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**Seasonal Migration of Labor in the Autumn Lean Period:
Evidence from Kurigram District, Bangladesh**

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ABSTRACT

Seasonal migration of labor in the autumn lean period is an important livelihood strategy for a large number of poor people in Northern Bangladesh. The nature of such migration differs from that of permanent internal migration in many respects. People move for a short time period in the lean season because they are confronted by limited opportunities to maintain their current living conditions if they stay home during the months of economic hardship in October-November. The present study intends to identify the characteristics of the seasonal migrants and to quantify the effects of the factors influencing such migration decision, based on the evidences gained from Kurigram, one of the most poverty-stricken districts of the country. Based on the *Human Capital Approach to Migration*, the present study looks at migration behavior at the individual level. By using a binary response econometric model, the study finds that economic factors, ecological vulnerability and personal characteristics of the individuals have profound effects on the seasonal migration decision.

Key Words: seasonal migration, livelihood strategy, autumn lean period.

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I. INTRODUCTION

Seasonal migration of labor in the autumn lean period is an important livelihood strategy for a large number of poor people in Northern Bangladesh. The present study intends to identify the characteristics of the seasonal migrants and to quantify the effects of the factors influencing the migration decision during the autumn lean period¹ based on the evidences gained from Kurigram, one of the most poverty-stricken districts of the country.

The economy of this region is based on agriculture. Bleak flourishing of manufacturing and other non-farm sectors characterize the absence of labor diversification. About 46% of the total labor force is involved in agriculture, and more than two third of them (29.5% of the total population) are agricultural day laborers. The agricultural sector is characterized by lack of crop diversification. In more than 80% of the farms only one (*aman* paddy) or two crops (*aman* and *boro* paddy) are produced annually (Table 1). Every year, after the plantation of *aman* in September-October farmers have very little work to do in these farms. As a result, a large number of agricultural workers become jobless. This seasonal unemployment in agriculture causes excess supply of unskilled or semi skilled workers in the non-agricultural sector. It is evident that even in the normal times the real wage remains almost 50% lower in Greater Rangpur including Kurigram district than any other part of the country (Monthly Statistical Bulletin, BBS, July 2003). Seasonal unemployment in agriculture further aggravates this situation, which eventually weighs down the real wage of all the workers. Hoarding of crops in the normal time and selling them in the lean period at a high price is a common practice among the well-offs in this region. This also reduces the real wage of the workers in the lean period. As a result, it becomes very difficult to maintain the current living standards in the village and a large number of people who are able and conform to some characteristics, decide to migrate temporarily away from the village.

The nature of such seasonal migration differs from that of permanent internal migration in many respects. People move for a short time period in the lean season because they are confronted by limited opportunities to maintain their current living conditions if they stay home during the months of *monga*. The migrants prefer temporary mobility to a permanent move because it offers a chance to combine a village based existence with urban opportunities. In the face of increasing unemployment in the urban formal sector and lack of job security in the urban informal sector, many people find it worthwhile to keep rural options open, because it helps them in spreading risk. In most cases, seasonal migrants move without their families since supporting a family in the village is cheaper. The existence of family in the village provides an incentive to come back after a short stay in the town. But the most important factor, which leads to a temporary move rather than a permanent one, is the reversal of the urban-rural wage differential as the *aman* harvest begins in December.

¹ Rural life of Bangladesh very much evolves around the agricultural cycle and our study area is not an exception. As a consequence of this cycle, two major seasonal deficits occur, one in late September to early November and the other is in late March to early May. With the widespread expansion of *boro* cultivation, incidence of the early summer lean period has significantly declined. However, the autumn lean season coming after the plantation of *aman* crop still affects nearly all parts of the country, specially the northern part of Bangladesh. In local terms, this lean season is called *Monga* or *Mora Karthik* (Rahman and Hossain, 1991).

A good number of studies have been conducted to analyze the internal migration pattern in Bangladesh. But this study is unique in the sense that no significant initiative has yet been taken to quantify the factors affecting seasonal migration decision in the autumn lean period. Seasonal migration of labor in the autumn lean period has significant characteristics, which are different from all other patterns of internal migration. Hence, studies analyzing such migration patterns will enrich the existing literature in this field. Secondly, it clearly emphasizes and brings out the fact that poverty has both seasonal and regional dimensions in Bangladesh. So, the agencies working towards eliminating poverty could find new directions from the study. The study is organized as follows: after this introduction, section II presents a literature review on internal migration in Bangladesh. In section III we present a model to capture the effects of the factors influencing the seasonal migration decision. In section IV we discuss about the operation of the model and the data sources. Section V presents the hypotheses of the study. Then section VI summarizes the empirical findings. Finally, section VII identifies some significant characteristics of the seasonal migrants and concludes the study.

II. LITERATURE REVIEW

A good number of studies have been conducted to analyze the internal migration behavior of a population. The push-pull model² is one of the most popular models in explaining the internal migration behavior in developing countries. While the push factors are predominant at the point of origin, the pull factors are operative at the place of destination. Push factors are mainly poverty-led such as landlessness, shortage of year round employment, low wage rates, ecological vulnerability etc. The pull factors, on the other hand, include perceived job opportunities, expected higher wages in the urban centers, civic amenities, 'bright city lights' etc. The neoclassical economists considered rural-urban migration as a desirable process. According to the 'Dual Labor Market Theory' of Lewis (1954) and Fei and Ranis (1961), marginal productivity of labor in the rural sector is almost zero because of the existence of surplus labor. In the urban sector, on the other hand, industrialization creates demand for labor, which is met through the supply of cheap labor from the rural agrarian sector. However, the neoclassical theory of rural-urban migration has been criticized on the ground that urban unemployment is already very high in the developing countries and the flow of rural-urban migration merely aggravates this problem. Growth of urban population in these countries is not associated with industrialization, and the urbanization process can best be described as the 'ruralization' of the urban centers (Barkat and Akther, 2001). The Todaro model (1969) has explained the paradox of increased rural-urban migration despite rising urban unemployment. This model asserts that people intend to move when their expected earnings (not actual) from urban employment exceed the actual earnings from rural settings. The expected urban wage is, however, inversely related to the probability of finding an urban job.

² Lee E. S. (1966) pioneered the push-pull theory. But the essence of this theory was defined by Ravenstein (1885, 1889) in his "Laws of Migration".

Table 1: Demographic and Economic Context of the Study Area

	Ulipur	Sadar	Chilmari	Rajarhat
Population	345205	217311	100516	158648
Male (%)	50%	51.01%	49.98%	50.52%
Female (%)	50%	48.99%	50.02%	49.48%
Main Occupation (%)				
Agriculture	45.57%	34.81%	42.15%	45.01%
Commerce	8.51%	10.91%	8.64%	6.05%
Service	4.17%	8.24%	5.06%	2.98%
		Transport 3.21%	fishing 2.01%	
Others	10.71%	12.64%	11.30%	9.55%
Cultivable land	29542.7 hectares	18300.28 hectares	12371.51 hectares	29158.24 hectares
single crop	18%	22.93%	12.38%	30%
double crop	60%	62.93%	72.37%	55%
treble crop	22%	14.14%	15.25%	15%
cultivable land under irrigation	85%	31.72%		87%
Fallow land		553 hectares	151.76 hectares	3278.83 hectares
Land control				
landless	63.70%	30.00%	60%	20%
small	24.50%	28.00%	25%	25%
intermediate	6.90%	35.00%	10%	40%
Rich	4.90%	7.00%	5%	15%
Literacy rate	23.90%	32.10%	34.10%	27.10%
male	31.30%	34.11%	44.80%	53.30%
female	16.40%	30.90%	25.10%	18.70%

Source: Banglapedia, The National encyclopedia of Bangladesh. 1st Edition, 2004.

There are a handful of studies describing the internal migration pattern of the Bangladesh population. Chaudhury (1978), Khan (1982), Huq-Hussain (1996), Begum (1999), Hossain (2001), Barkat and Akther, (2001), Afsar (1999, 2003, and 2005), Kuhn (2001, 2004), Islam (2003) and Skinner and Siddique (2005) are only a few to name. In an early study, Chaudhury (1978) tried to identify the factors affecting rural out-migration and to assess its economic consequences. Based on data collected from four thanas of Mymensingh district he argued that

age, sex, education, occupation, wealth, land ownership and irrigation facilities have profound effects on migration intentions. Regarding the nature of migration, the study asserts that migrants originating from rich families have higher education and they tend to travel a long distance and migrate for a long time. Based on the pattern of remittance usage, the study argues that the rich migrant families largely reap the benefit from migration but it also helps the poorest families to overcome hardcore poverty. Based on national level data, Khan (1982) argued that disparities in socio-economic opportunities between urban and rural areas are the major factors for the high rates of internal migration in Bangladesh. The primary concern of Huq-Hussain's study (1996) has been to investigate the process of female migration and their adjustment and adaptation to the slums of Dhaka City. Based on interview of the migrant slum dwellers, she reached some interesting conclusions. It appears from her study that a higher proportion of the migrants come from nuclear families. Most of the respondents showed their preference for small families. This view has been developed as a result of both urban exposure and economic crisis. Many widowed or divorced/separated women migrate to the city because they no longer want to be burdens on their parents or husband's family. This indicates a change in female's attitude towards family, life as well as to the social norms. The female migrants experience acute housing problems as soon as they arrive in Dhaka. They find shelter in highly congested areas of the city, which have very little floor space and lack basic utilities. Most of the female migrants received assistance from their relatives and friends for accommodations.

Begum (1999) attempted to find out the relationship between the expectations of the migrants and the availability of employment, housing, education and health care facilities in Dhaka City. The study found varying degrees and kinds of expectations between the slum and the pavement dwellers of Dhaka city. Both the slum and pavement dwellers were disappointed with the type of job, housing arrangements and health care facilities. Presence of relatives and friends in the city influenced the expectations of the migrants. But most of the respondents reported that they had to face problems despite presence of kinsmen. Hossain (2001) studied the selectivity and the factors active for migration based on data collected from four villages of Comilla district. It was evident from his study that poverty, job searching and family influence were the main push factors for out migration, while better opportunity, prior migration experience and availability of job were the main pull factors behind migration. Education and occupation at the place of origin are significantly related to the push factors. The multivariate logistic regression analysis used in this study suggests that education of the household, occupation, agricultural land ownership and the number of male members in the family – all significantly determine the risk factor for rural out migration. Barkat and Akther, (2001) examined the urbanizing phenomenon of the country. They described the ongoing process of urbanization as "*Slummization*" or "*Ruralization*" of the urban centers. The main source of a mushrooming urban population in Bangladesh is the flow of rural-urban migration. Rural-urban migration in Bangladesh is mainly driven by poverty-led push factors. Usually the poor villagers do not have adequate skill to serve in the urban industrial or service sector. So, they find employment in the informal sector, where the workers are paid less and where there is no job security. These migrants find shelter in the urban slums and squatter settlements, which lack basic utility services like electricity, water, schooling and medical service. The authors argued that it is necessary to create employment opportunities in the rural areas to minimize the flow of migration.

Islam (2003) reexamined the relationships among internal migration, urbanization and development. In this study it is argued that though development is a macro concept, its ultimate goal is to improve the quality of life at the individual level. The study argues that though internal migration has increased the absolute number of poor in urban centers, it has also improved the living standards of a large number of poor people in rural Bangladesh. Kuhn (2004) investigated the heterogeneity in rural-urban migration by adult males in Matlab Thana of Comilla district from 1983 to 1991. The study categorized migration decision into three types: Individual migration, migration with family and no migration. It revealed the fact that family migration is more likely among older men and men from landless households. Migration propensity is higher in flood affected years. It also demonstrates that households with significant resources can make the best uses of migration. In a comprehensive study, Afsar (2003) presented the patterns and trends of internal migration in Bangladesh, the profile of the migrants, labor market conditions and key problems of the migrants, consequences of migration including the role of remittances and the poverty-migration nexus. In a recent study on internal migration in Bangladesh, Afsar (2005) re-examined the poverty-migration nexus. The study found mutual interdependence between two variables: on the one hand, poverty is a cause of internal migration and on the other hand, internal migration contributes to poverty reduction. The study also suggested some policy implications to reduce the negative impacts of internal migration.

III. SEASONAL MIGRATION OF LABOUR IN THE AUTUMN LEAN PERIOD: THE MODEL

Following the Human Capital Approach to migration, we focus on migration behavior at the individual level. Following the work of Perloff, Lynch and Gabard (1998), we hypothesize that the seasonal migration decision of a worker depends on the expected costs and benefits of a move. A worker will migrate only if his/her expected benefit from moving exceeds the expected costs of moving. The pattern of seasonal migration in the lean period differs from the other types of mobility in normal time, and the seasonal migrants prefer temporary mobility to a permanent move away from the village. Thus, for the seasonal migrants, $B_L - C_L > 0$ and $B_N - C_N \leq 0$. Here B_L and C_L are the benefits and costs of moving in the lean period and B_N and C_N are the benefits and costs of moving in the normal period. We assume that the costs of migration in the normal time are greater than the costs of migration in the lean period. This assumption is valid on the ground that, during the lean period, when job opportunity shrinks, opportunity cost of leaving present employment is very low. The benefits from moving, however, depend on the expected earnings from staying and moving, that is, $B_L = E_{ML} - E_{SL}$ and $B_N = E_{MN} - E_{SN}$, where E stands for expected earnings, and subscripts M stands for moving, S for staying, N for normal period and L for lean period. Since there is no significant seasonal variation in the urban job market, we assume that the expected earnings from moving in the normal time and that in the lean period are the same. Together these assumptions imply that, people migrate seasonally because expected earnings from staying in the village fall drastically in the lean period of the year.

The benefits and costs of migration depend on several factors. In this study we hypothesize that there are three major determinants of the benefits and costs of such migration: 1) economic factors, 2) ecological vulnerability and 3) personal characteristics of the individuals. As our early discussion suggests, the decision to migrate temporarily in the lean period is not induced by the urban pull factors. Rather poverty-led factors, such as low income in the lean period, shortage of

year round employment, limited land ownership, and ecological vulnerability push the villagers to the urban centers. Factors like NGO membership and access to the formal credit market are hypothesized as affecting the migration decision. We assume that individual characteristics such as age, sex, marital status, education, occupation, migration experience and kinship at the place of destination also have profound effects on seasonal migration decision.

Expected earnings from moving in the autumn lean period depend on several observable and unobservable factors. It is measured as:

$$E_{ML} = \alpha_M X + U_M \quad \dots \quad (1)$$

Here X is the vector of observable factors affecting E_{ML} , which consists of economic factors, ecological factors and personal characteristics as mentioned above. U_M is the disturbance term that captures the effects of the unobservable factors. α_M measures the change in expected earnings followed by a one-unit change in the respective observable factor. Similarly, the expected earning from staying in the village is measured as:

$$E_{SL} = \alpha_S X + U_S \quad \dots \quad (2)$$

Here U_S is the disturbance term that captures the effects of the unobservable factors affecting E_{SL} . α_S measures the change in expected earning followed by a one-unit change in the respective observable factor. Finally, the cost of seasonal migration is measured as:

$$C = \alpha_C X + \varepsilon \quad \dots \quad (3)$$

Here ε is the error term, which captures the effect of the relevant unobservable factors. If the difference between the expected costs and benefits from seasonal migration is positive, then the worker migrates in the lean period ($M=1$); otherwise, the worker stays in the village ($M=0$).

$$M = 1 \text{ if } B_L > C_L$$

$$\begin{aligned} &\Rightarrow (\alpha_M X + U_M) - (\alpha_S X + U_S) - (\alpha_C X + \varepsilon) > 0 \\ &\Rightarrow (\alpha_M X - \alpha_S X - \alpha_C X) + (U_M - U_S - \varepsilon) > 0 \\ &\Rightarrow \beta X + w > 0 \quad \text{and,} \end{aligned}$$

$$M = 0 \text{ if } B_L \leq C_L$$

$$\begin{aligned} &\Rightarrow (\alpha_M X + U_M) - (\alpha_S X + U_S) - (\alpha_C X) + \varepsilon > 0 \\ &\Rightarrow (\alpha_M X - \alpha_S X - \alpha_C X) + (U_M - U_S - \varepsilon) > 0 \\ &\Rightarrow \beta X + w \leq 0 \quad \dots \quad (4). \end{aligned}$$

Assuming that the disturbance terms U_M , U_S and ε are jointly normally distributed, the behavior of the dichotomous dependent variable, M described in equation (4) can be estimated by using a binary qualitative response model. The binary-choice model of this study assumes that individuals are faced with a choice between two alternative intentions, whether to move or to stay and the choice they make depends upon their economic and demographic characteristics. To capture the behavior of such variables one must choose a suitable *cumulative distribution function (CDF)*. The two commonly used CDFs are the *logistic* and the *normal*, the former

giving rise to the logit model and the latter to the probit model. In the present study both the models have been applied to test the seasonal migration behavior.

Let us assume that the probability that a worker will migrate in the autumn lean period is given by P and the probability that the worker will not migrate by $1-P$. Then in the logit model is given by the following equation:

$$\begin{aligned} L &= \ln (P / 1-P) \\ &= \ln [(1+e^Z)/(1+e^{-Z})] \\ \text{where, } Z &= \beta X \dots \dots (5), \end{aligned}$$

X is the vector of all the factors affecting the cost and benefit and there by the decision to migrate. $P / 1-P$ in equation (5) are the odds ratio in favor of decision to migrate- the ratio of the probability that a worker will migrate to the probability that s/he will not. The maximum likelihood estimate of the coefficients of the logit model represents the change in the odds ratio in favor of a decision to migrate. Whereas, the rate of change of probability to migrate due to a change in the explanatory variables will be measured as: $\beta^*(1-P) P$, where β^* is the estimated parameter.

In the probit model, we assume that a worker's migration decision depends on an unobservable index I , in such a way that the larger the value of the index, the greater the probability that a worker will migrate. In this regard, a threshold level of the index, I^* is to be determined such that if I exceeds I^* , the worker will migrate; otherwise, he/she will not. It should be, however, mentioned here that, neither the index nor its threshold level is observable. But if we assume that it is normally distributed, then we can estimate the parameter coefficients from the regression line. In probit model, the change in probability to migrate can be estimated by $\beta\phi(M)$, where β is the slope coefficient and $\phi(M)$ is the density function of the standard normal variable M , used in the regression model.

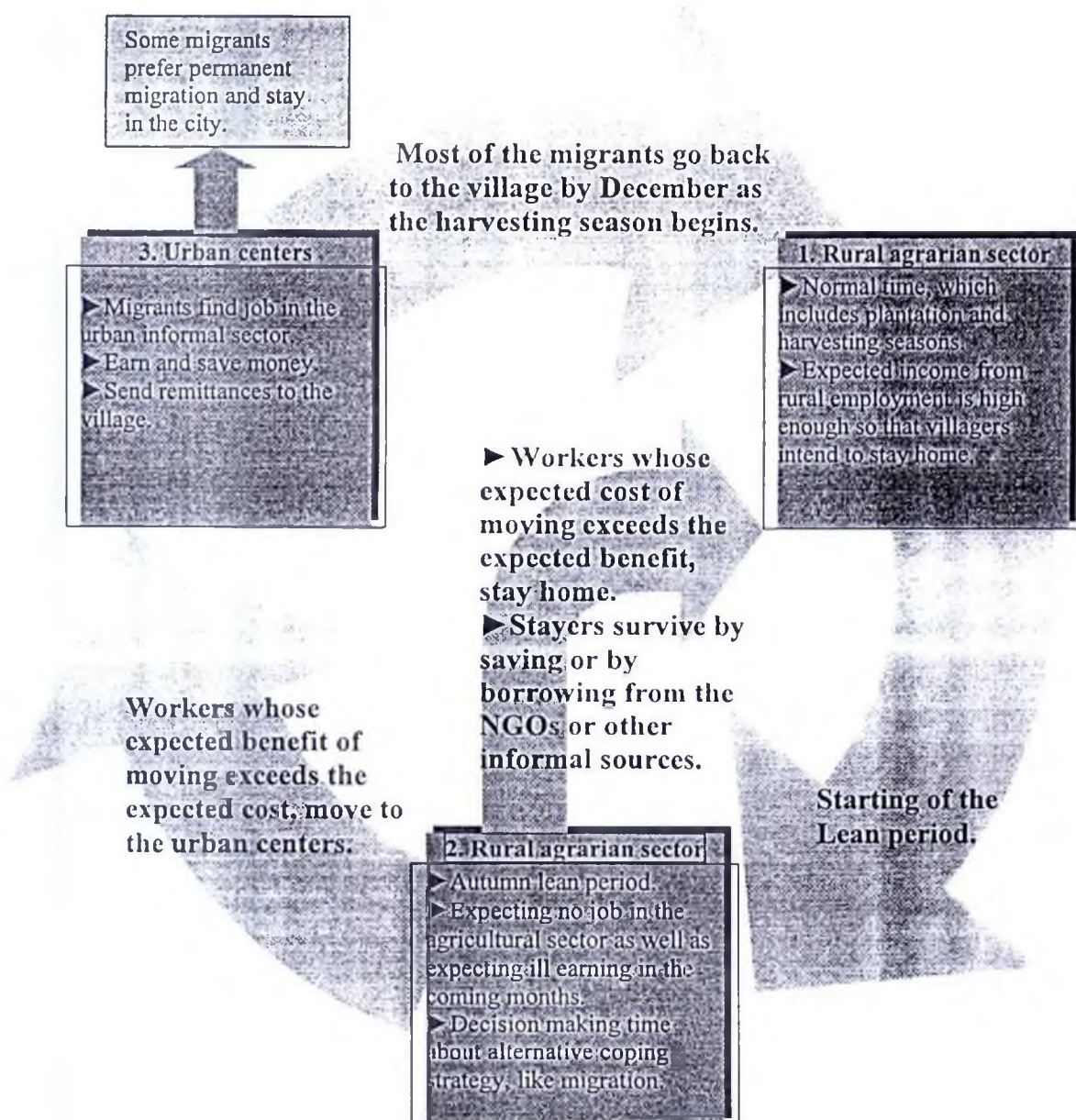


Figure 1: Schematic diagram of seasonal migration in the autumn lean period

IV: OPERATION OF THE MODEL AND DATA SOURCES

The dependent variable in this study is migration decision in the autumn lean period. It is a dichotomous variable, having a value of one if the individual migrated in one of the last two lean seasons and zero otherwise. Of the two hundred and ninety three respondents, 37 percent were identified as migrants. The independent variables were categorized into three groups: variables

representing economic factors, ecological vulnerabilities and personal characteristics. The measure of income in lean period in this study is the actual earning of the respondent in the lean period if they stay in village. The average lean period-income of the respondents is thirty one taka per day, whereas the average normal period-income is more than 68 taka per day. Thus the average income differential is more than thirty seven taka per day. The variable seasonal unemployment is a dichotomous variable. A worker reported to remain unemployed during most of the lean season is assigned a value of one. Otherwise, he/she is assigned a value of zero. In the present sample 61 percent of the respondents reported that they remained unemployed during most of the lean season in the year of migration decision. A simple dummy variable is introduced to measure land ownership. A worker is assigned a value of one if his/her family owns any cultivable land irrespective of the size of land. Otherwise, he/she is assigned a value of zero. 42.3 percent of the respondents reported that they are landless, while the average landholding was found to be 20.9 decimal in the sample. 46 percent of the land owners own less than 30 decimals of cultivable land, 39 percent own more than 30 but less than 100 decimals of land. Only 15 percent of the landowners have more than 100 decimals land. NGO-membership is also measured by a dummy variable, which is coded as one for the members and zero otherwise. Only 19 percent of the respondents were members of the NGOs.

River erosion and flooding are the two major natural calamities in the study area and to measure both of these factors, dummy variables have been used. For river erosion, an individual has a value of one if his/her family ever experienced forced displacement by river erosion. In the present sample, 59.7 of the respondents faced such experience in their lives. The dummy variable for flood equals one if the respondent faced flood in the year of migration, and zero otherwise. 48 percent of the respondents reported to be flood victim in the last two years.

In this study age is coded as one if the respondent lies in the age group of 20-40 and zero otherwise. 74 percent of the respondents were from this age. Sex is coded as one if the respondent is male and zero if she is female. More males than females were interviewed (74.3 percent versus 25.7 percent). Marital status was coded as one for those who are married and zero otherwise. 68.3 percent of the respondents reported to be married at the time of the survey. The occupation variable was divided into two broad categories rather than fine distinctions. According to the hypothesis, farmers were assigned a value of one and zero otherwise. The occupational composition of the respondents is as follows: 45.7 percent of the respondents are involved in agriculture and the rest are non-farm workers like fishermen, potters, petty traders, land leasers, rickshaw-pullers etc. Two measures of the variable, education were introduced. Two dummy variables were used to capture information on primary education and secondary education. An individual having the desired education level was given a value of one and zero otherwise. In the present sample, 54 percent of the respondents have primary education and 29.7 percent have secondary education. Migration experience was coded as one if the respondent reported to have prior migration experience and zero otherwise. 62 percent of the respondents reported to have prior migration experience. Kinship is coded as one if the respondent reported to have friends or relatives at the place of destination and zero otherwise. 51 percent of the respondents had kinsmen at the urban centers at the time of survey.

The data of this study was collected from a cross-sectional survey at the place of origin. The survey was conducted in January 2006 by the Economics and Social Sciences Research Group

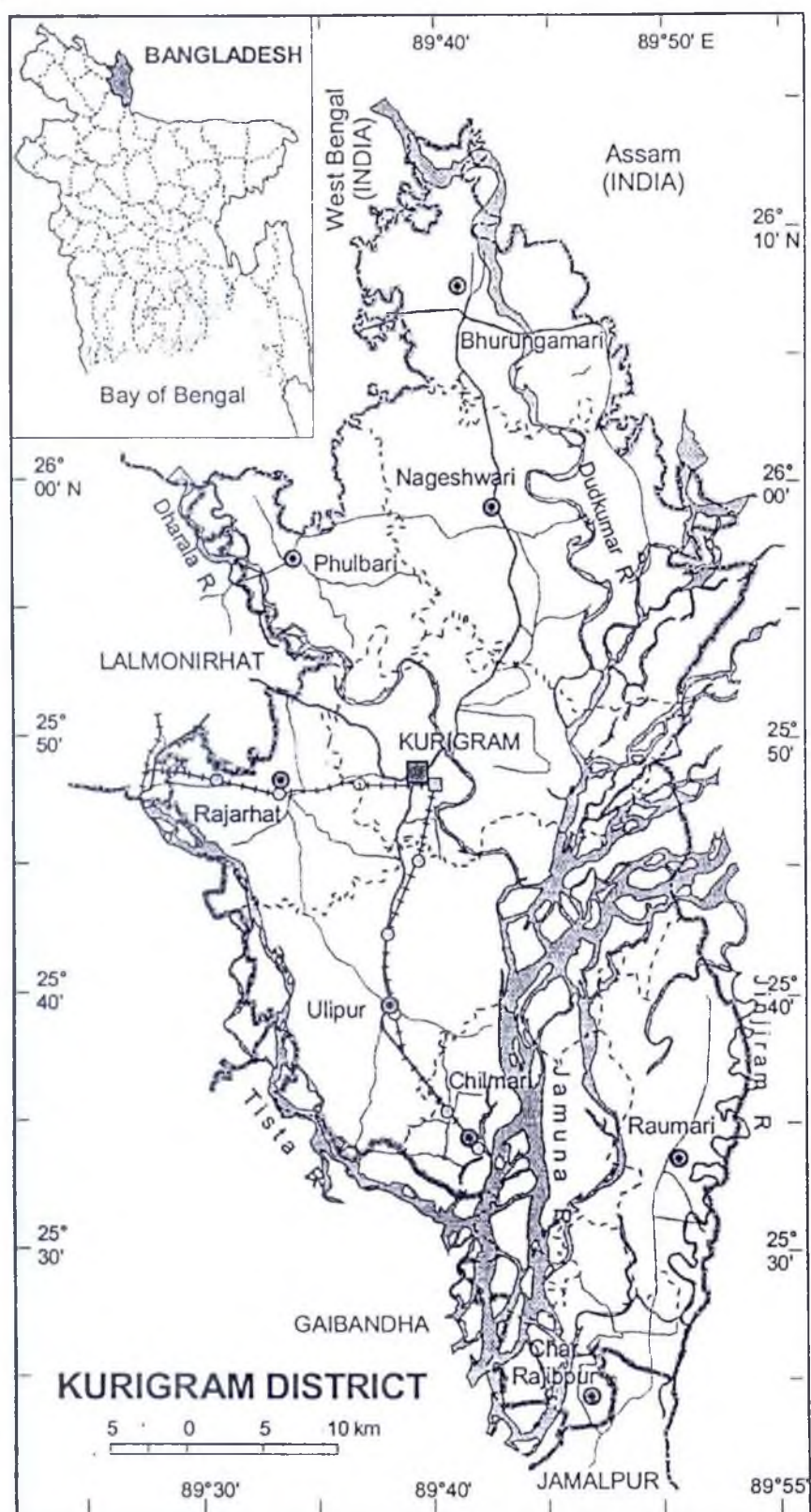
(ESSRG) of BRAC University. The study area consisted of Chilmari, Ulipur, Rajarhaat and Kurigram Sadar thanas under the Kurigram district. The sample consisted of 293 individuals. Kurigram district has a total population of 1,782,277 of which 49.62% are male and 50.93% are female. Above 90% of the population are Muslim. Literacy rate is 22.3% on an average. The four thanas, covered by the survey consist of 37.02% of the total population of the district. The survey covered 17 villages from the four thanas: four from Chilmari, three from Rajarhat, four from Ulipur and six from the Sadar thana. The four thanas were selected to capture heterogeneity in income, communication facilities and catastrophic factors. People of Ulipur and Chilmari were relatively poor but those of Rajarhaat were relatively rich. Kurigram Sadar and Rajarhat have better road transport facilities compared to Chilmari, and Ulipur. So the mobility intensity is high in this area. We have also covered a *char* area in Kurigram Sadar to capture the special characteristics of *char* livelihood regarding the migration decision. Among the four thanas, Rajarhaat suffer less due to natural catastrophes. On the other hand, Chilmari is worst affected by both flood and river erosion. Flood every year devastates Ulipur but river erosion is rare. The *char* area of Kurigram Sadar is affected by river erosion and flood almost every year. The Kurigram town was also affected by Dharla river erosion several times.

The questionnaire for the cross-sectional survey was constructed after several revisions and a pretest with 30 respondents in Chilmari and Ulipur. The questionnaire consisted of 11 sections. It was designed to collect individual information on migration decision and the factors influencing it. Starting from general information like age, occupation, average income and the number of dependents, the questionnaire went on to include land usage, occupation at destination if migrated, NGO membership and landownership. The questionnaire also aimed at collecting information on the nature and extent of starvation throughout the year, those on natural disasters, death of earning members and sudden damage of crop or livestock.

Table 2: Operational Definitions of the Variables

Variable	Description
Migration Decision	A dummy variable that equals one if the individual migrated in one of the last two lean seasons and zero otherwise.
Income in the Lean Period	Actual earning of the respondent in the lean period if they stay in the village.
Seasonal Unemployment	A dummy variable that equals one if the worker remains unemployed during most of the lean season, zero otherwise.
Land ownership	A dummy variable that equals one if the respondent's family owns any cultivable land irrespective of the size of land, zero otherwise.
Membership of NGO	A dummy variable, which is coded as one for the members, zero otherwise.

River Erosion	A dummy variable, such that an individual has a value of one if his/her family ever experienced forced displacement by river erosion, zero otherwise.
Flood	A dummy variable that equals one if the respondent faced flood in the year of migration, and zero otherwise.
Age	A dummy variable coded as one if the respondent lies in the age group of 20-40, zero otherwise.
Sex	Sex is coded as one if the respondent is male and zero if she is female.
Marital Status	A dummy variable, coded as one for those who are married and zero otherwise
Primary Education	A dummy variable, coded as one for those who have primary education, zero otherwise
Secondary Education	A dummy variable, coded as one for those who have secondary education, zero otherwise
Farm Occupation	A dummy variable, coded as one for the farmers, zero otherwise.
Kinship at the Place of Destination	A dummy variable, coded as one for those who have kinsmen at the potential place of destination, zero otherwise
Migration Experience	A dummy variable, coded as one for those who prior migration experience, zero otherwise



Source: Banglapedia, National Encyclopedia of Bangladesh. Second Edition 2006.

V: HYPOTHESIS

In the present section we formulate a series of hypotheses and review studies relating to them. Several studies have shown that job related motivations (mostly joblessness in the villages and partly the search for better jobs) predominate in the reasons for both permanent and temporary out migration (e.g. Hossain 2001 and Afsar 2000). As our early discussion suggests, shortage of year-round employment in agriculture and lack of labor diversification are the major sources of hunger and destitution in our study area. The autumn-unemployment in agriculture reduces the expected earnings from staying in the village for both the agricultural and non-agricultural workers and thus raises their migration intention. Hence, a direct relationship between migration decision and autumn-unemployment, and an inverse relationship between migration decision and lean period income are hypothesized.

Land ownership also affects migration decision. The empirical studies, however, are inconclusive regarding the relationship between land holding and migration decision. For example, Kuhn (2004) argues that family migration is more likely among men from landless households, while the likelihood of both forms of migration (individual and family) drops with greater land holdings. Hossain (2001), in contrast, found that the migration propensity was higher for the households with agricultural land more than 50 decimals as compared to the landless, while the migration propensity for the households with land 6-50 decimals was lower compared to the landless. The higher propensity to migrate among the large landowners may be due the fact that they have greater opportunities to spread their livelihoods and risks over a number of locations. On the other hand, landless workers are bound to move for survival, particularly in the economic lean periods. The marginal farmers, who are somehow able to cover the cost for survival in the village very often, fail to cover the cost of migration, which is associated with high risks. As a result, migration intention of this group is the lowest. In the present study we assume that holding other things equal, if a worker has to face more competition for land use within the family, his/her migration intention is expected to be higher because it lowers the expected earnings from staying in the village. Thus, an inverse relationship between land ownership and seasonal migration is hypothesized.

In recent times, the micro credit program run by the NGOs has played a significant role in poverty alleviation in rural Bangladesh. In the absence of access to the formal credit market, the poor villagers have to borrow from the informal sources at abnormally high interest rates to finance the lean season unemployment. Those who borrow from the informal credit market remain impoverished even in the normal period because they have to repay their loans with high interest. However, with the development of micro credit programs, different NGOs now extend small loans to the poor for self-employment projects. As the members of NGOs enjoy opportunities to be involved in income generating activities other than agriculture in the lean period, their expected earnings from staying in the village increase. Thus, NGO-membership is expected to lower the probability to migrate.

Ecological vulnerability, like flood and river erosion, affects the migration decision. In the flood-affected years, livelihoods become more difficult compared to the normal years, because flood and water logging create more landlessness and joblessness, which in turn, increase the probability to migrate for survival. For example, following the great flood of 1988, the likelihood of migration increased significantly in *Matlab* thana of Comilla district (Kuhn 2004). In general,

Kurigram district is a river erosion-prone area. All the three major rivers (BRAHMAPUTRA, DHARLA and TISTA) displace hundreds of families each year. In the present study we hypothesize that both river erosion and flood raise the migration propensity.

Demographically, the internal migrants of Bangladesh are mostly concentrated in young adult ages (Chaudhury 1978). Migration propensity declines with age due to declining urban income expectations and increasing cost of migration. Household surveys at destinations show that 75% of temporary and 50% of permanent internal migrants (both male and female) of Dhaka city were 15 to 34 years of age. Of the migrant female labor force in ready-made garment industries, 90% were under 30 years of age (Afsar, 2003). Among the extreme poor, generally, men of the 20-40 years age group migrate more than any other group. The next group which migrates frequently consists of men who are 40-60 years old. Interestingly, the same age group of women workers also migrate almost as frequently as their male counterparts (Hossain, 2003). Following these studies we hypothesize that, holding other things constant; those who belong to the 20-40 age cohort are more likely to migrate in the lean period because their expected costs of moving are low and the probability of getting an urban job is high.

Due to limited employment opportunity of women in the urban centers, expected earnings from migration is hypothesized to be low for the female population. As a result, female members of a family are less likely to migrate than the adult male members of a family, holding other things equal. Studies on permanent migration reveal that those who are married have closer ties with their families and relatives. So, they are less likely to migrate (e.g. Lee, 1985). Based on the evidence gained from the Matlab thana of Comilla district, Kuhn (2004) also argues that following marriage, the likelihood of individual migration declines rapidly, while the likelihood of family migration rises for several years following the mean years of marriage. But it should be mentioned here that there is a large variation in the existing literature regarding the relationship between marital status and migration decision. For example, Hossain (2001) observed that the migration decision is closely associated with marital status and the responsibility towards the family. He found that migration propensity is higher among the married persons. Huq-Hussain's study (1996) also showed that more married women participate in the migration stream. In case of seasonal migration in the lean period, migration propensity among the married people is also expected to be higher. When mere survival is crucial in the agricultural lean season, the responsibility to feed dependents (spouse and children) is expected to increase the probability of individual migration.

The role of education in migration decision has been widely discussed in the literature and several studies have shown that migrants are usually more educated than the non-migrants in the same locality. A high rate of migration for educated people may be due to the fact that job opportunities are higher for them in the urban centers than in the rural areas. Among the early studies, Chaudhury (1978) emerged with two broad conclusions regarding the impact of education. First, the overall education level of the migrants and migrant families are higher than that of the non-migrants. Second, there is a high propensity to migrate among the illiterates and those with secondary and higher secondary education but the migration rate is relatively low among the primary and middle groups. Kuhn (2004) found that increased level of schooling resulted in an incremental rise in the likelihood of individual migration, while completion of secondary schooling increased the likelihood of family migration significantly. Interestingly, the

study of Huq-Hussain (1996) strongly suggests that educational attainments are not always the influencing factor in migration decision, particularly among the poor woman migrants of Dhaka City. In the present study, we hypothesize that an educated individual will have a lower propensity to migrate in the lean period. This is hypothesized because the seasonal migration intention comes from seasonal destitution and those who are uneducated are likely to be more vulnerable to such destitution. It is also very important to note here that the seasonal migrants are usually employed in the informal sector, where educational qualifications do not matter. So, the expected earnings from moving in the lean period are not affected by education. But since an educated person is likely to have better job opportunities in the village, his/her opportunity cost of moving will be higher.

Worker's occupation has a very close association with the seasonal migration decision. In the autumn lean period, agricultural workers suffer mostly from shortage of employment. When job opportunities are limited, the opportunity cost of migration is low and the expected earnings from moving become very high compared to the expected earnings from staying. So, the migration intention for the agricultural workers is hypothesized to be very high compared to the others. The cost of migration is inversely related to prior migration experience. Holding other things equal, an experienced worker is expected to face lower search cost in the urban job market. Thus, we hypothesize that the probability to migrate will be higher if the worker has prior migration experience. Another important determinant of the cost and benefit to migrate is the social network, i.e. the presence of neighbors, friends, in-laws and direct family members at the place of destination. Kinsmen at the potential places of residence can provide information as well as economic support for migration. An estimate of late 1990s shows that three out of every five internal migrants, who have kinsmen at the place of destination, managed employment within a week of arrival in Dhaka city (Afsar, 2003). Actually, those who have social networks at the urban centers, require fewer resources to find an urban job and thus, are expected to have a higher probability to migrate. Table 3 provides a summary illustrating all the factors affecting seasonal migration decision and their expected signs.

Table 3: Factors affecting migration decision and their expected signs

Variable	Expected Sign
1) Economic factors	
a) Income of lean period	Negative
b) Seasonal unemployment	Positive
c) Land ownership	Negative
d) Membership of NGO and/or other formal source of credit	Negative
2) Ecological vulnerability	
a) River erosion	Positive
b) Flood	Positive
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3) Individual characteristics

a) Age	
b) Sex (being male)	Positive
c) Farm occupation	Positive
d) Marriage (being married)	Positive
e) Education	Negative
f) Prior Experience	Positive
g) Kinsmen at the place of destination	Positive

VI: THE DETERMINANTS OF THE MIGRATION DECISION

This section discusses the major findings of our study. The findings are discussed in relation to the hypotheses formulated in section V. First, in table 4 the means and standard deviations of the explanatory variables and the dependent variable are presented. Then table 5 presents zero order correlations among the explanatory variables and the dependent variable. The bi-variate correlation analysis provides useful information on the basic nature of the relationship among the selected variables. It is evident from table 5 that income of the lean period, seasonal unemployment, migration experience, kinship, sex, farm occupation and education are closely related to migration decision. It also reveals the fact that there exist significant correlations among some of the explanatory variables. In order to examine the significance of each variable in determining the probability to migrate in the autumn lean period, both logit and probit estimates of equation (4) have been presented. Discussions on results are focused on overall significance and explanatory power of the model, individual effects of the explanatory variables and their relative importance.

Table 4: Mean and Standard Deviation of the Variables

Variable	Mean	Std. Deviation
Migration Decision	.39	.46
Income of the Lean period	31.25	34.09
Seasonal Unemployment	.70	.46
Migration Experience	.63	.48
Kinsman at Destination	.52	.50
Sex	.90	.30
Age	.76	.43
Marital Status	.70	.46
Farm occupation	.50	.75
Membership of NGO	.20	.40
River Erosion	.61	.49
Flood	.49	.50
Primary Education	.55	.49
Secondary Education	.30	.46
Land Ownership	.43	.49

Table 4: Correlation Coefficients

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Migration Decision	1	-.25	.294	.778	.628	.284	.051	-.038	.224	.074	.039	.011	.212(**)	-.118(*)	-.098
2. Income in the Lean period	.257(**)	1	.599(**)	.171(**)	.170(**)	-.138(*)	.093	.067	-.110	.026	-.035	.043	-.133(*)	-.012	.225(**)
3. Seasonal Unemployment	.294(**)	.599(**)	1	.193(**)	.141(*)	.193(**)	.027	-.012	.066	.026	.051	-.019	.123(*)	-.016	-.051
4. Prior Experience	.778(**)	.171(**)	.193(**)	1	.495(**)	.188(**)	.001	-.064	.149(*)	.050	.136(*)	.108	.173(**)	-.131(*)	-.052
5. Kinship	.628(**)	.170(**)	.141(*)	.495(**)	1	.173(**)	.017	-.060	.249(**)	.012	.049	.025	.143(*)	-.052	-.087
6. Sex	.284(**)	-.138(*)	.193(**)	.188(**)	.173(**)	1	.033	.024	.121(*)	.083	.054	.039	-.055	.076	-.023
7. Age	.051	.093	-.027	.001	.017	-.033	1	-.006	-.089	.081	.055	-.097	-.012	-.042	-.036
8. Marital Status	-.038	.067	-.012	-.064	-.060	.024	.006	1	-.068	.101	.248(**)	-.086	-.050	.109	.077
9. Farm Occupation	.224(**)	-.110	.066	.149(*)	.249(**)	.121(*)	.089	-.068	1	.070	.096	.135(*)	.080	-.016	.076
10. Membership of NGO	-.074	.026	-.026	-.050	.012	.083	.081	.101	-.070	1	.045	-.043	.016	.044	.032
11. River Erosion	.039	-.035	.051	.136(*)	.049	.054	.055	.248(**)	.096	.045	1	.378(**)	.085	-.127(*)	-.051
12. Flood	.011	.043	-.019	.108	.025	.039	.097	-.086	.135(*)	.043	.378(**)	1	.019	-.041	.173(**)
13. Primary Education	.212(**)	-.133(*)	.123(*)	.173(**)	.143(*)	-.055	.012	-.050	.080	.016	.085	.019	1	.735(**)	-.100
14. Secondary Education	-.118(*)	-.012	-.016	-.131(*)	-.052	.076	.042	.109	-.016	.044	-.127(*)	-.041	.735(**)	1	.066
15. Land Ownership	-.098	.225(**)	-.051	-.052	-.087	-.023	.036	.077	.076	.032	-.051	.173(**)	-.100	.066	1

* indicates that the correlations are significant at 10% level

** indicates that the correlations are significant at 5% level

Table 6 presents the results of logit estimation. As we can see from the table, the conventional measure of goodness of fit is 0.95. However, in binary response models, conventional R^2 does not bear much significance.³ An appropriate measure in this respect is the pseudo R^2 .⁴ In our logit model, the value of the pseudo- R^2 is 0.789, which means the model explains more than 78% of the variation in migration decision. To test the null hypothesis that all the slope coefficients are simultaneously equal to zero, the Likelihood Ratio (LR) statistic was used⁵. The Likelihood Ratio (LR) statistic in the logit model was found to be 286.54. As we know, the LR statistic follows the chi-square distribution with degree of freedom equal to the number of explanatory variables, 14 in the present study. The logit output suggests that we can reject the null hypothesis with almost hundred percent confidences that all the regressors chosen in the model are simultaneously equal to zero.

Now let us interpret the partial slope coefficients. In logit models the partial slope coefficients measure the change in logit for a unit change in the explanatory variables. That is, it tells us how the log-odds in favor of migration decision changes when the value of each factor changes. From the logit results we can see that seasonal unemployment, income in the lean period, flood and individual characteristics like age (being in the age group 20-40), sex (being male), farm occupation, education, prior experience, kinsmen at the place of destination all bear positive signs. That means all of these factors increase the log-odds in favor of migration decision. Factors like land ownership, membership of NGO, river erosion and marital status (being married) have negative impacts on migration decision. In the present study we use maximum likelihood method of estimation, which is a large sample (asymptotically) method. In large samples, the asymptotic t-statistic follows the standard normal distribution. Hence, while applying the ML method, we need to use the standard normal Z-statistic to evaluate the significance level of the variables. Table 6 provides the corresponding Z-statistics. To test the null hypothesis that a particular explanatory variable is not statistically significantly different from zero, we compare the calculated z-statistic to its critical value. For a large sample (more than 100 observations), the critical value for a one tail test is 1.645 at 5% level of significance. So, from the obtained results we can conclude that economic factors like seasonal unemployment in the lean period, membership of NGO and/or access to other formal source of credit, ecological factor like river erosion, individual characteristics like age, sex (being male), farm occupation, prior experience and kinship at the place of destination all have significant association with migration decision at 5% level of significance; while primary education is significant at 10% level of significance. In order to obtain the probability of deciding to move, the parameter estimates should be transformed through the logit function. The aggregate probability to migrate evaluated at mean values of the explanatory variables is 0.95⁶, which is very close to one. This implies that if a worker has mean values of all the characteristics specified in the model, s/he will be likely to move in the autumn lean period.

³ Predicted values of M lies within a closed interval of [0,1] and thus will give us an overly optimistic value of R^2 .

⁴ This is defined as $1 - (LLF_{ur} / LLF_r)$, where LLF_{ur} is the maximum or unrestricted value of the log-likelihood function and LLF_r is the restricted value of the log-likelihood function where all the explanatory variables are set equal to zero.

⁵ The Likelihood Ratio is defined as: LLF_{ur} / LLF_r .

⁶ The value of the logit function evaluated at the mean values is 2.94. Then by using equation (5) the probability to migrate was calculated.

In the present study we also introduce probit estimates. Table 7 presents the results of probit estimation. As we can see from the table that the value of the pseudo- R^2 is 0.789, which means the probit model also explains more than 78% of the variation in migration decision. The Likelihood Ratio (LR) statistic in the probit model was found to be 181.68, which suggests rejecting the null that all the factors are simultaneously equal to zero. The probit estimates show that seasonal unemployment, income in the lean period, flood and individual characteristics like age, sex (being male), farm occupation, education, prior experience, kinsmen at the place of destination all bear positive signs indicating that they increase the probability to migrate. Factors like land ownership, membership of NGO, and river erosion have negative impacts on migration decision in the probit model also. From table 6 we can conclude that economic factors like seasonal unemployment in the lean period, ecological factors like river erosion, individual characteristics like age, sex (being male), farm occupation, prior experience and kinship at the place of destination all have significant association with migration decision at 5% level of significance; while primary education is significant at 10% level of significance. The results are identical with the logit estimates found earlier.

The effect of a unit change in the explanatory variables on the decision to migrate has been calculated by using both the logit and probit estimates. In the logit model the marginal effect of the k^{th} continuous explanatory variable can be calculated as: $\beta_k \cdot (1-P) \cdot P$, where β_k is the estimated parameter and P is the probability to move. For practical purposes the marginal effect of k^{th} variable is calculated as the partial derivative of the probability to migrate, P with respect to X_k . But it should be noted here that the marginal effect derived from partial derivative is meaningful only when the explanatory variable is roughly continuous. The same formula cannot be applied in determining the magnitude of the partial effect of a variable when its value changes from zero to one. If we suppose that the k^{th} explanatory variable is a dummy variable, the change in the probability of a success ($M=1$) from changing X_k from zero to one, holding everything else constant, as denoted by X^* , is given by: $P(M=1, \text{ given } X_k=1, X^*) - P(M=1, \text{ given } X_k=0, X^*)$. However, marginal effects are routinely reported by STATA.

Table 6: Logit Estimates

	Coefficient	Z Statistic	Significance level	Marginal effects for a typical respondent
Economic Factors				
Income in the lean Period	.00267	0.14	0.89	0.00012
Land Ownership	-0.2121	-0.341	0.74	-0.0098
Seasonal Unemployment	2.4485	1.955	0.05	0.194
Membership of NGO	-0.39802	-0.473	0.64	-0.02
Ecological Vulnerability				
River Erosion	-1.3117	-1.677	0.05	-0.055
Flood	0.0985	0.135	0.89	0.0045
Individual				

Characteristics				
Age	1.6288	1.962	0.05	0.115
Sex (Male=1, Female=0)	2.465	2.31	0.02	0.278
Farm Occupation	1.889	2.39	0.017	0.086
Marriage (being Married)	-0.14281	-0.197	0.84	-0.0064
Primary Education	1.7117	1.632	0.1	0.09
Secondary Education	0.55137	0.508	0.61	0.023
Prior Experience of Migration	5.8649	6.148	0.00	0.671
Kinsmen at the place of Destination	3.8236	4.524	0.00	0.263
Constant	-9.0097	-3.414	0.001	

Goodness of fit = 0.95222
Pseudo-R-Squared = 0.78923
Log Likelihood Ratio = 286.54

Table 7: Probit Estimates

	Coefficient	Z Statistic	Significance level	Marginal effect for a typical worker
Economic Factors				
Income in the lean Period	0.0014	0.143	0.89	-0.0001
Land Ownership	-0.0923	-0.271	0.787	-0.009
Seasonal Unemployment	1.309	1.94	0.053	0.214
Membership of NGO	-0.305	-0.71	0.475	-0.037
Ecological Vulnerability				
River Erosion	-0.813	-1.92	0.05	-0.077
Flood	0.165	0.43	0.688	0.017
Individual Characteristics				
Age	0.787	1.84	0.065	0.116
Sex (Male=1, Female=0)	1.323	2.28	0.023	0.29
Farm Occupation	1.00	2.39	0.017	0.105

Seasonal Migration of Labor in the Autumn Lean Period

Marriage (being Married)	-0.126	-0.33	0.74	-0.012
Primary education	0.882	1.59	0.112	0.105
Secondary education	0.295	0.52	0.607	0.028
Prior Experience of Migration	3.16	6.85	0.00	0.644
Kinsmen at the place of Destination	2.15	4.68	0.00	0.303
Constant	-4.720	-3.605	0.00	

Goodness of fit = 0.95222

Pseudo-R-Squared = 0.78923

Log Likelihood Ratio = 181.68

It is evident from the above findings that among the economic factors, seasonal unemployment in the autumn lean period is the most decisive factor in determining the probability to migrate in the lean period. It increases the probability by 19% for a typical worker according to the logit model. The corresponding figure is 21% in the probit model. The results from our study, however, do not show any significant effects of lean period income on migration decision. The relationship was found to be direct, which does not conform to our hypothesis. The insignificant effect of lean period income may be due to high degree of correlation between lean period income and seasonal unemployment. As we know, in the presence of high degree of multicollinearity among some of the explanatory variables, the parameter estimates have large values of variances leading to large confidence intervals. This raises the probability of accepting the zero null hypotheses even though the true population coefficient is non-zero. Another economic factor, land ownership was also found to be insignificant. The insignificant relationship between land ownership and migration decision may be due to the fact that there exists very little variation in landownership in our sample. 42.3 percent of the respondents reported that they are landless, while the average landholding was found to be 20.9 decimal in the sample. 46 percent of the land owners own less than 30 decimals of cultivable land, 39 percent own more than 30 but less than 100 decimals of land. Only 15 percent of the landowners have more than 100 decimals land. Second, there are at least three types of landowners in Kurigram district: a) absentee landlords who live in urban areas and are engaged in other occupations, b) small land owners who work in their own lands and c) landless or effectively landless workers who work in other people's farm. Our study does not distinguish among these types land ownership, which could eventually increase the significance of this factor.

NGO membership has an inverse relationship with migration decision. Other things being equal, the probability to migrate is 2% lower for an NGO member with typical characteristics in the logit model and 3.7% lower in the probit model. In the present study no significant association was found between migration intention and NGO membership. In section 3 we hypothesized that NGO membership reduces the extent of seasonal poverty and thus reduces migration propensity during the *monga* period. But our study suggests that the NGOs working in this region have

partly failed to play their roles in poverty alleviation through micro credit and other programs. It is often argued that their service does not reach the poorest of the poor. Out of 62 NGOs of this area, only 8 are working in *Chilmari*, the most poverty stricken *thana* of the district. During the field trip we did not find any remarkable NGO-activity in *Bashantir Gram*, a village of real have-nots, and no body from this village reported themselves as NGO members. Second, the effectiveness of micro credit programs can be questioned on the ground that in some cases it failed to generate self employment among the poor recipients (this was borne out through observations). During the field trip we found a good number of respondents who borrowed money from some NGOs but still remained unemployed during the months of *monga*. They were trapped into the vicious cycle where borrowing from an NGO leads to more borrowing from the same or some other NGOs to repay the existing loans.

Our study suggests that personal characteristics of the individuals have profound effects on migration decision. Prior migration experience has the strongest positive impact among all the factors. According to the logit model, the probability of migration increases by 67% if the typical individual has prior migration experience, if the other variables remain unchanged. And as the probit model estimates, this probability rises by 64%. Other things being equal, the probability to move rises by either 26% (in logit model) or by 30% (in probit model) if the typical worker has relatives, friends or countrymen at the potential place of destination. These two variables, migration experience and kinship at the place of destination reduce the cost of migration by minimizing the time for job searching. Both of these variables were found to be significant at less than 1% level. The empirical results show that primary education has significant positive relation with migration decision at the 10% level. This does not conform to our hypothesis. A possible explanation of this finding could be that those who have some education have wider access to information about the urban settings, i.e. the urban job market and the urban socio-cultural structure. So, they are believed to form the expectations on urban earnings more accurately, which may increase the migration intension. The probability to move is either 0.09 or 0.1 higher for those with primary education. However, secondary education was found to be insignificant since a very small portion of our sample reported to have secondary education.

Our results also show that migration propensity is significantly higher among the males. For a typical worker, the probability to migrate falls by 0.27 or 0.29 if she were a female. Workers of age group 20-40 have significantly higher intension to move in the lean period. The probability is 0.11 higher. Marital status, though insignificant was found to have negative impact on migration decision. That means, holding everything else equal, a married worker is less likely to move. This demonstrates the fact that married workers have very strong ties with their families and their villages. One important finding of our study is that farm occupation significantly modifies migration decision. Since the seasonal hardship basically results from seasonal unemployment in agriculture, it is quite logical that the farmers would be keener to find out an alternative livelihood strategy, preferably in the cities. The logit model suggests that the probability of migration is 8.6% higher among the farmers, while the figure is 10.5% in the probit model. Another interesting finding is that regarding river erosions. It was found that those who experienced river erosion at least once in their lives have significantly lower migration propensity. This result does not conform to our hypothesis. The logit results suggest that the probability to migrate falls by 0.055 if the worker experienced river erosion. The probit model, on the other hand, shows that the probability to migrate falls by 0.077 if the worker experienced

river erosion. The inverse relation may be due to the fact that those who ever experienced river erosion in their lives cannot cover the minimum cost of adopting an alternative livelihood strategy like migration. The other ecological factor, flooding increases migration propensity in the autumn lean period, but not significantly.

VII: CONCLUDING REMARKS

This section summarizes the major findings of the study and discusses its contribution in the migration literature. Policy implications of the findings and scopes for further studies are also discussed. The study identified the characteristics of the seasonal migrants and quantified the effects of the factors affecting such migration decision in the autumn lean period. The results of the study can be summarized as follows:

1. All the three factors-economic, ecological and individual characteristics play important role in formulating migration decision. Among economic factors, seasonal unemployment has significant effects. Personal characteristics such as age, sex, occupation, migration experience and kinship at the city—all are significant at less than 5% level of significance. Primary education is significant at 10% level of significance.
2. The study found some results that were unexpected. First, river erosion was found to have significant inverse relation with migration decision. In this study it was hypothesized that if someone experiences river erosion in his/her life, then livelihood becomes much more difficult in the village. As a result, migration propensity rises. But the present study has shown completely opposite result. The possible explanation of this finding is that people who experience displacement by river erosions lack minimal resources to cover the costs of migration. That is why their migration propensity is lower.
3. During the survey two important features about the livelihood strategy of the rural poor were observed. First, there is a common tendency among some people to live by dissaving made in affluent periods. They choose not to migrate to the cities because they are risk averse and they choose not to work at all in the village because no work is available in the lean period. The second aspect about the migratory pattern is that after a few rounds the potential migrants who used to move back and forth, permanently settle in a better place, sometimes alone but sometimes with the entire family.

This study intends to make some policy suggestions which may be useful in further planning and implementation for rural development in Bangladesh. It emphasizes on the fact that poverty has both seasonal and regional dimensions in Bangladesh. Government policies could address this regional dimension for development; monga-prone regions may be given priority attention in order to increase labor productivity and provide greater scope for livelihood diversification. Massive urban unemployment and the expansion of urban informal sector indicate that the urban formal sector has failed to absorb the flow of rural unskilled migrants. According to one estimate, about 30% of the total employment in Bangladesh is in the urban informal sector (Oxford Policy Management, 2004). In the informal sector, workers have no job security and they have no formal or fixed working hours. The wage rate is also very low. But even then many seasonal migrants rationally choose to work in the urban informal sector because of the

predominance of poverty-led rural push factors and the limited scope for livelihood diversification in the village. So, it is suggested that appropriate national policies should be adopted to minimize the problem at the origin. Such policies should be aimed at achieving some specific goals like increasing agricultural productivity and crop diversification, encouraging rural non-farm activities, particularly large and medium scale industries and overcoming the credit constraints faced by the poor villagers.

Future research should investigate on the consequences of seasonal migration in the autumn lean period. In particular, the present study overlooks the role of remittance in reducing acute and chronic poverty in the economically lean period. Future studies should be aimed at measuring the flow of remittance in the lean period and its effectiveness on the receiving families. Different case studies on international migration suggest that the poor receiving families use most of the remittance for consumption purpose, particularly to fulfill their basic needs for food, clothing and housing (Afsar 2003). But to the best of our knowledge, no initiatives have been taken to analyze the effectiveness of remittances from the seasonal migrants in Bangladesh. Future studies should come up with ideas on how to make productive uses of these remittances such as investment in agriculture and small and medium businesses.

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