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Research Note

**LAND TENURE SYSTEM AND FOOD SECURITY IN A
SELECTED AREA OF MYMENSINGH DISTRICT***

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ABSTRACT

Food security status of share and cash tenant farmers was examined by employing the food security index. Primary data were collected for 60 randomly selected respondents (30 share tenants and 30 cash tenants) from Narayanpur and Bhabokhali villages under Sadar Upazila of Mymensingh district. The socio-demographic analysis of the study indicated that cash tenants had a slightly higher family size (5.10) than that of share tenants (4.97). The educational status of the cash tenant household members was moderately better than that of share tenant household members. Most of the male members of tenant households (24.29 percent of share tenant and 19.74 percent of cash tenant households) had farming as the principal occupation. A significant difference in the average size of land holding between share tenant (0.579 ha) and cash tenant farmers (0.612 ha) was also observed. Socio-demographic characteristics differ between the two tenure groups. The average daily per capita calorie intake was significantly higher for the households under cash tenancy (2,198.20 kcal) than that of the households under share tenancy (1,944.15 kcal). The estimated food security indices for share tenant and cash tenant households were 0.92 and 1.02, respectively. The study concluded that the extent of food security situation was much better among the cash tenant households than that of the share tenant households based on various food security measures and thereby land tenure systems clearly affect the food security situation of selected households.

I. INTRODUCTION

Bangladesh has been engaged in difficult developmental struggle since independence because of the persistent pressures of population growth on a limited land base. Given a land area of only 51,950 square miles (excluding rivers), Bangladesh's man/land ratio now approximates 1867 person per square miles, which represents a meaningful change from 1,470 person in 1974. Bangladesh is predominantly an agricultural country and two-thirds of the land areas (approximately 14.4 million hectare) were under cultivation at the time of its emergence. With increasing population pressure, cultivable land area, at present, has been reduced to 8.67 million hectare (BBS, 2009).

The landless comprises the poorest segment of the rural population. They survive under the poverty line. This group is forced to rely on wage labour, often on a piecemeal, daily or

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seasonal basis. Landlessness is generally featured with a large degree of underemployment or a state of unemployment which burdens households in rural Bangladesh. Secured access to land is vital for diverse land-based livelihoods, sustainable agriculture, economic growth, poverty elimination and food security. If households are unable to cultivate their own land, they turned on working or sharecropping on land belonging to others (Tenaw *et al.*, 2009). Therefore, a range of land tenurial arrangements offer a significant part of rural households access to land. Food security of these peoples is becoming very challenging task day by day.

In spite of a remarkable growth in agricultural productivity achieved over the last 30 years through intensification and diversification of crop production, 40 percent of the 140 million people in the country are consuming less than their daily calorie requirements (HIES, 2005). The land available for crop cultivation has been shrinking at round 1 percent per annum, which meant a reduction of average farm size from 0.81 ha in 1996 and further to 0.49 ha in 2005 with concomitant increase in fragmentation and subdivision of holdings. Moreover, cultivable land has gradually been degrading due to rice mono-cropping year after year (Mandal, 2007). Thus, issues relating to land tenure system and agricultural productivity are the most aggressive in addressing the challenges of food security in Bangladesh.

According to Food and Agriculture Organization of the United States (FAO) (1993), land tenure is the relationship, whether legally or customarily defined, among people, as individuals or groups, with respect to land. Land tenure systems determine who can use what resources for how long and under what conditions. On the other hand, food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life (FAO, 1996). Generally, three important aspects are considered to examine the food security situation: availability of food, access to food and utilization of food. The economy of Bangladesh largely depends on agriculture. Agriculture has direct linkages to food security through the potential to supply food grains for consumption. The impact of land tenure on food security is complex. Land tenure institutions directly affect food access at the household level by governing access to resources and indirectly affect food security at the regional or national level through overall food availability and hence food prices (Maxwell and Wiebe, 1998).

Access to land and thereby the land tenure systems are critical where people depend on land to ensure their food security. Food security is the capacity of households, communities and the state to mobilize sufficient food through production, acquisition and distribution on a sustainable basis. Food security, thus, depends on the land resources available to the household or community and their ability to mobilize resources for the production and distribution of food to achieve an active and healthy life (ECA, 2009). Secured property rights give sufficient incentives to the farmers to increase their efficiencies in terms of productivity and ensure food availability.

Till date, a number of studies on the impact of land tenure system on food security have been conducted in different countries. Onyido (2011) traced the relationship among food security, agricultural development and land reform in Nigeria and demonstrated that there is a clear linkage between appropriate dimensions of land reform, agriculture and food security.

Economic Commission for Africa (ECA) (2009) undertook a study on the impacts of land tenure systems on food security and sustainable development in Africa. The study developed an analytic perspective of the linkages among land tenure, food security and sustainable development in the African context. Chirwa (2008) assessed the impact of the land reform programme on investments, food production and agricultural productivity in Malawi. The unequal distribution of land in Malawi had been identified as one of the binding constraints on agricultural productivity and production which ultimately affect food security. Food security has been examined from various aspects in and outside Bangladesh. Omonona *et al.* (2007) presented the food security situation among urban households in Nigeria. Islam *et al.* (2008) conducted a study to assess the dimensions of food security for farm households under different land use patterns in Bangladesh. The study showed that changing land use pattern with scientific culture and efficient management is a path way to increase food production as well as to ensure food security of farm households. Anriquez *et al.* (2005) observed that agricultural development was an essential part of reducing poverty and improving food security in Bangladesh. The above mentioned review indicates that no detailed research on this issue has been done yet in Bangladesh. Therefore, the present study attempts to assess the food security situation among the two main tenurial arrangements i.e., share tenant and cash tenant. Share tenants are those who give a part of the produce to landlords and cash tenants are those who give a certain amount in cash to landlords for the use of their lands for a given period.

The study had the following specific objectives:

- i. To identify the major socio-demographic characteristics of the study villages and the sample tenant farmers; and
- ii. To assess the impact of land tenure system on food security of selected households.

The following null hypotheses have been drawn for this study:

- (a) socio-demographic characteristics do not differ between share tenants and cash tenants; and
- (b) Land tenure systems do not have any positive impact on food security of selected tenant households.

II. METHODOLOGY

The present research is based on field level primary data collected from selected respondents. Some preliminary visits were made to a few villages under Sadar Upazila of Mymensingh district. Finally, Narayanpur and Bhabokhali villages having concentration of a number of tenurial categories were selected purposively. The villages were well connected to Sadar Upazila by a concrete road and it was convenient for the researcher to collect necessary data and information. A good cooperation was expected from the respondents. A list of various tenurial categories prevailing in the research areas was made with the help of local Sub Assistant Agricultural Officer (SAAO), village leaders and Union Parishad members of the areas. Distribution of tenant population and sample in the study areas is shown in Table 1. Random sampling technique was used to select two groups of tenant operator for assessing food security situation in these groups. This is the most widely used method of sampling in social research which results in unbiased sample. Moreover, statistical analyses of data almost always depend upon samples drawn randomly. A total of 60 farmers (30 from each group)

were selected for discussion and necessary data collection keeping in mind the constraints of limited funds, materials and time.

Table 1: Distribution of Tenant Population and Sampled Farmers in the Study Areas

Tenure categories	(Number)		
	Narayanpur	Bhabokhali	Total
Share tenant	32 (23)	37 (7)	69 (30)
Cash tenant	28 (20)	17 (10)	45 (30)
Total	60 (43)	54 (17)	114 (60)

Source: Field survey, 2011.

Note: Figures in the parentheses indicate sample size in each category.

Survey data were collected during July to September 2011. The data and information collected from field surveys, interviews, discussions and communications were scrutinized, classified, edited and coded. The final results of the analyses were summarized and presented in tabular forms with their meaningful interpretations. Descriptive statistics (i.e., sum, average, percentages, ratios, etc.) were employed to examine the objective (i) and hypothesis (a). The food security index was estimated for analyzing the objective (ii) and hypothesis (b).

Food security index:

Food security index is given by the following formula:

$$Z_i = \frac{Y_i}{R} \quad (\text{Babatunde } et al., 2007)$$

Where,

Z_i = Food security index for i-th household which takes the value of 1 for food secured households and that of 0 for food insecure households, that is,

$Z_i = 1$ for Y_i is greater than or equal to R ; and
 $Z_i = 0$ for Y_i less than R .

Y_i = Daily per capita calorie intake of i-th household;

R = Daily per capita calorie required for i-th household; and

$i = 1, 2, 3, \dots, 30$.

Based on Z , several food security measures were calculated such as the food insecurity gap/surplus index (P) and the head count ratio (H).

Food insecurity gap/surplus index (P): Food insecurity gap measures the extent to which households are food insecure and surplus index measures the extent by which food secured households exceeded food security line. This index is given as:

$$P = \frac{1}{M} \sum_{i=1}^m G_i \quad (\text{Babatunde } et al., 2007)$$

Where,

P = Food insecurity gap or surplus index;

M = Number of households that are food secured (for surplus index) or food insecure (for food insecurity gap); and

G_i = Per capita calorie intake deficiency (or surplus) faced by i-th household.

$$G_i = \left(\frac{Y_i - R}{R} \right) \quad (\text{Babatunde } et al., 2007)$$

Head count ratio (H): The Head count ratio measures the percentage of the population of household that are food secured or insecure. This is defined as:

$$H = \frac{M}{N} \quad (\text{Babatunde } et al., 2007)$$

Where, H = Head count ratio;

M = Number of households that are food secured (for surplus index) or food insecure (for food insecurity gap); and

N = Number of households in the sample.

III. FINDINGS OF THE STUDY

3.1 Socio-Demographic Characteristics of the Study Villages

The selected villages namely, Bhabokhali and Narayanpur are under Sadar Upazila of Mymensingh district in Bangladesh. They are situated about 14 km away to the southeast of Upazila headquarter and about 12 km away to the southeast of the Bangladesh Agricultural University (BAU). The study area belongs to the agro-ecological zones of old Brahmaputra floodplain. The old Brahmaputra river flows along the north of the selected villages. These have more or less flat alluvial topography. The soil feature varies from sandy loam to loam with grey to dark grey color. The land area is mostly suitable for paddy cultivation.

In selected villages, there are 3 primary schools, 2 high schools and 1 madrasa. Educational status is gradually improving in the villages. Crop cultivation is the main occupation as well as income generating activity of the people of villages. Livestock rearing and fish culture are considered as the subsidiary and/or supportive services to crop cultivation. Besides, villagers are also engaged in labour selling, rickshaw or van pulling, small business, etc. A high proportion of the population is unskilled or semi-skilled and they work as wage labourer in the area. Very few people are employed in salaried job or services in urban areas. Women in the villages are mostly involved in household works, livestock rearing, farm activities like threshing and winnowing of farm products, etc.

The area is mainly double cropped region. Crop cultivation is predominant by irrigated MV (Modern varieties) Boro rice. Boro rice followed by Transplanted Aman is the main cropping pattern of the area. Another major cropping pattern is Jute followed by T. Aman. Other crops like wheat, potato, brinjal, onion, turmeric, garlic and various winter vegetables are also grown. Different kinds of fruits like jackfruit, mango, banana, papaya and litchi are grown in the area. Integrated farming (rice cum fish culture) is being practiced to some extent. According to the information provided by the local Sub Assistant Agricultural Officer (SAAO), Narayanpur village has 84 ha of total cultivable land and in Bhabokhali village, the area of cultivable land is 79 ha. The study villages are well connected to the Upazila

headquarter through a concrete road and the people usually travel by rickshaw, tempo, maxi, cycle, motorcycle, truck, etc. Muddy roads connect various places within the villages. Rickshaws and vans are the only mode of transportation on these roads. On rainy days, the roads become muddier and villagers have to face troublesome movements. There are two local markets in these villages namely, *Bhabokhali Bazar* and *Kachari Bazar*. Villagers sell and purchase their daily necessities at those markets. Some operationally important non-government organizations (NGO) in the study areas are Bangladesh Rural Advancement Committee (BRAC), Association for Social Advancement (ASA), Proshikkhon Shikkha Kaj (PROSHIKA) and Grameen Bank. These provide agricultural credit to farmers, micro-credits to women and landless farmers at a reasonably higher interest rate. Besides, NGOs are also providing technical training on poultry rearing and livestock raising. They also arrange for educational facilities for poor village children.

3.2 Socio-Demographic Characteristics of Tenant Farmers

Information on socio-demographic traits of the tenant households are related to the productivity of tenant farmers in respect of production, food availability, consumption and nutritional status of the household members which ultimately bear an impact on food security.

Demographic Profile: It can be seen from Table 2 that cash tenants had a slightly higher family size (5.10) than share tenants (4.97). However, both figures were higher than the national average (4.5) of the country (Preliminary Report on HIES, 2010). This fact quite reliably depicts the existence of population pressure among the tenure groups in the study area. The table clearly indicates that the number of working members (between 15 to 55 years) including both male and female was relatively higher for both farm families than family members in other age groups. Thus, they have the vast potential human resources to engage in different income generating activities and to increase the productivity as a whole. These facts with relatively higher family size seem to conclude that they have to arrange larger amount of food to ensure the food availability and nutrition of the family members of the respective farm households.

Table 2: Composition and Average Family Size of Tenant Households

(Number)

Age groups	Share tenant			Cash tenant		
	Male	Female	Both	Male	Female	Both
Below 5	5	7	12 (8.05)	4	8	12 (7.84)
5.00-15.00	23	22	45 (30.20)	26	22	48 (31.37)
15.01-55.00	41	44	85 (57.05)	43	42	85 (55.56)
Above 55 years	6	1	7 (4.70)	7	1	8 (5.23)
Total	75	74	149 (100.00)	80	73	153 (100.00)
Average	2.5	2.47	4.97	2.67	2.43	5.10

Source: Field survey, 2011.

Note: Figures within the parentheses indicate percentages of total.

Literacy Profile: Table 3 revealed that 17.52 percent of share tenant household members and 12.06 percent of cash tenant household members were illiterate. A majority of the household members (40.15 percent and 43.97 percent for share tenants and cash tenants, respectively) had only primary level of education.

Table 3: Educational Status of Tenant Households

Literacy level	Share tenant			Cash tenant		
	Male	Female	Both	Male	Female	Both
Illiterate	9	15	24 (17.52)	7	10	17 (12.06)
Can sign only	13	13	26 (18.98)	8	12	20 (14.18)
Up to Primary	31	24	55 (40.15)	37	25	62 (43.97)
Up to Secondary	16	14	30 (21.90)	21	17	38 (26.95)
Up to Higher secondary	1	-	1 (0.73)	2	1	3 (2.13)
Graduation and above	-	1	1 (0.73)	1	-	1 (0.71)
Total	70	67	137 (100.00)	76	65	141 (100.00)

Source: Field survey, 2011.

Note: Figures within the parentheses indicate percentages of total.

The tenant farmers were unable to bear the expenses of further education (beyond primary level). However, cash tenant households were economically better off than the share tenant households. Consequently, the higher educational status of the former household members was slightly better than that of the latter.

Households' Occupational Profile: It is evident from Table 4 that tenant households were engaged in a number of income generating activities. Most of the male members (24.29 percent of share tenant households and 19.74 percent of cash tenant households) had farming as the principal occupation. Farming here included crop cultivation, livestock rearing and fish culture. Other major income generating activities were rickshaw or van pulling, petty business, services or salaried jobs, various non-farm activities like carpentry, working in the garments, in nearby urban or semi-urban areas, etc. It may be noted that the overwhelming majority of female members of both share tenant (52.24 percent) and cash tenant (47.69 percent) households were engaged as housewives. Few of them worked in the crop field along with the male members.

Table 4: Occupation of Male and Female Members of Tenant Households**(% distribution of occupation)**

Income generating activities	Share tenant			Cash tenant		
	Male	Female	All	Male	Female	All
Farming	24.29	4.48	14.61	19.74	3.08	12.06
Wage labour	15.71	1.49	8.76	10.53	3.08	7.09
Petty business	8.57	0.00	4.38	9.21	0.00	4.96
Rickshaw/van polling	8.57	0.00	4.38	10.53	0.00	5.67
Service	4.29	5.97	5.11	5.26	6.15	5.67
Students	30.00	28.36	29.20	31.58	35.38	33.33
Housewife	-	52.24	25.55	-	47.69	21.99
Non-farm activities	8.57	7.46	8.03	13.16	4.62	9.22
Total	100.00	100.00	100.00	100.00	100.00	100.00

Source: Field survey, 2011.

Land Ownership Pattern and Farm Size: Table 5 revealed a sharp difference in the average size of land holding between share tenant and cash tenant farmers. This difference in farm size was statistically significant as indicated by the value of t-statistic. The farm size of cash tenants (0.612 ha) was clearly higher than that of the share tenants (0.579 ha). In both cases, size of own cultivable land was very small (share tenant: 0.083 ha and cash tenant: 0.111 ha). Tenant farmers increased their farm size through renting in, mortgaging in and other leasing arrangements. Farmers were very prone to mortgage out part of their land in case of any financial crisis. Both the tenant operators fall within the category of small farmer (0.51-1.00 hectare) (Zaman *et al.*, 2010). Farm size was measured using the following formula:

$$\text{Farm Size} = \text{Homestead Area} + \text{Owned cultivable land} + \text{Rented/mortgaged/leased-in land} + \text{Area under pond} + \text{Current fallow land} - \text{Rented/mortgaged/leased-out land}$$

(Yang, 1965).

Table 5: Land Ownership Patterns of Sample Tenant Households**(in ha)**

Particulars	Share tenant	Cash tenant
Homestead area	0.057	0.062
Owned cultivable land	0.083	0.111
Rented-in	0.250	0.229
Rented-out	0.019	0.059
Mortgaged-in	0.000	0.066
Mortgaged-out	0.072	0.068
Leased-in	0.230	0.290
Leased-out	0.000	0.053
Area under pond	0.039	0.026
Current fallow land	0.011	0.008
Farm Size	0.579	0.612
Differences in farm size (Cash tenant over share tenant)		0.033* (2.012)

Source: Field survey and author's estimation, 2011.

Note: Figure in the parenthesis indicates t-value.

* Significant at 10 percent level.

The findings of the analysis clearly indicated that socio-demographic characteristics of share tenants and cash tenants differ from each other in respect of demography, literacy, occupation and farm size. Thus, these findings lead to the rejection of hypothesis (a).

3.3 Food Security Situation of the Tenant Operators

Nutritional Status of the Households: Food security could be seen from three perspectives such as availability of food, access to safe and nutritious food and utilization of food. The per capita daily calorie intake from different food items by the tenant households has been shown in Table 6.

Average daily per capita calorie intake by households under share tenancy was estimated 1,944.15 kcal as indicated by Table 6, which is lower than the national food poverty line of 2,122 kcal. Thus, these households clearly lived below the food poverty line and were food insecure from the viewpoint of nutritional availability. On the other hand, the average daily per capita calorie intake was relatively higher for the households under cash tenancy (2,198.20 kcal) which is slightly above than the national food poverty line. Therefore, on an average, cash tenants in the study area were food secured. The difference in per capita daily calorie intake (254.04 kcal) between the cash tenants and share tenants was statistically significant at 5 percent probability level as confirmed by the value of t- statistic.

The table also revealed the importance of rice as the staple food crop in the country. Almost all the people in Bangladesh consume rice and derive 70.0 percent of the calories and 54.0 percent of the daily protein requirement from it (Islam *et al.*, 2008). Any threat to the production as well as availability of rice may seriously affect the food security situation of the growers as well as the common people of the country. Land tenure systems directly or indirectly affect the resource endowments and access to food, especially, the cereal crops. Share tenants, in general, have lower productivity and lower access to cereals than cash tenants and are food insecure. It is clear from Table 6 that share tenants, on an average, derived daily per capita calorie of 1,402.40 kcal from rice as compared to cash tenants who derived, on an average, 1,609.54 kcal per capita per day. This is the major determinant of the difference between the calorie intakes by two groups.

Food Security Index: Various food security indices have been summarized in Table 7 both share tenant and cash tenant households.

Based on the recommended daily calorie intake of 2,122 kcal, it is observed from the table that 30 percent of the households under share tenancy were food secured and about 70 percent were food insecure. The food security index for share tenant households was 0.92; the value of this index for food secured households was 1.19 whereas for food insecure households it was 0.80. Average calorie intake of food secured households was 2,526.41 kcal which is higher than the national average calorie intake (2,238.5 kcal) as reported by the Household Income and Expenditure Survey (HIES) (2005). Calorie intake of food insecure households was 1,694.61 kcal which is far lower than that of the national average.

Table 6: Calorie Intake from Different Food Items by Members of the Farm Households under Two Tenure Categories in the Study Area (kcal/day/capita)

Food items	Share tenant	Cash tenant
Rice	1,402.40	1,609.54
Wheat	3.69	3.36
Potato	78.89	76.69
Leafy vegetables	16.43	19.94
Brinjal	15.93	16.62
Others (Patol, kakrol, papaya etc.)	15.46	17.04
Lentil	54.74	59.91
Maskalai/Khesari/Others	5.33	6.23
Mustard oil	21.38	19.83
Soybean oil	130.17	127.59
Beef	1.29	1.46
Mutton	0.25	0.21
Chicken/Duck	4.44	4.12
Egg	12.44	14.6
Fish	86.61	100.11
Onion	6.36	9.52
Garlic	5.01	4.56
Chili	12.67	12.35
Turmeric	8.15	7.51
Coriander	0.36	0.34
Ginger	0.04	0.06
Fruits		
Mango	1.22	1.37
Jackfruit	0.19	0.22
Banana	11.17	15.44
Sugar	14.50	23.04
Gur	16.71	14.28
Milk	12.017	23.25
Others	6.30	9.01
Total	1,944.15	2,198.20
Difference in per capita daily calorie intake (Cash tenants over share tenants)		254.05** (3.651)

Source: Field survey and author's estimation, 2011.

Note: Figure in the parenthesis indicates t-value.

** Significant at 5 percent level.

Table 7: Food Security Indices for Sampled Farm Households

Food security indices	Share tenants			Cash tenants		
	Food secured households	Food insecure households	All	Food secured households	Food insecure households	All
Food security index	1.19	0.80	0.92	1.20	0.83	1.02
Percentage of households (%)	30.00	70.00	100.00	43.33	56.67	100.00
Per capita daily calorie availability (kcal)	2,526.41	1,694.61	1,944.15	2551.45	1771.52	2198.20
Food insecurity gap/ surplus index (P)	0.19	-0.20	-	0.20	-0.11	-
Head count index (H)	0.30	0.70	-	0.43	0.57	-

Source: Field survey and author's calculation, 2011.

The table also revealed that about 43.33 percent of the cash tenant households were food secured with an average daily per capita calorie intake of 2,551.45 kcal while 56.67 percent households were food insecure with an average daily per capita calorie intake of 1,771.52 kcal. The overall food security index for cash tenant households was estimated as 1.02.

Food insecurity gap/surplus index (P): The food insecurity gap/ surplus index shows that the food secured households under share tenancy exceeded the food poverty line by 19 percent, while food insecure households fell short of the required calorie intake by 20 percent. The cash tenant households who were food secured exceeded the minimum calorie requirement by 20 percent and calorie intake of food insecure households was 11 percent less than the minimum daily requirement.

Head count ratio (H): The share tenants could be regarded as food insecure given the fact that only 30 percent of the sampled households were able to meet the required calorie intake of 2,122 kcal per day per capita while 70 percent could not. This shows that more than two-third of the share tenant households were subsisting on less than daily per capita calorie requirement. About 43 percent of the sampled cash tenant households were food secured and that 57 percent were food insecure.

Thus, the extent of food security situation was much better among the cash tenant households than the share tenant households and land tenure systems affect the food security situation of selected households. This leads to the rejection of hypothesis (b).

IV. CONCLUSION

The study indicated that food security situation varies between cash tenant and share tenant farm households. Rice is still the main food item of the rural people. The consumption of other food items such as, vegetables, fruits, milk, egg, etc. as well as intake of nutrients was lower than the actual requirements in the study areas. Availability of rice grain determined to a great extent the food insecurity situation of tenant households. Enhanced agricultural production will improve the food security situation of tenant households through increased availability of food grains. Therefore, land tenurial arrangements and property rights directly affect the resource endowments and production and thereby food availability and overall food security at the household level. There are some new avenues of research on this issue which might be undertaken in the context of Bangladesh. These are outlined as follows:

- i. A more comprehensive research which will cover all types of land tenurial arrangements existing in the country could be undertaken and food security among them could be assessed; and
- ii. Similar study considering the time value of money and the role of different informal credit institutions in the tenancy relations which ultimately affect the food security of tenant households could be undertaken.

REFERENCES

- Amin, M.R. and Farid, N. 2005. Food security and access to food: Present status and future perspective. Paper presented in the National Workshop, 19-20 October 2005, Dhaka, Bangladesh.
- Anriquez, G., Lovendal, C.P., Nordanstad, M. and Stamoulis, K. 2005. Challenges in addressing hunger and poverty in Bangladesh: The case for a twin track approach. Paper presented in the National Workshop, 19-20 October 2005, Dhaka, Bangladesh.
- Babatunde, R.O., Omotesho, O.A. and Sholotan, O.S. 2007. Factors influencing food security status of rural farming households in North Central Nigeria. *Agricultural Journal*, 2(3): 351-357.
- BBS 2009. Statistical Yearbook of Bangladesh, Bangladesh Bureau of Statistics, Ministry of Planning, Government of the People's Republic of Bangladesh, Dhaka.
- BBS (2005). Report on Household Income and Expenditure Survey (HIES)-2005, Bangladesh Bureau of Statistics, Planning Division, Ministry of Planning, Government of the People's Republic of Bangladesh, Dhaka.
- BBS 2011. Preliminary Report on Household Income and Expenditure Survey (HIES)-2010, Bangladesh Bureau of Statistics, Planning Division, Ministry of Planning, Government of the People's Republic of Bangladesh, Dhaka.
- BER 2009 & 2011. Bangladesh Economic Review, Economic Advisory Section, Department of Finance, Ministry of Finance, Bangladesh.
- Chirwa, E.W. 2008. Land tenure, farm investments and food production in Malawi. Discussion Paper 19, Institutions and Pro-Poor Growth, Department for International Development. URL: www.ippg.org.uk/discussion.html (Accessed on 02/07/2011).
- ECA 2009. Economic Commission for Africa. Land tenure systems and their impacts on food security and sustainable development in Africa. Addis Ababa, ET: Economic Commission for Africa. URL:http://www.uneca.org/eca_resources/publications/sdd/land_tenure_systems.pdf (Accessed on 27/07/2011).
- FAO 1996. Food and Agriculture Organization of the United Nations. Rome declaration on world food security and world food. World Food Summit, Rome, Italy.

- FAO 1993. Food and Agriculture Organization of the United Nations. Land tenure and rural development. Chapter 3. What is land tenure?
URL: <http://www.fao.org/docrep/005/y4307e/y4307e05.htm> (Accessed on 028/10/2011).
- FAO 2009. Food and Agricultural Organization of the United Nations. Food security and agricultural mitigation in developing countries: Options for capturing synergies. URL: <http://www.fao.org/docrep/012/i1318e/i1318e00.pdf> (Accessed on 25/10/2011).
- Islam, M.S., Miah, T.H. and Haque, M.M. 2008. Assessing dimensions of food security for farm households under different land use patterns in Bangladesh. *Bangladesh Journal of Agricultural Economics*, 31(1): 19-34.
- Mandal, M.A.S. (2007). Challenges of agricultural research for poverty reduction in Bangladesh. A paper presented at the seminar on poverty alleviation through agricultural research in Bangladesh: Challenges for the 21st Century, Bangladesh Agricultural University, Mymensingh, Bangladesh, 16 June 2007.
- Maxwell and Wiebe 1998. Land tenure and food security: A review of concepts, evidence and methods. LTC research paper 129, Land Tenure Center, University of Wisconsin-Madison.
- Omonona, Titus, B., Agoi and Adetokunbo, G. 2007. An analysis of food security situation among Nigerian urban households: Evidence from Lagos State, Nigeria. *Journal of Central European Agriculture*, 8(3): 397-406.
- Onyido 2011. Land reform, agriculture and food security in Nigeria. Research Paper, Michael Okpara University of Agriculture, Umudike.
- Tenaw, S., Islam, K.M.Z. and Parviainen, T. 2009. Effects of land tenure and property rights on agricultural productivity in Ethiopia, Namibia and Bangladesh. Discussion Paper no.33, Department of Economics and Management, University of Helsinki, Helsinki.
- Yang, W.Y. (1965). Methods of farm management investigation for improving farm productivity. Food and Agriculture Organization of the United Nations, Rome, Italy.
- Zaman, S., S. U Siddiquee, M. A. Faruq, M. R. Pramanik and M. Katoh (2010): Composition and Trends of Homestead Agroforestry in Bangladesh: A case study in Dinajpur District. *Journal of Sustainable Development*, 6(10), 1-6.