ nte hv cvl'Kqj emfēZ Ab` tKvb Kvfr e enitī i Rb` bq|

K. mvari Y Z :

1. big: 2. wj ½:

gijv

cjæl

3. eqm

4. ikjyMZ thmZv: K. ibiyi L. Aji Avb m=ubewKS`cō igK iē`ij q AbēxY©M. cō igK iē`ij q DēxY©N. gva igK iē`ij q DēxY©

5. tckv: K. Kil Rix L. grmRix M. jē`e emqx N. w b gRj O. Kil kigK P. ZvZx Q. Mneay R. Ab`ib`

6. cni etī i tgiU m`m`msL`v: K. GK ntZ Pri L. cūP ntZ AvU M. AvtUi AvāK

7. ag© K. gmnjg L. w`y M. tešx N. Lf=wb O. Ab`ib`

8. ceZfememmi `wb -----

9. GB Pti Amvi Kvib -----

L. fig eivl' msvst

1. Avcbvi wK GB Pti wR` Rig AvtQ (Kil I emMn) K. niw L. bv

hw` niw nq Zmtj cni gub KZ K. .1- .49 GK i L. .50- .99 GK i M. 1-1.5 GK i N. 1.5 GK i Gi AvāK

2. Rig Avcub wK fite tctjb: K. mi Kvix fite L. Ab`Kvix gva`tg M. wj`Ri gvatg N. Ab`Kvb Dciv

3. Avcbvi KvQ wK Rig i gni Kvib mē/ wW/ `m b=af AvtQ? K. niw L. bv

4. GB Rig tctZ Avcub wK tKvb mgm`vi m=šub ntqtQb? K. niw L. bv

hw` niw nq Zmtj tKv`vq I wK fite mgm`vi m=šub ntqtQb K. UtKvi ev m=ut` i wewgtq tUtKb msMā L. kvimK ev gubmK wbhZb

5. Avcub wK gtb Ktib GB Rig Avcbvi Riebhrvq cni eZB GtbQ? K. niw L. bv

hw` niw nq Zmtj wK fite -----, -----, -----

M. Lv` wivcEv:

1. MZ eQtī i tKvb tKvb gvm Avcbvi Lv` msKU t` Lv w` tqQj? K. Avt`v t` Lv t` q w L. mvi eQiB M. Gicj ntZ Rb N. RjvB ntZ tmP=af

2. mvariB: Avcub w` tb Kq teyv tLz cvtib? K. wzb teyv L. `teyv M. GKteyv

3. Avcbvi Lv` Zmij Kvq wK wK Dciv`v`fK? K. fivZ, j eb, i`Kbv gmiP L. fivZ I Zi Kvix M. fivZ, gvQ/gism/wlg/`p M. Ab` wKQz-----

3. msKUKijxb mgq w`b Kq tejr tLtz cufib? K.wzb tejr L.`tejr M.GKtejr

HB mgq Avcbri Lv` Zij Kiq wK Lvevi _vK? -----

4. msKUKijxb mgq gV0/gvsm/Wg/'p tLtz tctitOb K. 15w b L. 1 gvm M.3 gvtmi AwAK w`b ci GKevi N. fTj tMtOb Kte tL.tqtOb

5. msKUKijxb mgq wK fite Lv` msMh Ktib? K. miKvix mvinh` t_tK L. cWZtekt` i KvQ t_tK M.Ab` tKib Dcvtq-----

N.m=U` I DcVRB:

1. Avcbri gvmK Mo Avq I e`iq KZ? -----

2. Avcbri e`itq LvZ ,tjv wK wK? K. Lv` L. e`jM.JIa/ wPwKrmv N. Ab`vb` -----

3. Avcvb wK Avcbri Avq t_tK gvtmi mKj LiP tgUvZ cufib? K.niv L.bv

hw` bv nq Zvntj wK Dcvtq LiP wbeM Ktib? K. GbwRI ntZ FY KtI L. `v` tbi gva`tg M. Ab` Dcvtq

4. eQtI i tKib tKib gvm ,tjvZ Avcbri DcVRB msKU t`Lv t`q? K. Avf`v nqbv L. mvin eQiB nq M. Gucf` ntZ Rb N. Rj wB ntZ tmD=f -----

H mgq Acvb Avcbri cwievti i LiP wK fite tgUvb? K.GbwRI ntZ Fb wbtq L. `vbxq gnvRbt` i KvQ t_tK Fb wbtq M.Ab` Dcvtq -----

O.SjK/AvC`

1.MZ eQtI Avcvb wK aitbi SjKi m=U`xb ntqtOb? K.fqen eb`v L.NjwSo M.b`x fisMb O. cwievti i DcVRB`tg e`w`i gZ`jev` jwBv

1.1HB mgq Avcbri wK cwi gvb Aw`R` q`q` wZ ntqtO? -----

2. Avcbri Lvevi cvbi Drm wK? K.bj Ktci cvb L.cKj/Lvtj i cvb M.b`xi cvb N. Ab`Kvb Drm

2.1. cvb Kiv Qvov Ab` tKib KtR e`envi Ktib K.bj Ktci cvb L.cKj/Lvtj i cvb M.b`xi cvb N. Ab`Kvb Drm

2.2. AvC` ev` jhmKijxb mgq wK fite wbi vC` cvbi Pwn`v tgUvb?

K.-----

L.-----

M.-----

3. wK wK aitbi Amf`/tiw e`w`vZ Acvb I Avcbri cwievti i m`m`viv cUqB tftMb?

K cvb ewnz tctUi Amf`

L. dmdtmi tiw e`vax

M. mvari Y wUv Rj

N. Abvb` tiw e`vax

3.1. Gaiþbi timēvaqZ Avpūšntj Avcbri v mavi bZ: wK Kþib? K. tim cþl i vLb L. vbxq Kwe i vRi KvQ hvb M. DcþRj v
v v tmev tKþ` hvb N. tRj v v v tmev tKþ` hvb

3.2. Avcbri Gji vKvq vbxq v v tmevi e e v AvQ wK? K. nūv L. bv

hw t_þK_vK Zvntj Avcib wK aiþbi tmev tctq_vKb tmLvþb

K.-----

L.-----

M.-----

Avcbri Avšni K mnþhmZvi Rb AvcbvþK AþbK ab`er`

Sample Questionnaire for intervention area (Boyer Char)

This questionnaire has been prepared for collection of data in order to conduct an academic research titled “Implementation of CDSPP in Boyer Char: an investigation of people’s livelihood” as a requirement of Master in Public Policy and Governance (MPPG) at NSU, information collected will be used only for academic purpose.

General Information:

1. Name of the respondent: 2. Sex: Male Female

3. Age:

4. Occupation: i. Agriculture.....ii. Fishing..... iii. Business.....
iv. Wage Labor.....v. agriculture Labor.....vi. Waiver.....
vii House wife..... viii Others.....

5. Educational background: i. illiterate
ii. Enrollment in primary education but not completed
iii. Primary level of education
iv. Secondary level education

6. Total number of Household members: i. One to four ii. Five to eight iii. More than eight

7. Religion: i. Muslim.....ii. Hindu..... iii. Buddhist.....iv. Christian.....
v. Other (Specify)....

8. Previous place of living:

9. Reason for coming to Boyer Char:

A. Access to land:

1. Do you have land in char (homestead & cultivable)?

if yes what amount of land---

- i. .10 to .49 acre ii. .50 to .99 acre iii. 1 to 1.5 acre iv. More than 1.5 acre

2. Do you have possession of land title/deeds/ dag number? yes no

3. Have you faced problems in land possession/allotment? i. yes ii. no

if yes, how

4. Do you think this land has made any change in your living condition?

Yes No

if yes, how.....

B. Food Security:

1. Which months (seasons) of the last year have you faced crises of foods?

- i. Not at all ii. All the month of the year iii. From April to June iv. From July to September

2. During normal period of the year, how many times have you taken meals i. one meal in a day ii. Two meal iii. Three meal in a day

3. What are the contents of each meal?

- i. Rice with burnt chili and salt ii. Rice with vegetable iii. Rice with (egg/ milk/ mea/ fish/pulse) iv. Other items

4. During crises period of the year, how many times have you taken meals?

- i. One meal in a day ii. Two meals in a day iii. Three meals in a day

5. When you had taken last protein food item—fish/ meat/egg/ pulse/milk with rice in your crisis period of the last year?

- i. Fifteen day interval ii. One month interval iii. More than three months interval. iv. Forgotten when taken last
6. How have you collected food grains during critical period of the year?
- i. Taking loan from NGOs ii. Taking dadon iii. Other means

C. Income and Assets:

1. What is your monthly expenditure and income in average?
2. What are the major sources of your expenditure?
 - i. Food ii. Treatment and health care iii. Cloth iv. Others
3. Can you meet all the expenses in every month?
 - i. Yes ii. No
4. If no, how do you manage the expenditure?
 - i. Taking loan form NGOs ii. Taking dadon iii. Other means
5. In which period of the year or season do you face difficulty in your earnings?
 - i. Not at all
 - ii. All the month of the year
 - iii. From April to June
 - iv. From July to September

D. Vulnerability:

1. What types of crises events have you faced last year? i. Flood ii. Cyclone iii. Erosion iv. Illness of accident of the earning member of the family
2. What are the sources of your drinking water i. Tube well ii. Pond iii. River iv. Other sources
3. What are the sources of water for other purposes and what did you do during crisis period? ... i. Tube well ii. Pond iii. River iv. Other sources
4. What types of health problems have the household members frequently suffered? i Water born diseases ii Fever and cold iii Lung diseases iv Other type of disease
5. What measures have you taken..... i. visit to local quack doctor ii. Tolerate and ignore diseases iii. Visit upazila health center iv. Visit district health centre

E. Project intervention:

1. Have you involved with any NGOs, Groups or community?

- i. Yes ii. No

2. How have you benefitted from these?

- i. ii.....iii.....

3. Have you benefitted coming to this Char?

- i. Yes ii. No if yes then.....from

- i. Land allotment ii. Improved communication iii. Protection from natural disaster

4. Do you think that this has changed your livelihood?

- i. Yes ii. No

if yes then how

- i. Access to land
- ii. Food Security
- iii. Income and Assets
- iv. Reduction of vulnerabilities

Thank you

Sample Questionnaire for control area (Noler Char)

This questionnaire has been prepared for collection of data in order to conduct an academic research titled “Implementation of CDSR in Boyer Char: an investigation of people’s livelihood” as a requirement of Master in Public Policy and Governance (MPPG) at NSU, information collected will be used only for academic purpose.

General Information:

1. Name of the respondent: 2. Sex: Male Female
3. Age:
4. Occupation: i. Agriculture.....ii. Fishing..... iii. Business.....
iv. Wage Labor.....v. agriculture Labor.....vi. Waiver.....
vii House wife..... viii Others.....
5. Educational background: i. illiterate
ii. Enrollment in primary education but not completed
iii. Primary level of education
iv. Secondary level education
6. Total number of Household members: i. One to four ii. Five to eight iii. More than eight
7. Religion: i. Muslim.....ii. Hindu..... iii. Buddhist.....iv. Christian.....
v. Other (Specify)....
8. Previous place of living:
9. Reason for coming to Noler Char:

A. Access to land:

1. Do you have land in char (homestead & cultivable)?
if yes what amount of land---

i. .10 to .49 acre ii. 50 to .99 acre iii. 1 to 1.5 acre iv. More than 1.5 acre

5. Do you have possession of land title/deeds/ dag number? Yes no

6. Have you faced problems in land possession/allotment? i. yes ii. no

if yes, how

7. Do you think this land has made any change in your living condition?

Yes no

If yes, how.....

B. Food Security:

6. Which months (seasons) of the last year have you faced crises of foods?

ii. Not at all ii. All the month of the year iii. From April to June iv. From July to September

7. During normal period of the year, how many times have you taken meals i. one meal in a day ii. Two meal iii. Three meal in a day

8. What are the contents of each meal?

ii. Rice with burnt chili and salt ii. Rice with vegetable iii. Rice with (egg/ milk/ mea/ fish/pulse) iv. Other items

9. During crises period of the year, how many times have you taken meals?

ii. One meal in a day ii. Two meals in a day iii. Three meals in a day

10. When you had taken last protein food item—fish/ meat/egg/ pulse/milk with rice in your crisis period of the last year?

i. Fifteen day interval ii. One month interval iii. More than three months interval. iv. Forgotten when taken last

6. How have you collected food grains during critical period of the year?

i. Taking loan from NGOs ii. Taking dadon iii. Other means

F. Income and Assets:

2. What is your monthly expenditure and income in average?
2. What are the major sources of your expenditure?
 - i. Food ii. Treatment and health care iii. Cloth iv. Others
3. Can you meet all the expenses in every month?
 - i. Yes ii. No
4. If no, how do you manage the expenditure?
 - i. Taking loan form NGOs ii. Taking dadon iii. Other means
5. In which period of the year or season do you face difficulty in your earnings?
 - i. Not at all
 - ii. All the month of the year
 - iii. From April to June
 - iv. From July to September

G. Vulnerability:

6. What types of crises events have you faced last year?
 - i. Flood ii. Cyclone iii. Erosion iv. Illness of accident of the earning member of the family
7. What are the sources of your drinking water
 - i. Tube well ii. Pond iii. River iv. Other sources
8. What are the sources of water for other purposes and what did you do during crisis period? ...
 - i. Tube well ii. Pond iii. River iv. Other sources
9. What types of health problems have the household members frequently suffered?
 - i Water born diseases ii Fever and cold iii Lung diseases iv Other type of disease
10. What measures have you taken.....
 - i visit to local quack doctor ii. Tolerate and ignore diseases iii Visit upazila health center iv Visit district health centre

Thank you

Appendix- C

Demographic profile of the respondents:

Family member and religious background:

Most of the household were found family member in between five to eight person. Muslim was found majority among the respondents a few of them were found Hindu religion of different caste.

Reason for migration in Boyer Char:

About 35 respondents were interviewed. Respondents were mainly found to settle in Boyer Char as 61 percent of them migrated due to river erosion of their previous place of living, 25 percent due to forced acquisition and rest of them due to family dispute and other valid reason.

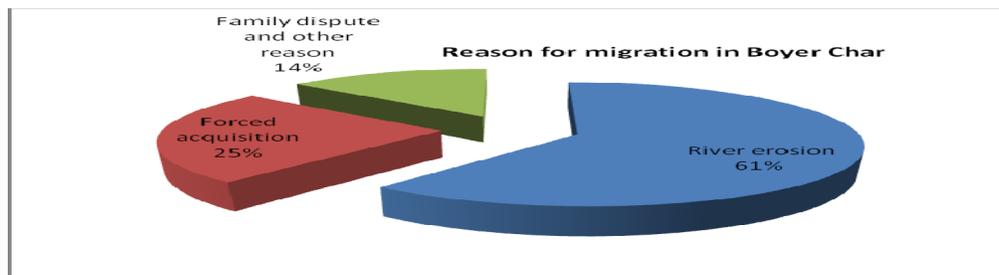


Chart: C1, Reasons for migration to the project intervention area.

Educational background: Maximum of the respondent (67 percent) were found illiterate, around 22 percent found primary enrollment but drop out, 9 percent were primary school passed and a meager 2 percent had secondary school background.

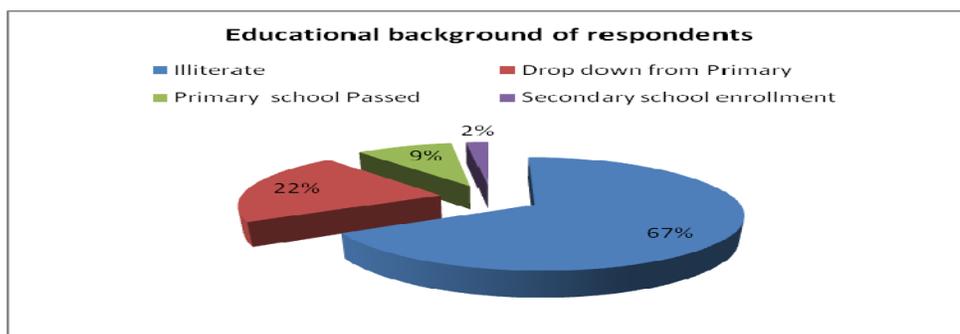


Chart: C2, Educational background of the respondent of project intervention area.

Occupational background: The educational background reflected their occupational status. Most of them were day labor (33 percent), 25 percent were agricultural labor, 23 percent of the respondents

were farmer, 14 percent of the respondents' occupation were poultry and livestock rearing and only 5 percent were engaged in small trading.

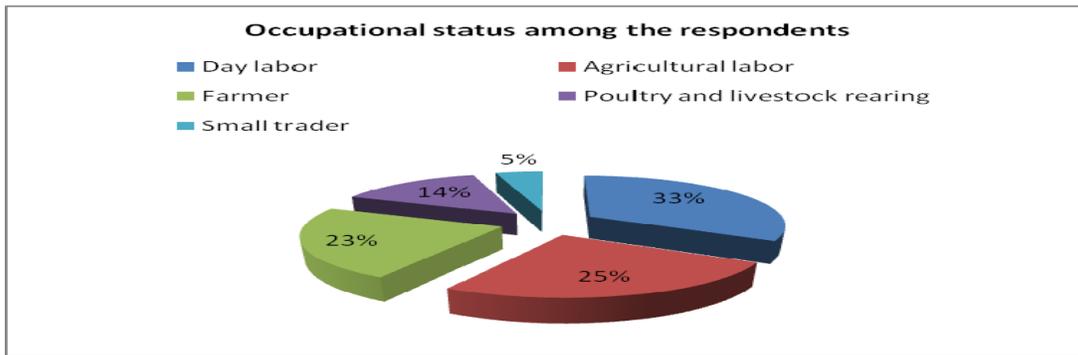


Chart: C3, Occupational background of the respondent of project intervention area.

The economic condition of the respondents in the intervention area was found most of their average monthly income level ranging Tk. 3000-4500, a few of them earned more than Tk. 4500 and rest of the respondents monthly average income below Tk. 3000. Though the situation had slightly improved than the controlled area but not as significant as in respect of national income level. The educational backwardness, resources constraint, frequent occurrence of natural disasters and limited scope of income generating activities might be some factors for their poor earnings.

Appendix- D

Project intervention and aspiration of the respondents from the project:

On the basis of empirical data, from thirty five respondents, it was found that 87 percent of the respondents had benefitted directly or indirectly from the project intervention, rest of them (13 percent) had not benefitted, the reason might be that these groups of respondent were settled after the project or the project failed to reach their targets or aspirations.

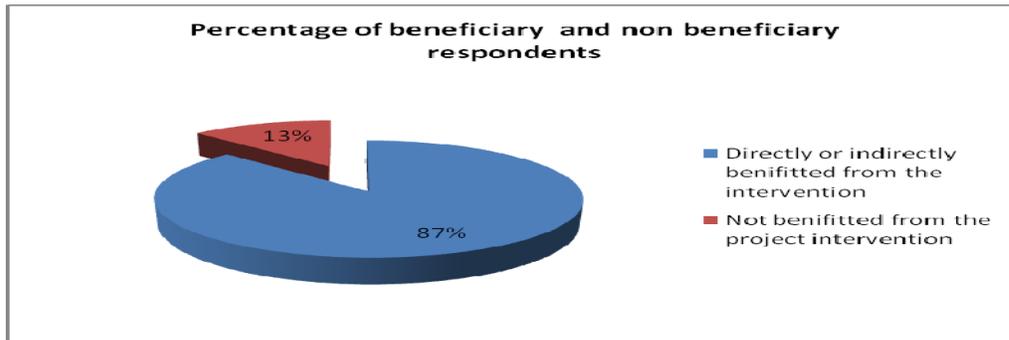


Chart: D1, Picture of beneficiary and non beneficiary group of respondents

From the beneficiary group of respondents 82 percent benefitted from land allocation, 13 percent benefitted from both land and protection against disasters and rest 5 percent benefitted from improved communication system.

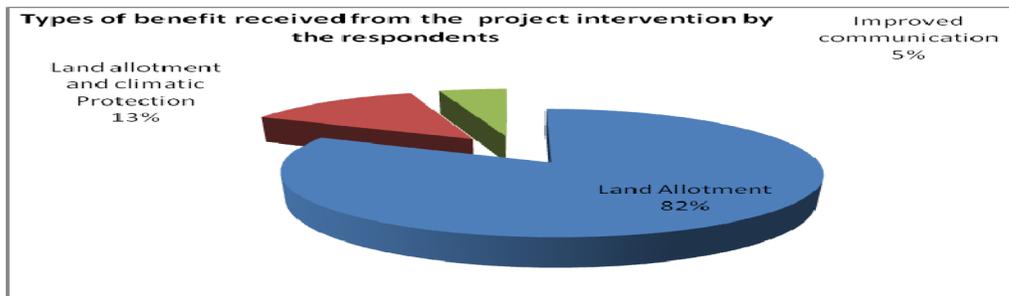


Chart: D2, Respondents received types of benefit from the intervention

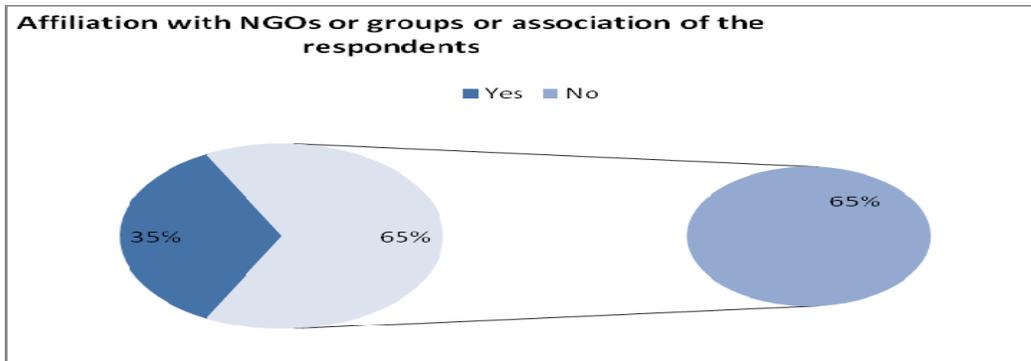


Chart: D3, Respondents' affiliation with NGOs or groups or any associations

About 35 percent of the respondents had affiliation with the local Non Government Organizations (NGOs) or other community groups or association and rest of the 65 percent have no affiliation or connection with any other local organizations or groups or association.

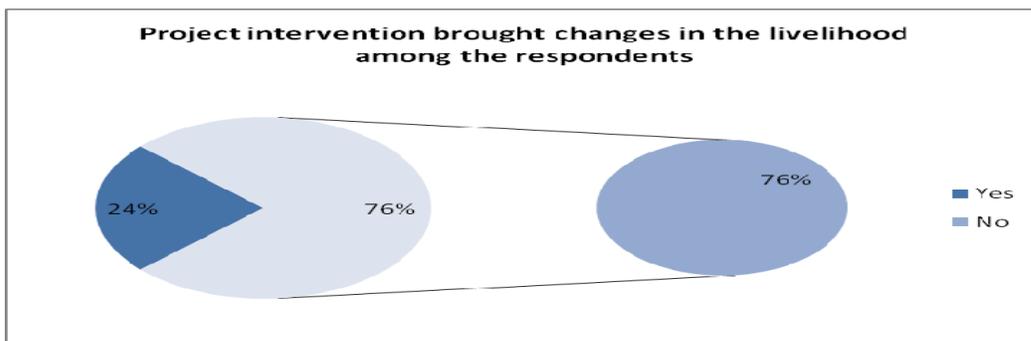


Chart: D4, Respondents' answer to the question of changes in their livelihood from the project intervention.

Whereas in consequence of project intervention, question regarding changes taken place by the intervention, the data showed that 24 percent of the respondents had found their livelihood in a way to change but rest of the 76 percent respondents found no change in their livelihood.

For the question of change in livelihood of the respondents by the project intervention empirical data signifies that most of the respondents were benefitted in different ways, land possession or permanent settlement or improved communication, protection against natural calamities, but a significant portion of them yet not managed to improve their livelihoods. Unproductive use of land resources, absence of employment opportunities, frequent shifting and movement nature, lack of scopes of resources generation and mobilization, absence of basic level skills, technical knowhow, absence of basic facilities like main land might be some of the factors that hinder their path of changing livelihoods.