

# Impact of Transition from Rice Cultivation to Shrimp Culture in Bangladesh: A Study on Khulna Division

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## ABSTRACT

The present study been attempted to identify the impact of transition from rice cultivation to shrimp culture in Bangladesh especially in khulna division. Study looking at the major consequences of shrimp culture in the light of socio-economic framework, looking at the insufficiency and mismanagement of the food systems and also tried to look at the current situation of shirm culture in the khulna division of Bangladesh. This study is exploratory in nature and used factor analysis through case study to determine the impact of transition from rice cultivation to shrimp culture. The study is conducted on some selected shrimp cultivation gher of Khulna division. The study has been conducted both qualitative and quantitative methods and followed interview schedule for collecting the data. Semi-structured questionnaire was used for conducting interview. Study found that most of the shrimp cultivator is not actually landowner, they are acquired the land from the landowners for cultivation and provided some financial benefits to the landowners who were involved with a large variety of flood plain, food habit, has a long tradition of fishing and fish culture. In recent decades, due to increase international demand, shrimp has become one of the most important export oriented products in Bangladesh. But the research look upon die bad impact of shrimp culture on socio-economic conditions in Bangladesh. The government, policy makers and shrimp traders are encouraging shrimp culture without considering impact on social, environmental, cultural, political and many other area of the country. Theoretical implications are drawn and discussed in this paper and providing few suggestions to keep superior socio-economic conditions of the actual landowners by reducing shrimp cultivation in real paddy land.

**Keywords:** Shrimp, Rice, Culture, Impact, Society, Village, Humanity

## 1.0 INTRODUCTION

Bangladesh, our motherland, with all her charms and beauties is very famous for agriculture in the world. Different kinds of rice and fish are produced here for meeting the needs of people. But at present commercially shrimp is cultured in the coastal belt in place of rice cultivation. This commercial shrimp is one of the main sources of foreign exchange of Bangladesh. At present our shrimp cultivators, cultivate shrimp in rural areas extensively and prosperousness economy. Bangladesh has been gradually emerging as an important producer of cultured shrimp and thus helping the fisheries sector to contribute substantially to GDP. The contribution of fisheries to GDP is 6% (compared to 1% in India and Thailand two neighbouring countries). The export earnings from shrimp culture was only 2.9 million U.S dollar in the year 1972-73 which constituted only 1% of total export earnings. While this export earnings was 300 million U.S dollar in the 1990s which was about 10% of the total export earnings of the year (Monzu, 2000:1).

In the last twenty years numbers of gher for shrimp culture have increased amazingly. FAO and UNDP assumed through a presage that 1,29,530 hectare of land will come under shrimp culture in the year 2005 (Karim, 1998:2). But in reality 1,38,000 hectare of land had come under shrimp culture in the year 1994-95. This land account 47% of die total land allotted for fisheries of this land 1,26,000 hectare and 12000 hectare land is used for tiger prawn and lobster production respectively.

Though the country earns a good amount of foreign currency by exporting shrimp, its cultivation on crop land in the South Western region, abandoning the subsistence crops, it has created much adverse impact on coastal environment and on life and livelihood as well. So it is necessary for our policy makers and researchers to know about the problems created by shrimp culture and its probable solution Quit the researcher has tried to present in this study.

## 2.0 LITERATURE REVIEW

Md. Asaduzzaman (1986) discussed the shrimp culture in his study “Coastal Area Development, Environmental Change and Their Socio-Economic Implications in Bangladesh.” He briefly discussed the development of shrimp culture in Bangladesh and the history of shrimp culture is related to the development of coastal embankment. The coastal embankment was constructed to inhibit the intrusion of saline water and to encourage rice farming. Shrimp cultivation turned into a more limited economic activity since about the time of liberation and the export market demand invigorated shrimp farming. In the discussion regarding organization of production, Asaduzzaman pointed out that shrimp farming generally occurs with a crop of rice of salt expending on region and also a single activity. He said when a rotation with rice takes place, shrimp harvesting takes place around July to clear ground for Aman crop.

Asaduzzaman discussed the method of catching shrimp. He said as salinity drops with monsoon, salts are washed out by fresh rain water; or through exchange with, less saline tidal water, farmers in many cases grow a crop of transplanted Aman paddy. But he did not say about the difficulties to cultivate paddy due to shrimp culture. He mentioned that shrimp farming takes place in farms of various sizes. He pointed out some ownership control in the south-western district which are (i) Single or household operation on own land (ii) Single controlled but with hired labor (iii) Many owners (iv) small number of owners (v) shrimp culture basically controlled by outsiders. He said further that shrimp farming takes place without local participation. As a result, tension prevails between the outsiders and the villagers in the shrimp culture area. This point is very important in his study to understand the overall situation of shrimp cultivation. But he did not show that the tension is only for lack of participation of the villagers, but it is for anti-shrimp culture movement by the marginal farmers.

Ehsanul Habib (1999), the sub coordinator and staff lawyers of Bangladesh Environment Lawyer Association BELA, wrote about the legal and administrative aspect of shrimp culture. He quoted from the fish protection and conservation act of 1950 and showed in that act shrimp was described as fresh fish species though the author did not mention what the word ‘fresh fish’ meant. This act was created with method, time and size of fishing embargo declaration. At the same time, the punishment of disobeying of law also included.

Reza Shainsur Rahman and Others carried a study in Khulna (1984), the study was conducted by the organization ADAB and financed by the Board of Fisheries of Sweden (NSFB) and Bay of Bengal Programme (BOBP). The objective of the study was to identify the expansion and development of shrimp production in Khulna and to measure the impacts of shrimp culture in the lives of poor in the context of land ownership and marginal and small owners. To investigate the process of landlessness and rearrangement of wage rate due to shrimp production was also included in the objective.

Anisur Rahman (1999) emphasized mainly of environmental degradation created by shrimp culture. He said, despite being a major export earner for the country, shrimp culture has been under strict scrutiny of environmental activists in south-western Bangladesh. Rahman said that lured by the very attractive rate of return entrepreneurs from urban areas capture the lands by taking lease or sometimes by force from the poor farmers to set up shrimp ghers. But in any cases, the landowners are not paid their lease money which occurs violent conflict between poor land owners and big entrepreneurs of outsiders.

## 3.0 OBJECTIVES OF THE STUDY

The broad objective of the study is to evaluate the socio-economic impact of the transition from rice cultivation to shrimp culture in the khulna division of Bangladesh.

The specific objectives of this study are as follows:

- To identify the reasons that rural people are affected under shrimp culture;
- To determine the economical impact of rural people under shrimp culture;
- To identify way of solution of the problems of rural people affected under shrimp culture.

## 4.0 METHODOLOGY

### 4.1 Research Area

The study was conducted on rural people of a selected village in Khulna.

#### **4.2 Study Population**

Study population mainly the entire household those who migrated their sub profession Rice cultivation to shrimp cultivation in Khulna District.

#### **4.3 Study Unit**

Study unit of this study was each household in those who migrated their sub profession Rice cultivation to shrimp cultivation in Khulna District.

#### **4.4 Sampling**

The universe of the study is very much heterogeneous. As a result, stratified random sampling procedures were followed to and the following steps were maintained. First of all household listing was carried out on the basis of land ownership on the study village. From this list, classification of land ownership was made and men in each class 33.33% households were randomly selected to determine the household sample. The universe comprised of 200 households, has been divided into five land ownership groups, e.g. landless, marginal, small, medium and large land owning households from which a sample of 10 households was selected. Households' heads were taken as respondents.

#### **4.5 Study Instrument**

Non structured questionnaire is designed as the study instrument. Each and every respondent has been considered a case the researcher. A single respondent sometime is under taken as a case, while more than one respondent also under taken as a case by researcher.

#### **4.6 Data Collection Technique**

Researcher has gone to the field with the non-structured questionnaire. In-depth interview is considered as data collection technique.

#### **4.7 Data Analysis**

Collected data were analysed in terms of various qualitative techniques like data reduction, data display and conclusion drawn based on the qualitative data which were presented through various tables, figures etc.

### **5.0 SHRIMP CULTIVATION IN BANGLADESH**

Bangladesh is predominantly an agricultural country and agriculture is the main source of its economy. Agriculture sector absorbs 65% of die labor force. Rice is the principal crop of Bangladesh. Domestic consumption is met by rice. Bangladesh is the fourth largest producer of inland water fish in all over the world. Continuation shrimp culture had been a component of rural income earning activity for centuries. In fiscal 1972-73, Bangladesh exported shrimp worth US\$ 2.9 million, which was equivalent to 1% of the country's total exports. It increased to US\$ 33 million in 1980 and to US\$ 90 million in 1985. Therefore, the culture of shrimp by commercial farming is a development of the period from the mid-1980's.

Though Bangladesh is the third largest produce of rice in the world, it has to import food to meet the domestic shortage. Food production has increased too. But with the growth of population, food production has not increased in the same rate high yielding varieties and irrigation has been used, of course, to meet the shortage of food. Shrimp culture has been taken as an alternative of rice culture.

In the Khulna belt, die coexistence of rice production and aqua-culture growing bagda shrimp was observed from the distant past. (CPD, 1998:16)" But "Commercial Farming of Shrimp as 100% export oriented activity started in Bangladesh in rate 1980s (CPD, 1988:12)" production and export of shrimp culture of shrimp plays an important role in the economic area of Bangladesh. A big boost in production and export of shrimp, however was witnessed in the mid seventies due to exorbitant demand from the USA, Europe, Japan and Some Middle-East countries. Abundant supply of local labor at low-wage is also an important factor for the growth of the industry. The government provides various incentives to the shrimp exporters under the exported growth policies. This includes tax rebate, availability of bank loan, and duty free import of machinery, government land to the shrimp farmers. The EU is the largest importer of Bangladesh shrimp followed by the

USA and Japan, Italy, USA accounted for about 28% of the total shrimp exported, by-Bangladesh in 1995/96. Although the is market by a rising trend in dollar terms between the years 1990/91 and 1995/96, its share is total Bangladesh export declined during same period. The USA Imported 33.73% in 1990/91 and 27.68% in 1995/96 of me total manual shrimp exported by Bangladesh (Bangladesh Frozen Food Exporters Association 1994/1996), Bangladesh however, supplies only about 3% of the total US import. According to Bangladesh Export from Bangladesh constituted 1.18% in 1985 and 2.94% in of the total US important of Shrimp. The EU countries Imported about 43% of the total Bangladesh export in 1995/1996. The import, however, accounted fro about 50% of die total shrimp export by Bangladesh 1990/91. Among the EU countries the UK, Germany, Belgium and Netherlands are the main importers of Bangladesh shrimp. The important by Japan accounted for about 14% of the total Bangladesh Shrimp export in 1990/91 and it declined to 11.28% in 1993/94. But increased to 21.49 in 1994/95 and 25.24% in 1995/96.

Shrimp culture in Bangladesh in concentrated in Khulnu and Chittagong regions. At present about 0.2 million hectare of land is occupied by shrimp culture in the country. About 80% of the total shrimp land is in Khulna region, especially in the district of Khulna, Khulna, Satkhira and Bagerhat, while 20% is in Chittagong region. Besides collecting shrimp from Bay of Bengal, in coastal are of Khulna region, cultivation of Bagda Shrimp began during the last 70s. Primarily shrimp was cultivated in Khulna Sadar, Debhata Kaliganj, Shyamnagor thana under the division Khulna. As shrimp cultivation was profitable, die local people were inspired by this cultivation and cultivate shrimp abandoning of cropland. And inspiring by this cultivation people under the district of Jessore, Khulna, Satkhira, Bagerhat, Pirojpur, Barguna, Potuakhali and Bhola also cultivate shrimp.

## 6.0 BRACKISH WATER SHRIMP FARMING AND ITS IMPACT

Before the construction of coastal embankments in the sixties, brackish water aqua culture of shrimp and finfish was in existence in Khulna district for lay past under a practice locally known as Bheri Fish culture. Under this system, during February to April tidal water carrying juveniles of salt water shrimps and finfish were allowed to enter, in spring tides, through slices of an area enclosed by embankments. The trapped young become harvestable in about four months. After the harvest of shrimp and finfish the land was used for paddy cultivation from July to December.

This harmonious practice of aquaculture and paddy cultivation did not pose any environmental problem. But construction of coastal embankments for increasing agricultural production did not put a stop to brackish water aquaculture. Coastal embankment adversely affected the natural life cycle of many fish and prawns inhabiting the sea and the estuaries. However, opening of a lucrative export market for shrimp in the seventies led to resumption of brackish water aquaculture. Conflicts over land tenure and use might and concern over localized changes in salinity.

## 7.0 RESULTS OF THE STUDY

The researchers show the negative impact of unplanned shrimp culture on cropland. Shrimp culture has created environmental hazards, i.e. loss of biodiversity, loss of soil fertility, decrease of forestry such as homestead forest, agro-forest, deplete of horticulture, decrease of poultry and livestock and many other adverse effects on nature. Moreover, unplanned shrimp culture is creating critical situation in die shrimp culture. For example, dough shrimp culture is economically profitable for the big farmers, it is creating landlessness and the farmers have lost their jobs too. So the socio-economic occupational, cultural, power structural and other changes by shrimp culture demands comparative study in the shrimp culture area. The limited idea and information about the socio-economic and many other impacts of shrimp culture make die problems more critical. So, at present it is very rational to select the problem as an area of study.

### Case One

Azgar has lost his all.

Name : Md. Azgar Sarder

Age : 35 Years

Education : Literate

Azgar dealt in shrimp, lie made huge money by dealing in shrimp. Then he wished to run gher and took lease of 35 bighas of land with cash money. But his gher was attached by virus. As a result he lost seriously. But he was insistent to run the gher in

the hope dial he well get profit later on. But unfortunately he became die worst loser. He was indebted a large amount of money. By selling his motorcycle he was paid some portion of die debt. But did not get rid of indebtedness. He is hard up. Now he is die poor of the protest in die study area.

#### Case Two

Modacher is a day labor now.

Name : Md. Modecher Gazi  
Age : 35 Years  
Education : Class- VIII

Modacher was a gher owner. He was for sometimes, an accountant of a big gher too. He did well. But virus disease rained all die shrimp of his gher for few consecutive years. As a result he became indebted a large amount of money. And to pay loan amount, he has been compelled to lease out his gher. He has no odder source of income now, works as a day labourer now.

#### Case Three

Bashir is now Bashir Shaheb.

Name : Md. Bashir Sorder  
Age : 47 Years  
Education : Class IX

Bashir is now known as Bashir Shaheb. Because he is one of the newly riches, who have made huge money after die introduction of shrimp culture. Bashir ran several ghers from the very beginning and got huge profit with that money he adopted unfair means of black marketing. The Bangladesh-India border in Khulna is a great route of black marketing which is used to import different kinds of goods as with shrimp prawn. Bashir adopted unfair means of dealing in shrimp prawn and sugar for India to Bangladesh. And thus he becomes a billionaire. Now he does not deal in black market. Now he is used to run a hospital, a luxurious hotel and a women college. Now he deal in coal and shrimp prawn fairly. He is now Bashir Shaheb. He has done collaboration with the local administration and political muscle that helps him run business and compete in cultural competition.

#### Case Four

Master is a terror now.

Name : Md. Riazuddin Gazi  
Age : 65 Years  
Education :

Md. Riazudding Gazi was a high school head master. He is known as Master in the study area. He is a big farmer, yet he occupied the land of Md. Rashid Gain forcibly 2 bighas of Rashid gher. But master does not pay off huri or does want to exchange land from another place. Since Rashid Gain is a marginal farmer and has not political muscle, he cannot force master to pay off the hari or exchange the land. Moreover, 50 bighas of khash land is under him. He has encroached the land. The DSR party, who has given DSR by the administration, tried several time to occupy khash land from master. But Master used local terror to protect them. For the last time when the DSR party took their possession in the khash. land. Master borrowed hooligans from the town, who came with arms, and again captured the khash land. In this way the poor farmers are trying to get back their possession, and master is using force and hooligans to capture the land. He is now a terror in the study area.

#### Case Five

Big Farmer has occupied small Farmers' land by force

Name : Shree Monohar Dhali  
Age : 57 Years  
Education : Literature

Shree Monohar Dhali belongs to the minorities' community of the village. Some minorities of the study are facing a huge loss for shrimp culture. Shree Monohar Dhali is a small farmer. But after shrimp culture he couldn't regain his half of the land in his possession. Ziad Sarder from the experiment zone is a big owner of gher. He has captured lands of many small farmers in his gher. Ziad Sarder procrastinates to pay the regular harries or sometimes doesn't pay at all of the 22 decimal captured land of Monohar Dhali. Ziad Sarder is familiar as "Criminal Personality" in the study area. Consequently, every illiterate and weak person fears him. As Monohar Dhali is a minority, his fear is one scale more. As a result, he is perplexed to receive the harries from Ziad Sarder by pressure this caused Monohar Dhali to dispossessed his 15 kathas land.

#### Case Six

Big Farmer has seized small Farmer's land.

Name : Md. Rafiqul Islam  
Age : 39 years.  
Education : Illiterate.

Md. Rafiqul Islam is a small farmer. It is not easy for everyone to make a Gher in a small amount of land, so he works in a Gher as a monthly salary. But the sons of Shukur Ali of the study area have occupied his 7 kathas of land. Being influential, Shukur Ali Gazi and his sons have occupied the pond of Rafiqul Islam. While this case study was going on, Rafiqul Islam came to his home from his working place to rescue his land which had been used for shrimp culture. But it was not possible. But Rafiqul Islam and his four brothers pursued the sons the sons of Shukur Ali Gazi, It made Kamruzzaman, one of the sons of Shukur Ali to hide in his dome due to fear. After that the nephew of Shukur Ali Gazi came to attempt to murder Rafiqul and his brothers with a Daa. However, both the family avoided bloodshed later on.

#### Case Seven

Small peasant has compelled to sell land for not having hari (Lease Money).

Name : Md. Paran Ali Sarder  
Age : 50 years,  
Education : Illiterate

Md. Paran Ali Sarder is a small farmer. The hardship of his family increased due to the advent of shrimp culture. He cannot make gher due to the fact that his land is in the middle of a large gher of Bashir. Bashir does not exchange his land from outside the gher. Moreover, he does not pay hari of Paran Ali. As a result, Paran Ali has sold his 2 bighas of land to a third person who is also influential in the locality. But Paran Ali had to sell the land for a small amount of money. And he has bought another plot one bigha of land outside the gher. Bashir with that money he got by selling the land in Bashir's gher.

#### Case Eight

Price spiral has compelled to sell land.

Name : Md. Abdur Razzaque Sarder

Age : 52 years.

Education : Class- VIII

Md. Abdur Razzaque Sardar is a poor farmer. He had to buy some of his daily necessities during die rice cultivation. His economic condition has fallen m ore after shrimp culture. He has compelled to sell 17 decimal of his land due to the fact tile small gher, he was not running profitable at all. Virus diseases have been the causes of dying of shrimp.

#### Case Nine

No scope of rice cultivation for farmers who want to cultivate it.

Name : Shree Bhambal Dhali

Age : 47 years.

Education : Illiterate

Shree Bhambal Dhali is a marginal peasant. He used to cultivate rice in 2 bighas of his land. But he had to give up his hope of rice cultivation due to saline water. Saline water surrounded his land. As a result crop does not grow with saline weather. Moreover, saline water entered into his land which disallowed rice cultivation forever.

#### Case Ten

Farmer who can not produce rice due to saline water.

Name : Md. Mazed Gazi

Age : 55 years.

Education : Literate

Md. Mazed Gazi is a marginal farmer. He wants to produce rice instead of shrimp. But he has no scope of rice cultivation due to saline water. At the very beginning of shrimp culture, he stood against it. Because he knew the adverse effect of shrimp culture from die experience of neighboring villages. The saline water which surrounded his land intrudes into his land. So he is compelled to culture shrimp. But there is no scope to cultivate rich in this moment.

## 8.0 DISCUSSIONS

Bangladesh, our motherland is teeming with over population about 160 million in an area of about 1,56,000 sq. km. Bangladesh achieved it's independence in 1971. Before 1971 it was known as East Pakistan as a part of Pakistan from 1947 to 1971. Bangladesh border with India to the west and north and India and Myanmar to east. The Bay of Bengal is to the south of it. It has a long coast line of 716 km. The coastal areas of Bangladesh have come under shrimp culture.

Shrimp is a fishery whose importance in Bangladesh relates more to export than to domestic consumption. The emergence of shrimp on the foreign trade of Bangladesh is dramatic. From almost nowhere in die late sixties, shrimp export registered an earning worth Tk. 222 million in 1972-73. Since men, shrimp export increased phenomenally taking advantage of its rising demand in the world market. By 1987-88 its export exceeded Tk. 4,373 million; this represented 85% of the total earning (Tk. 5325) realized from all the fisheries items. The percentage contribution from various fisheries items in die export is quite significant. The shrimp's position in die net export from any commodity is second to jute products. During the financial year 1987-99. 18655 tones of head-off shrimp equivalent to about 30,000 tones of the whole animal were exported.

Shrimp is a commodity product. Though subsistence shrimp was produced in the long past, now a day it is produced commercially. Shrimp brings a lot of foreign exchange. It is one of the few sectors that developed with least government support in the initial stages. But currently the total area of shrimp cultivation in four coastal districts of Khulna, Khulna, Bagerhat and Cox's Bazar is 1,40,000 hectares. Of which 70% is in greater Khulna (Bangladesh Observer, 1999). The contribution of shrimp culture, which

has rapidly grown in the region since the early 1980s, has become a major source of export earnings (Rawshanara, 2002, 47). Although there was a little setback due to devastating floods of 1998, shrimp fetched about Tk. 16 crore or 86% of the export earning from the fisheries sector during the first eight month of 1998-89 fiscal year. (Rawshanara, 2002:47) But shrimp culture is not, always, economically profitable for the rural people. It has much economic adverse effect. The study has tried to show the different dimension of economic impact on the respondents.

### **8.1 Shrimp Exaction and Revenue Collection**

Shrimp is one of the sources of government revenue collection. The revenue collected from this sector is not worthy. Action of big shrimp and subsequent revenue collection from 1991-92 financial year to subsequent financial year is given in the following table. The extraction of big shrimp has declined from 316.51 metric tones in 1991-92 financial year. 307.22 metric tones in 1992-93, 27425 metric tones in 1993-94. In 994-95 financial year, extraction of jig shrimp has increased to 281.83 metric tones but further declines to 272.84 metric tones in 1995-96 financial year.

Revenue collection from big shrimp in 1991-92 fiscal year was 2538534.25 taka which was declined to 2470508 taka in 1992-93, fiscal year. The revenue collection was far her declined to 2206303.90 taka in 1993-94 financial year and in 14994-95 and 1995-96 financial year the revenue was increased to 2230575 taka and 2226614.50 taka respectively.

### **8.2 Social Dimension of Shrimp Culture in The Study Area**

As with various effects, Shrimp Culture has a great impact on society; in fact, Shrimp Culture affects mostly the society. It occurs a social change and social status is reformed. Various social problems create due to die adverse effects of shrimp culture. To say, a new social relation has established in the study area. Many social relations have newly developed and many relations have deteriorated. As a result a new social current has developed due to die culture of shrimp.

### **8.3 Shrimp Culture and Social Change**

Shrimp culture has brought a social change in Paikgacha. In fact, it has become such as an important factor diet it has not only change die landscape of the study area, it has also changed the lives of people of die whole region. The excitement of new source of income brought to people distracted diem from the harm it was doing to die environment but wading a matter of years the began to realize what shrimp farming had done to them. The result is that a large number of poor families have been forced to leave their homes.

A non Government organization (NGO) conducted a study on the impact of commercial shrimp cultivation on die socio-economic and ecological conditions in die coastal districts of Khulna, Satkhira and Bagerhat. They found that the socio-economic and family status of people living outside the shrimp culture areas was higher than that of those jiving in the shrimp cultivation belt.

### **8.4 Shrimp Culture and Cultural Change in Paikgacha Village**

Shrimp culture is responsible for cultural change in the study area. In fact, there is a cultural transformation in shrimp culture. Rice culture developed a way of life and shrimp culture is developing a different way of life of people in the study area. Traditional life cycle is turning into commercial life. As shrimp culture is practiced in terms of market reliance, it is creating a commodity based life system.

### **8.5 Changes in the Environment and Ecological Condition**

Shrimp culture is responsible for many environment and ecological change in the study area. Indeed, many adverse effects have fallen on environment and ecology. Different kinds of indigenous fishes have been extinct. Local species have lost their existence biodiversity has ruined. Environmental degradation has been accelerated. Livestock and poultry have ended. Soil fertility has declined and so many environmental and ecological problems have arisen through shrimp culture. Environment is the aggregate of all the elements of atmosphere hydrosphere and lithosphere. From biotic to large tiling of biosphere fall under environment. Environment is a condition that affect the behavior of people or things. On the other hand, ecology is the relation of plants and living creatures to each other and to their environment. The environment and ecology have changed due to expansion of unplanned shrimp culture in Paikgacha.

### **8.6 Shrimp Culture and the Condition of the Poor in the Study Area**

The adverse effect of shrimp culture is serious to the poor in Paikgacha. Most of the poor are the worst sufferer of various problems that have emerged after the introduction of shrimp culture. Some poor have been unemployed, some have lost their occupation, some have migrated to cities and towns. Some have compelled to lease out their land, some live in hunger and malnutrition. Above all, different kinds of crisis encircle them all the time. As a result, some poor have compelled to adopt unfair way to maintain their families. Theft, begging are two examples of many unfair means that the poor have adopted.

### **8.7 Forced Land Leasing of the Poor**

Poor farmers are compelled to lease out land in the study area. The role of power structure is important in determining the economic choice of the poor landowners following the advent of shrimp cultivation in the area. It has been found in a number of case studies that the rich farmers enjoying political control in the villages employed different strategies to take away land from others and putting into shrimp cultivation. Jiad Sardar is a prospective shrimp cultivator in the area with a political muscle. Under his control there is a number of wetland and subject to shrimp cultivation. In such enclosure there were also the plots of Manohar Dali and Rafiqul Islam. Earlier they used to cultivate rice in their land when the water dried up following the winter. Once the shrimp cultivation started they have been almost compelled to lease out the land of Jiad. They did not have choice as well. Salinity has completely destroyed the capacity of the land to yield rice. At the same time it has not been possible to resist the forced lease as the opponent is far stronger than them.

### **8.8 Price Spirally of Commodity And Its Effects On Poor**

Increased price of the commodity and its effect on the respondents are great. There are a number of implications of the shifting to shrimp cultivation. A dramatic reduction has taken place in rice cultivation. Small peasant depending on die rice yield coming from own tiny kind can no longer go for that. In the absence of subsistence from own plot of land has now to depend on the market, the last few years the price of rice lies continuously increased. Employment opportunity has not increased proportionately. The poor farmers suffered in terms of loss of income. It has been coupled with some other types of alterations. For example, the supply of straws used as raw materials for the construction of houses by the poor peasants have been completely stopped. The alternative in now market with increasing price. The consequence is heavy for the poor. While they frantically try to organize die subsistence from the market they land up on the margin to access other things from the market. Another important loss in the disappearance of cow dung from the villages. The number of cattle heads has also reduced because of the virtual disappearance of the grazing ground following the introduction of shrimp cultivation. Previously cow dung was important fuel for die small owners. Now die peasant have to buy wood or kerosene from die open market adding pressure on their tight economic condition.

### **8.9 Migration of Poor to Outsides in Search for Work**

Some poor people have migrated to towns and cities in search for work. Though die mobility is not high, it can be said badly sufferer from shrimp culture are emigrating to different part of the country. Some people have gone to neighbouring villages, some have migrated to the distant villages and some have gone to the home of their relatives. There are a number of case studies from which we found how people have migrated from the shrimp study village. The case of few participants have provided real scenario of migration from the study area.

### **8.10 Begging, the Poor and Shrimp Culture**

Shrimp culture has compelled somebody to beg alms. Since the income source is limited and expenditure is much clue to die increased price of commodity, some poor people adopt act of begging. In spite of having knowledge that begging is not welcomed and badly taken, some fellows beg alms at present. Few participants have provided a clear scenario of begging die study village.

## **9.0 CONCLUSION**

In fine, we can see that both rice cultivation and shrimp cultivation have their respective impacts upon the people of the study village of Paikgacha. The dramatic introduction of shrimp culture in the study area has changed many tiling. The medium households, above all, have been the worst losers in the shrimp culture while they were the most gainer in rice cultivation. But there is a view that the landless and marginal households are more losers in shrimp culture. A very small portion of the respondents are becoming the best beneficiaries of shrimp culture. But the economic gap among the small, marginal and landless households is decreasing. All the people are market reliant. So die study area is turning into a capitalistic society. There is a class of new bourgeoisie who controls the whole market of shrimp.

## 10.0 RECOMMENDATIONS

In light of the study, the researcher tends to recommend for following things:

1. The first thing is to recommend that the government should think over whether rice cultivation can be restored in the study area or the following recommendation should be considered.
2. Government should impose some restrictions to have control over shrimp culture. Since it is too much harmful to the ecology and environment of the study area, semi-intensive shrimp culture may be useful to protect the ecology and environment.
3. The small, marginal and landless households are not benefited by die drastic introduction of shrimp culture as they cannot invest properly due to lack of sufficient money. Failing to be benefited, the small, marginal and landless households are losing their lands. That is why government should provide shrimp loan for them to help them survive in the area.
4. Government should take some stern step to dissolve violence occurred due to shrimp culture as it is viewed that the influential want to capture whole shrimp market imposing the anarchy on the relatively weaker ones.
5. The area where rice cultivation has been shifted to shrimp culture should conduct a relative study on rice cultivation and shrimp culture. So that they can present whether shrimp cultivation is more useful than that of rice cultivation. And government should provide incentive and necessary support to provoke the researchers in this regard.
6. Finally, government should have a shrimp policy which would be helpful and should be followed for further development of shrimp culture.

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