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ROLE OF 'ONE HOUSE ONE FARM' APPROACH TO IMPROVE LIVELIHOODS OF SMALLHOLDER FARMERS OF ETHNIC AND NON-ETHNIC COMMUNITIES IN BANGLADESH

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ABSTRACT

One House One Farm' (OHOF) was a poverty alleviation project launched by the Government of Bangladesh in 2009 to reduce poverty and improve the livelihoods of smallholder farmers. The research sought to investigate the impacts of OHOF project using the livelihood framework. This project was launched in Nalitabari sub-division of Sherpur district in Bangladesh as a pilot one with emphasize on smallholder farmers from ethnic and non-ethnic communities. A total of 148 households (68 from the ethnic community and 80 households from the non-ethnic community) were selected through stratified random sampling technique. Data were collected using a semi-structured interview schedule administered through a face-to-face interview technique. The findings certitude that livelihood capitals such as human, natural, physical, social and financial of project farmers were found improved as compared to non-project farmers. The status of improved livelihood and overall improved livelihood outcomes for the non-ethnic project farmers were comparatively better than that of ethnic members. Since vulnerability contexts were different in each community, the project has intervened accordingly to reduce the extent of vulnerability. Though OHOF approach has improved the overall livelihood situation of smallholder project farmers and reduce their vulnerability to an extent, the project interventions were not equal for studied communities. Moreover, the project personnel were reported with more inclined to provide opportunities for the non-ethnic project farmers than that of ethnic ones.

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INTRODUCTION

About two-thirds of the developing world's 3 billion rural people live in about 475 million small farm households, working on land plots smaller than 2 hectares (FAO, 2015). Many are poor and food insecure and have limited access to markets and services. Their choices are constrained, but they farm their land and produce food for a substantial proportion of the world's population. Besides farming, they have multiple

economic activities, often in the informal economy, to contribute towards their small incomes (FAO, 2015). These small farms depend predominantly on family labour. In China, nearly 98 percent of farmers cultivate farms smaller than 2 hectares- the country alone accounts for almost half of the world's small farms. In India, about 80 percent of farmers are small. In Ethiopia and Egypt, farms smaller than 2 hectares constitute nearly 90 percent of the total number of farms. In

Mexico, 50 percent of the farmers are small; and in Bangladesh, 76 percent of farmers are small having a land size not more than one hectare (Lowder *et al.*, 2014). Thus, in Asia and Africa, millions of small-scale and subsistence farmers, pastoralists, fishermen and indigenous peoples produce most of the food consumed worldwide, in most cases on very small plots of land.

Bangladesh emerged as an independent and sovereign country in 1971 following a nine-month war of liberation. It is one of the largest deltas in the world with a total area of 147,570 sq. km. With a unique communal harmony, Bangladesh has a population of about 162.51 million, making it one of the densely populated countries of the world (BBS, 2017). The country accounts for a significant portion of the world's poor with nearly 26% of people living below the poverty line (BER, 2013). The abundant population has a high growth of unemployment, which is marked by the expansion of poverty in the rural areas as well as urban areas. Poverty alleviation has been considered with a very high priority by the Government because poverty is considered as one of the biggest challenges for the development in the country. Sustained economic growth along with steady agricultural improvement has been fundamental to reduce poverty. Given that the agriculture sector remains fundamentally important to the country's prosperity and it utilizes three-quarters of the scarce land space of Bangladesh and supports the livelihoods of the majority of the population but it is passing through some immediate challenges in promoting sustainable development. The challenges include continuing to increase production and achieve recognizable quality standards despite the loss of land to other uses and climate change.

With the increasing pressure from the growing human population, only vertical expansion is possible by integrating appropriate farming components, requiring lesser space and time and ensuring periodic income to the farmer. Due to its subsistence nature, agriculture in Bangladesh is characterized by diversified farming to meet the household requirements and to minimize the risk and uncertainty. Small farmers try to develop as many enterprises as their farming systems allow within the present socio-economic and agro-climatic conditions, and under household goals, preference and resources. Since smallholder farmers are the major driving force for running the wheel of agriculture, they produce the lion share i.e., nearly 70% of the agricultural production of the country. The majority of small

households or families in Bangladesh are ensuring food production, food security and food safety themselves (Arifa *et al.*, 2016). So, the best option for Bangladesh is the optimum use of arable land by smallholder farm families ensuring maximum food production keeping the resources potential for future use. More investment to smallholder and marginal farmers is now the country's strategic policy.

Because of the scarcity of land, subsistence type of farming, dormancy of smallholder farmers in farming, vitalizing family farming, effective utilization of household resources, Government of Bangladesh had undertaken "One House One Farm" (OHOF) project in 2009 for poverty alleviation through family farming¹) The goal of the project is to alleviate poverty through e-financial inclusion (i.e. fund mobilization) followed by family farming and income generation of the underprivileged and smallholders. Bangladesh is opting for poverty eradication & elimination of inequalities leading to achieve MDG-1 along with other MDGs (Arifa *et al.*, 2016). The key consideration is the eradication of persistent poverty from society to achieve sustainable and equitable development.

One House One Farm approach

One House One Farm (OHOF), a sustainable poverty alleviation model was dreamt by the Honourable Prime Minister Sheikh Hasina with great assurance of funding to the program aiming at livelihood uplift and poverty alleviation.

¹ Bangladesh Rural Development Board (BRDB), the field level project implementation organization, identified some missions satisfy to vision of OHOF project. These are: i) assist to capital formation of the poor farm families; ii) sharpen their skill by training and motivation; iii) allow them to sit together at courtyard meeting; iv) enable them to take decision independently; v) enable them to develop need based small family farms; and vi) ensure marketing facilities for their product. To achieve these missions, the activities undertaken are: i) provide them training in related fields of agriculture and farming; ii) enable them taking decision independently about farming & development sitting in the evening courtyard meeting; and iii) enable them developing small farms according to their needs/choice. The target population of the projects are smallholder farmers having land area not more than 2.5 acres including household area (GoB 2009). Under this project, smallholder farmers will produce diversified products which will ensure their food security and also economic stability that will lead to improve their livelihood situations.

The program was further laid out under following foundations;

a) Composition of committee for selecting project beneficiary

The first strategy/step of OHOF approach is the committee formation for selecting beneficiaries. Upazila Nirbahi Officer i.e. the Sub-division Executive Officer commonly known as UNO forms a beneficiary selection committee headed by a upazila (sub-division) level Officer i.e., Tag officer for the Union concerned.

Upazila Coordinator of the 'one house one farm' project is being worked as the Member-Secretary of the committee. With the supervision of Upazila level Officer known as Convener, members have operated it effectively. In the committee, the members are allocated by their activities i.e., for upazila level, Assistant Upazila Rural Development officer, for union level, members of respective Union Council; and for block/ward level, Family Welfare Assistant of respective ward works as a member. Moreover, Answer and VDP Team Leader, respective Village Police, respective Field Organizer of Upazila Rural Development Office (RDO), field worker of rural poverty eradication foundation also works as members of the project beneficiary selection committee.

b) Target beneficiaries

In the project areas, the heads of the following categories of households considered as target population to be determined based on the following criteria:

- i. Household having the only homestead;
- ii. Landless people those who own land up to 0.50 acre of land including homestead and who earn their livelihood by selling manual labour and have no regular sources of income;
- iii. Poor women-headed households in the village; and
- iv. Small and marginal farmers having up to 2.50 acres of land including the homestead.

c) Project modalities

After selecting the beneficiaries for the project, the first target is to fund mobilization followed by investment in small scale farms of the poor leading to increase food production, family nutrition and income generation. It is a permanent smallholder investment activity leading to permanent income and permanent poverty alleviation. There are four steps involved in participatory fund development and its mobilization.

These are:

- i. As the first step, the individual project beneficiary/member saves BDT 200 per month and the government gives the equal amount to them as bonus followed by BDT 150,000 as revolving fund annually for each somitee²) All the money has been deposited to the bank account of the village development organization (VDO).
- ii. The next step is an investment. The project beneficiary/member sit together in the courtyard meeting and decide for investment independently according to their need and livelihood.
- iii. The third step is the development of a farm. After getting fund from the VDO each project beneficiary/member develops small farms like fishery, livestock, poultry, nursery, vegetable gardening etc. Thus, every inch of the land of the smallholders is used efficiently for agro production.
- iv. Finally, the fourth step relates to 'repay of the loan'. After income generation, the smallholder families deposit (repay) loan in instalment to the account of the VDO. Thus, the fund is being revolved and utilized for poverty alleviation by the poor permanently. Thus, it stands as a sustainable poverty alleviation cycle challenging the vicious cycle of poverty. The project beneficiaries receive different kinds of skill development trainings to start small business or entrepreneurship with their own initiatives. In addition, the OHOP project also works for developing the marketing channels in the project areas to support the producers to get the real price of their produces.

Livelihood improvement of smallholder farmers is a great challenge for the Government of Bangladesh. The overall development of the country will not be achieved by neglecting the development of this large segment of population. Hence, appropriate measures should be taken by the GOs and NOGs and development

² For OHOF project, 'somitee' means a group which consists of 60 members out of which 20 members are female farmers. Both male and female farmers actively participate in group activities and take decisions collectively about different aspects of managing farms and homes efficiently for improving their livelihoods.

organizations to improve the livelihoods of smallholder farmers in the rural areas of Bangladesh, especially in less advanced areas where indigenous peoples reside in. Over time, One House One Farm project has been established to work with farmers to improve their livelihoods through an approach called One House One Farm approach. However, in some of the cases, it is reported that the project beneficiaries are not happy with the rate of improving their livelihoods through project intervention and the performance of field-level project personnel though the Government is highly committed to improving livelihood situation of project beneficiaries.

Islam Sheheli *et al.* (2014) researched competency assessment of the farmers on the application of 'one house one farm' approach and found that the majority of the respondents (94 per cent) had medium competency while using the household development intervention of the OHOF project. Ullah *et al.* (2013) identified and described farmers' problems in practising different intervention regarding 'one house one farm' approach and reported that 72% of the farmers had a severe problem, 28% had a moderate problem and none of the farmers noticed with the low problem in practising this approach. Ullah *et al.* (2011) researched farmers' perception towards 'one house one farm' approach in Mymensingh district covering six parameters such as food security, economic security, input supply, requirements, components and organizational support. The findings revealed that 47.0% of the farmers had a moderate favourable perception, 28.0% had less favourable perception and 25.0% had a favourable perception of 'one house one farm' approach. Arifa *et al.* (2016) reported that with the adoption of 'one house one farm' approach, project farmers got more opportunities to improve their economic condition and livelihood status through diversified income-generating activities than non-project farmers. However, none of the previous studies considered the role of one house one farm (OHOF) project intervention with the project beneficiaries reside in diversified communities. Therefore, the overall objective of this study was to access the role of one house one farm project/approach upon livelihoods of smallholder farmers reside in the ethnic and non-ethnic community. The specific objectives of the study were:

- i. to evaluate the role of OHOF to increase livelihood assets;

- ii. to examine the ethnicity bias in the contribution;
- iii. to investigate the extent of satisfaction of project beneficiaries upon the performance of OHOF project personnel.

Conceptual Framework: To assess the impact of One House One Farm (OHOF) approach upon the livelihoods of project beneficiaries, this study used the livelihood system model. Carney (1998) presents a definition of livelihoods based on the work of Robert Chambers and Gordon Conway:

"A livelihood comprises the capabilities, assets (including both material and social resources) and alternatives requires for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base" (Carney, 1998).

Households build their livelihoods based on their assets and available opportunities. Different households within the same locale have diverse levels of household assets. The poorest may have to rely simply on their human capital and entitlement to common property. Households arrive at a 'livelihood strategy' based on assets available, because of opportunities arising, level of resource access, risk aversion and perceived benefits. On the basis, they then engage in 'livelihood activities. This model gives an understanding of households' livelihood processes and allows one to 'map' the consequences of specific changes, including changes brought about through external interventions intended to improve people's lives. The main livelihood activity for most of the households in the study areas is agriculture. For households with little or no agricultural land, the main occupation open is local manual work as agricultural labourers or porters, and artisanal production (with skills and tools passed inter-generationally within households). The livelihood framework looks at the basic dynamics of livelihoods and how people are represented on a set of capital/assets as a basis for their livelihoods (Carney, 1998; Hussein and Nelson, 1998). The framework is also useful for explaining the interrelationships among different livelihood capitals and their utilization in diversifying livelihood strategies to attain desirable outcomes in the available enabling environment. In the livelihood framework, these assets are represented by human capital (skill, knowledge, capacity, labour ability and good health), social capital

(relationship of trust and reciprocity, networks and memberships of groups), physical capital (basic infrastructure, transport, shelter and communications),

natural capital (land, forest, water, wildlife and biodiversity) and financial capital (monetary resources-savings, credit, remittances etc.).

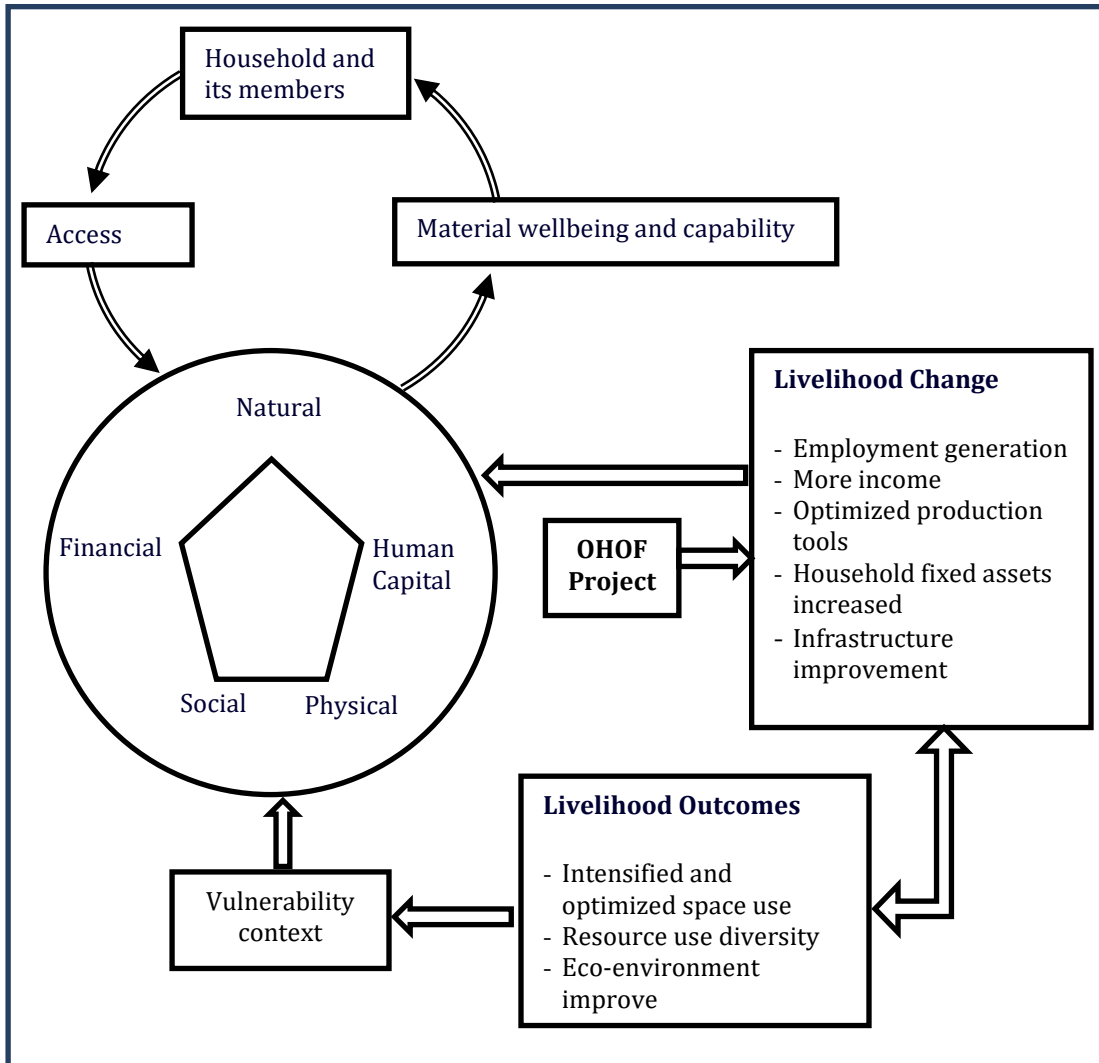


Figure 1. Conceptual framework of the study.

Source: DFID, 2000 & Chuanseng, 2018.

The assets are the livelihood building blocks and a range of assets are needed to attain positive livelihood outcomes (Warner, 2002). To build a framework for analyzing rural livelihoods, at a minimum, it would need to address: i. the diverse assets that rural people draw on in building livelihoods; ii. how people can access, defend and sustain these assets; and iii. the abilities of people to transform those assets into income, dignity, power and sustainability (Bebbington, 1999). Considering the above issues, the framework for this study has been developed which firstly conceives of livelihoods and the enhancement of human well-being in

terms of different types of capital (natural, produced, human, social and cultural) that are at once the resources (or inputs) that make livelihood strategies possible, the assets that give people capability, and the outputs that make livelihoods meaningful and viable. These ultimately enhance livelihood outcomes which reduce vulnerability and sustain livelihoods. In assessing the livelihood status of the local people, improvement in all of the five capitals could be termed as strong sustainable livelihood, whereas improvement in only some of the capitals that compensate for any decline in other capitals could be termed as a poor sustainable

livelihood (Das, 2009). This study analyses the base assets of the participants and explores their access to livelihood assets in the OHOF approach.

MATERIALS AND METHODS

Study area

The study was conducted in two villages namely, Joynadipara and Bajakura under Nalitabari sub-division of Sherpur district in Bangladesh³⁾ The village Joynadipara was dominated by ethnic people, while the Bajakura was dominated by non-ethnic people. For both the villages, the significant proportion of community people were under the category of small-scale farmers and their main occupation was farming. The reasons behind selecting these areas are: (i) among some sub-divisions where One House One Farm project started at the field level in 2009, Nalitabari is one of them; (ii) widespread poverty and malnutrition among smallholder farmers; and iii. availability of ethnic/indigenous smallholder farmers. A map of Sherpur district showing the study areas has presented below (Figure 2).

Livelihood Capitals

The idea of capitals/assets is central to the sustainable livelihoods approach. Rather than understanding poverty as simply a lack of income, the sustainable livelihoods approach considers the capitals/assets that poor people need to sustain an adequate income to live. The more assets any household has access to, the less vulnerable they will be to negative effects of the trends and shocks as described above, or to seasonality, and the more secure their livelihood will be. Often increasing one type of capital will lead to an increase in other amounts of capital, sometimes, on the contrary, one form of capital decreases as another increase. The livelihoods approach seeks to gain a realistic understanding of

people's strengths (assets or capital endowments) and how they endeavour to convert these into positive livelihood outcomes. Considering livelihood framework as suggested by DFID (2001), we considered five types of capitals/assets for this study upon which livelihoods are built, namely human capital, natural capital, physical capital, social capital, and financial capital. It was assumed that since the respondents of this research were involved in the OHOF project activities, they were able to build up several types of livelihood capitals. This study examined some important variables of the capitals based on livelihood framework.

Population and Sampling Procedure

Households having a land size of less than 1.0 hectare (small farm holders) in both the villages were considered as the population of the study. A total of 296 households were reported with the above criteria (136 households in Joynadipara i.e. ethnic community and 160 households in Bajakura i.e. non-ethnic community) belonged to both project and non-project farmers. Fifty (50) percent of the households i.e. 148 households (68 ethnic households and 80 non-ethnic households) were selected using stratified random sampling method which consisted of both project and non-project farmers from the study villages and the head of each household were considered as the sample of the study from whom data were collected.

Data Collection and Analysis

For the study, both primary and secondary data were collected those were both quantitative and qualitative. Primary data was collected by semi-structured interview schedule using a face-to-face interview with the heads those were mostly quantitative. Qualitative data, on the other hand, was collected through interviews, focus group discussions, and discussion with OHOF project farmers and non-project farmers. For secondary data, literature review and personal observation were mostly used. A pre-test was conducted to check the quality of the questionnaire and modifications were done based on the experience of the test. The questions were designed to collect data on farmers' personal and socio-demographic characteristics, the five capitals (human, social, physical, natural and financial) possessed by the respondents, concerned issues of vulnerability and project farmers' satisfaction with the performance of project personnel.

³⁾ The area of Nalitabari sub-division is 327.61 sq. km, which is bounded by Meghalaya state of India on the north, Sherpur Sadar and Nakla sub-division on the south, Haluaghat sub-division on the east and Jhenaigati sub-division on the west. Total population is 252935 (male: 128963, female: 123972). Indigenous/ethnic communities such as Garo, Hajong, Hodi, Mandai and Koch live in this sub-division. Average literacy rate is 34.27% (male: 37.71%, female: 30.72%) (BBS 2017). Major crops are paddy, jute, wheat, potato, mustard, vegetables and the main sources of income of dwellers is agriculture.

Table 1. Total number of household and the number of sampled in each village.

Villages	Total number of households (296)				Number of sampled (148)				% sampled
	Ethnic (136)		Non-ethnic (160)		Ethnic		Non-ethnic		
	PF	Non-PF	PF	Non-PF	PF	Non-PF	PF	Non-PF	
Joynadipara	70	66			35	33			
Bajakura			82	78			41	39	50

Note: 'PF' denotes Project farmers and 'Non-PF' denotes Non-Project Farmers.



Figure 2. Map of Sherpur district, Bangladesh showing study area.

Source: BBS, 2017.

The same questionnaires were employed for both categories (ethnic and non-ethnic) of respondents and interviews were carried out from February to April 2018 with the help of two enumerators. A total of six aspects were considered for measuring the livelihood outcome with the responses like 'low', moderate' and 'high' along with their corresponding response were 1, 2 and 3 respectively (Das, 2009). For investigating the

project intervention to reduce vulnerability contexts of the study areas, on the other hand, six vulnerability aspects were identified through key informant interview and FGDs, and they were measured with the responses like 'low', 'moderate' and 'severe'. Furthermore, project farmers were asked to mention their satisfaction upon the performance of project personnel. In this regard, a three-point rating scale was

developed with the responses like 'not, 'moderate' and 'high' and their corresponding scores were 0, 1 and 2 respectively. The Statistical Package for Social Sciences (SPSS) version 20 was used to analyze the quantitative data collected for this study.

RESULTS AND DISCUSSION

Socio-demographic characteristics of smallholder farmers: During the field study 148 household heads were interviewed among them 68 households' heads were taken from the ethnic community and 80 household heads from the non-ethnic community (Table

2). The mean ages of the ethnic and non-ethnic respondents were 48.65 and 47.23 years, respectively. In the case of level of education, the average education level of ethnic respondents was 5.13, while the average education level of non-ethnic respondents was 6.02 years. The finding shows that the level of education was a bit higher for the non-ethnic respondents than that of ethnic ones. Data concerning the duration of involvement with OHOF project indicates that the ethnic and non-ethnic respondents were 7.18 and 7.49 years of involvement with the project, respectively.

Table 2. Salient features of personal and demographic characteristics of the respondents.

Selected Characteristics	Respondents	
	Ethnic	Non-ethnic
Age (year)	48.65±6.32	47.23±6.91
Education (year of schooling)	5.13±2.82	6.02±3.09
Duration of involvement with the project (year)	7.18 ± 4.36	7.49 ± 4.60
Family income ('000' BD Tk)	140.21±87.29	176.59±100.65
Credit received		
Yes (%)	51.26	66.21
No (%)	48.74	33.79
Participation in training supported by OHOF project		
Yes (%)	58.02	70.2
No (%)	41.98	29.8
Membership in social organization/institution (s)		
Yes (%)	41.18	68.36
No (%)	59.82	31.64
Knowledge of homestead farming (Scale score: 0-8)	4.82±1.73	4.96±1.61

The average family income of ethnic respondents was 140.21 thousand Bangladesh Taka which was lower than the average family income of non-ethnic respondents (176.59 thousand BD Tk). The rate of credit received had a bit higher for non-ethnic respondents (66.21%) than that of ethnic respondents (51.26%). Findings related to participation in training supported by the OHOF project reveal that about half of the sampled respondents (58%) under ethnic category had received training, while 70.2% of the respondents from non-ethnic category received training. About three-fifth (59.82 %) of the respondents in the ethnic community was found with having no membership in social organization/institution (s), while more than two-thirds (68.36%) of the ethnic respondents had membership in any formal committee

of local organization/ institution (s). Findings concerning knowledge indicate that the mean values of ethnic and non-ethnic respondents on homestead farming were more or less equal i.e. 4.82 and 4.96, respectively.

Livelihood status of the project and non-project farmers

Human capital

In the case of literacy rate, it was found that (Table 3) the literacy rate was higher for project farmers compare to non-project farmers for both the communities. This may be because of project intervention with adult literacy program as well as easy access and availability of educational institutes to the non-ethnic community compare to the ethnic community in the study areas.

Many training sessions (1-3 days), workshops, discussions meetings and field visit were conducted at a local level to increase the level of awareness and skill for

farmers by the both Government and Non-government organization along with OHOF project intervention and these were the initiatives to build human capital.

Table 3. Respondents' status in human capital.

Aspects of human capital considered	Ethnic respondents		Non-ethnic respondents	
	Non-project	Project	Non-project	Project
Literacy rate (%)	49.74	51.29	55.18	57.11
Training received (%)	40.11	61.41	50.16	72.32
Participation in farm and home management workshop and discussion meeting (%)	41.83	63.69	49.06	74.11
Availability of labour (15-50 yrs) in each household (mean \pm SD)	2.29 \pm 0.68	2.31 \pm 0.59	2.37 \pm 0.71	2.47 \pm 0.74

Findings related to reception of training by the respondents showed that the quantity of receiving training was higher for the project farmers in comparison to non-project farmers in both the communities. The extent of participation in farm and home management workshop and discussion meeting was also a bit higher project farmer than that of non-project farmers. This may be because of project farmers enjoyed more facilities than non-project farmers in the areas of participating in different training programs, skill development workshops and discussion meetings arranged by the OHOF. Training, workshop and discussion meeting help participants enhance their knowledge and skills related to farm and home management, community development, organizational and leadership capacity developments which, in turn, affect the social capital also (Farouque, 2017). For both

the cases, labour availability was lower in the ethnic community than non-ethnic one. This was because a bit lower number of members having age category (15-50 yrs) in most of the households of ethnic community than non-ethnic one in the study area. Islam and Sato (2012) also reported similarly in their study.

Natural capital

Land is an important natural capital and the average family landholding of project farmers was a bit higher than non-project farmers in both the communities (Table 4). The capability of managing farmyard manure (FYM) and status of maintaining soil fertility by using that manure was higher for the project farmers than non-project farmers in both communities. This was because OHOF project committed to mobilizing household resources.

Table 4. Respondents' status of natural capital.

Aspects of natural capital considered	Ethnic respondents		Non-ethnic respondents	
	Non-project	Project	Non-project	Project
Family landholdings in ha (mean \pm SD)	0.47 \pm 0.292	0.49 \pm 0.361	0.51 \pm 0.242	0.59 \pm 0.237
Manage FYM effectively				
Yes (%)	49	65	51	78
No (%)	51	35	49	22
Status of maintaining soil fertility by using FYM				
Yes (%)	48	67	60	81
No (%)	52	33	40	19
Number of trees in the household area (mean \pm SD)	15.12 \pm 5.04	21.67 \pm 4.38	17.19 \pm 5.12	23.72 \pm 4.09

Concerning the number of trees in the household area, the average number was usually higher for project farmers compare to non-project farmers. This may be because of OHOF is committed to increasing the number of trees (both wood and fruit trees) in the household areas of the project beneficiaries. In this concern, the project supplies siblings of different trees with very minimum cost to the project beneficiaries. The non-project farmers did not get this type of benefits.

Physical capital

The higher proportion of houses for both ethnic and non-ethnic communities were made with mud-walled with tin-roof roof followed by mud-walled with the sun-grass roof (Table 5). Only 5% of the ethnic respondents had houses made with brick-wall and tin roof while 8.5% of the non-ethnic respondents had houses with brick-wall and tin roof (Table 5).

Table 5. Respondents' status of physical capital.

Aspects of physical capital considered	Ethnic respondents		Non-ethnic respondents	
	Non-project	Project	Non-project	Project
Structure of house (%)				
Mud-walled and sun-grass roof	38	29	22	18
Mud-walled with tin- roof	36	40	52	48
Tin-walled with tin-roof	22	25	19	24
Brick-walled with tin-roof	4	6	7	10
Livestock				
Small (mean \pm SD)	4.74 \pm 3.62	4.74 \pm 3.62	5.13 \pm 3.62	4.31 \pm 3.75
Large (mean \pm SD)	1.87 \pm 1.46	2.11 \pm 1.27	2.15 \pm 1.39	2.07 \pm 1.51
Food and nutrition security improved				
Yes (%)	51	70	77	65
No (%)	49	30	23	35
Sanitation situation improved				
Yes (%)	49	69	78	52
No (%)	51	31	22	48
Home appliances increased				
Yes (%)	47	64	70	55
No (%)	53	36	30	45
Access to safe drinking water				
Yes (%)	48	70	74	62
No (%)	52	30	26	38

During the field survey, it was observed that the overall housing situation of project farmers was a bit better than non-project farmers in both the communities and the situation of project farmers living in non-ethnic community was slightly better than project living farmers in the ethnic community. The livestock situation was more or less similar in both the categories of farmers in the ethnic and non-ethnic community. Almost all of the respondents in the ethnic community were found with at least one pig in their households, none of the households, on the contrary, in the non-ethnic community were found with even one pig. This may be because of the cultural difference between the ethnic and non-ethnic

community. Concerning food and nutrition security, sanitation situation, the number of home appliances and access to safe drinking water, the project farmers' conditions was found more improved than non-project farmers in both the communities. Arifa *et al.* (2016) found similar findings in their study conducted in Mymensingh district. This may be because of project intervention emphasizing different aspects of improving physical capital for the project farmers.

Social capital

It was reported during field observation that OHOF project created a social platform and the project

beneficiaries were organized as a small social group. The involvement of project beneficiaries in social and community organization was higher than that of non-

project farmers in both the communities (Table 6). The project farmers had more close relation with field-level project personnel than non-project farmers.

Table 6. Respondents' status of social capital.

Aspects of social capital considered	Ethnic respondents		Non-ethnic respondents	
	Non-project	Project	Non-project	Project
Involvement with social and community organizations increased				
Yes (%)	51	70	53	77
No (%)	49	30	47	23
Relationship with project personnel				
Improved (%)	19	74	23	88
Not improved (%)	81	26	88	12
Skills in group activity increased				
Yes (%)	48	75	51	85
No (%)	52	25	49	15

Frequent contact of project personnel with project beneficiaries in both the communities plays an important role to have a very good relationship among them. The non-project farmers, on the other hand, had very few opportunities in this regard. Regarding the findings on skills of group activity, the skills of project farmers were significantly higher than that of non-project farmers. The more or less similar findings were reported by Islam et al. (2013) in their study. This may be because OHOF project has taken some skill development initiatives with project beneficiaries in the study areas.

Financial capital

Data in Table 10 indicates that the credit accessibility to project farmers was easier than that of non-project farmers for both the communities in the study area. Findings concerning employment generation shows that the percentage of respondents was higher with the response 'yes' for project farmers than that of non-project farmers. Arifa *et al.* (2016) reported similar findings in their study in Mymensingh district. This may be because the OHOF project has initiated some avenues which were closely related to generating income for the project beneficiaries.

Table 7. Respondents' status of financial capital.

Aspects of financial capital considered	Ethnic respondents		Non-ethnic respondents	
	Non-project	Project	Non-project	Project
Easy access to credit				
Yes (%)	30	62	48	74
No (%)	70	28	52	26
Employment generation				
Yes (%)	35	69	46	75
No (%)	65	31	54	25
Income status increased				
Yes (%)	33	70	49	77
No (%)	67	30	51	23

The project farmers were getting benefit for those interventions which was not possible for the non-project farmers. For both the communities, the income status

was improved more for the project farmers than that of non-project farmers. This implies that the OHOF project has undertaken initiatives such as skill development for

running a small business (farm and off-farm), efficient use of resources, employment creation, effective management of farm and home which were directly related to increasing the income status of project beneficiaries.

Livelihood Outcomes

Livelihood strategies with the utilization of the capitals achieve an output which is termed as livelihood outcomes. They are likely to vary according to place, time, context and individual. This makes them extremely complex. These outcomes demonstrate the output of the current relationship of factors within the livelihood framework. Livelihood outcomes directly affect the respondents' assets and vigorously affect their level on the Sustainable Livelihood. The sustainability of rural and urban livelihood is assessed based on this goal or livelihood outcomes (USAID, 2011; WWF, 2008). In this work, livelihood outcome for sustainability is assessed based on following achievements - increased income, good living condition, reduced vulnerability, improved health, food security, nutrition security and gender equity (Table 8). The respondents in the non-ethnic

community were a bit more advanced in the case of two aspects such as 'increased income' and 'good living condition' in comparison to ethnic respondents. More than half of the respondents in both categories were found with a high level of satisfaction concerning the improvement of their livelihoods for project intervention. In the case of only one aspect such as 'gender equity', the situation of improvement was a bit better than that of non-ethnic respondents. This was because easy access to move of women in ethnic community compares to non-ethnic one. Islam and Sato (2012) reported that income from participatory forestry programs had a strong positive relationship with the household income of the project participants. They reported that the financial situation of ethnic participants was a bit lower than that of non-ethnic ones. However, most of the respondents in the study areas strongly opined that household income is very important not only for maintaining good living conditions but for giving tackle the adverse situations. Almost all of the sampled respondents' form both the communities were found positive about OHOF project intervention for improving their livelihoods situation.

Table 8. The satisfaction of project beneficiaries upon livelihood outcomes.

Aspects of livelihood outcomes	(Ethnic community: N= 35)			(Non-ethnic community: N=41)		
	Extent of satisfaction			Extent of satisfaction		
	Low	Moderate	High	Low	Moderate	High
Increased income	7 (20)	10 (29)	18 (51)	4 (10)	9 (22)	28 (68)
Good living condition	8 (23)	8 (23)	19 (54)	5 (12)	10 (24)	26 (64)
Reduced vulnerability	7 (20)	8 (23)	20 (57)	7 (17)	12 (29)	22 (54)
Improved health	8 (23)	9 (26)	18 (51)	5 (12)	14 (34)	22 (54)
Food security	7 (20)	8 (23)	20 (57)	6 (15)	10 (24)	25 (61)
Nutrition security	8 (23)	8 (23)	19 (54)	7 (17)	10 (24)	24 (59)
Gender equity	5 (13)	7 (20)	23 (57)	10 (24)	11 (27)	20 (49)

Note: Figure in parenthesis () indicate the percentage of project beneficiaries with their extent of satisfaction.

Ethnicity Bias Upon Livelihood Capitals

The findings on different capitals of livelihood such as human, natural, physical, social and financial presented in Table 3, 4, 5, 6, and 7 respectively reveal that almost all of the cases the situation of improvement livelihood capitals was better for project beneficiaries to reside in the non-ethnic community than that of ethnic one. Data in Table indicate clearly that the higher percentage of project beneficiaries with high satisfaction upon six aspects out of seven was from the non-ethnic community than the ethnic one on improving their livelihood

outcomes due to OHOF project intervention. Nearly one-fifth of project beneficiaries reside in the ethnic community, on the contrary, were reported with a low level of satisfaction upon six aspects out of seven concerning the improvement of livelihood outcomes which was higher compared to project beneficiaries reside in the non-ethnic community. This was because of bias of the field level personnel of OHOF project who mostly came from the non-ethnic community. Due to this, the non-ethnic project beneficiaries had received a bit more facilities such as credit and training support,

frequent discussion meeting, technical support to establish a small business and other advisory services than ethnic-project beneficiaries though there was a provision of the OHOF project to provide equal facilities to all project beneficiaries irrespective of race and communities. While introducing market-driven strategies and policies in southern Bangladesh and northern Thailand, ethnic minorities have not only been sidelined and alienated in the process of economic development, their traditional customary rights even have been overlooked (Barney, 2007; Mustafa and Ali, 2005; Sato, 2000) reported that the development interventions could not contribute significantly to poverty reduction of the ethnic communities in Bangladesh. Moreover, these development interventions failed to or did not recognize the psychological, social, cultural and spiritual aspects of ethnic communities in Bangladesh. This may be because of a very few representations of ethnic minorities in the development policy planning, on one hand, inadequate project implementation personnel at field level drawn from Ethnic communities, on the other hand.

Vulnerability Context and Project Intervention

Assessing the local vulnerability context is a key part of livelihoods analysis. The external environment affects different households and different people differently. Vulnerability is a hypothetical and probability-related context (Blaikie *et al.*, 2014) and is an integral part of the livelihood framework which depends on location and time. The vulnerability context refers to the seasonality, trends and shocks that affect people's livelihoods. Participants' livelihoods and the availability of capitals are mostly affected by the vulnerability context i.e. the external factors. The key attribute of these external factors is that they are not susceptible to control by local people themselves. These external factors are important because they have a direct impact on each participant's capital/assets status (DFID, 2001). It is, therefore, important to identify indirect means by which the negative effect of the vulnerability context can be minimized-including building greater resilience and improving overall livelihood security. The OHOF project has adopted some initiatives based on priority to reduce the extent of vulnerability in the study areas which were taken into account for this study (Table 9).

Table 9. Comparison between vulnerability along with project intervention.

Vulnerability context	The extent of severity in ethnic community			Extent of severity in non-ethnic community			Intervention
	L	M	S	L	M	S	
Crop damage and life threat by a wild elephant			✓	✓			Group formation and increase soil integration
Forest resource degradation			✓	✓			Request forest department to take measure against forest degradation by involving local people
Unavailability of safe drinking water			✓		✓		Installation of tube well
Gradual declination of soil fertility		✓				✓	Organize soil fertility and fertilizer management training
Crop damage through pest and diseases		✓				✓	Weather forecasting and motivate on a community-based approach
Familial crisis due to natural disaster such as storm, flash flood, drought etc.		✓				✓	Input and credit support

The contexts of vulnerability and their severity were not equal in the two communities studied. 'Crop damage and life threat by wild elephant' and 'forest resource degradation' and 'unavailability of safe drinking water' were severe in the ethnic community while 'gradual declination of soil fertility', 'crop damage through pest and diseases' and 'familial crisis due to a natural disaster such as storm, flash flood and drought etc. were opined as severe by the respondents in non-ethnic community. Though there were some more vulnerability contexts were needed to be considered to sustain the livelihoods of respondents, the OHOF project has started to address those issues which need short time, can solve with involving community members and requires a minimum amount of credit. Islam and Sato (2012) reported that participants' social capital was severely affected by the frequently occurring conflicts, and the ethnic participants experienced increases vulnerability because of conflict with the personnel of forest department and other surrounding communities as well in community forestry project. However, the respondents of both the

communities opined that the OHOF intervention is not sufficient to address all vulnerability contexts of the locality and needs a more comprehensive approach.

Performance of Project Personnel

Performance Evaluation is a formal and productive procedure to measure an employee's work and results based on their job responsibilities. It is an integrated platform for both, the employee and employer, to attain common ground on what each think is befitting a quality performance. This helps in improving communication which usually leads to better and more accurate team metrics and thus, improved performance results (Cappelli and Conyon, 2017).

It also plays a direct role in providing periodic feedback to employees, such that they are more self-aware in terms of their performance metrics. For this study, we investigated the performance of field-level project personnel against their committed areas of working by the satisfaction project beneficiaries (Table 10).

Table 10. Project farmers' satisfaction upon the performance of OHOF personnel.

Committed working areas	Ethnic community (N=35)			Non-ethnic community (N=35)		
	Extent of satisfaction			Extent of satisfaction		
	No	Moderate	High	No	Moderate	High
Formation of somite/group	7 (20)	8 (23)	20 (57)	4 (10)	8 (19)	29 (71)
Provide technical support to run a family farm	9 (26)	7 (20)	19 (54)	5 (12)	6 (15)	30 (73)
Dissemination of useful farm and home management information	10 (29)	12 (34)	13 (37)	5 (12)	10 (24)	26 (64)
Conduction of training programmes with project beneficiaries	10 (29)	15 (42)	10 (29)	3 (7)	7 (17)	31 (76)
Organize regular meeting with somite/group members	10 (29)	12 (34)	13 (37)	5 (12)	9 (22)	27 (66)
Provide support to get credit facilities from Bank (s)	10 (29)	13 (37)	12 (34)	5 (12)	7 (17)	29 (71)
Regular monitoring of project activities through frequent visit	8 (23)	11 (31)	16 (46)	5 (12)	9 (22)	27 (66)
Provide support service during familial crisis or project members	10 (29)	12 (34)	13 (37)	5 (12)	8 (20)	28 (68)

Note: Figure in parenthesis () indicate the percentage of farmers with their extent of satisfaction.

The highest proportion of project beneficiaries in ethnic communities were found with high satisfaction upon 'formation of somitee/group (57%)', 'provided technical support to run a family (54%)' among the committed working areas of project personnel. The project personnel did not receive high satisfaction score for remaining six (6)

working areas even from half of the respondents living in ethnic communities. Besides, more than one-fourth of the respondents were not satisfied with the performance of project personnel concerning all of the committed areas of working except two working areas such as 'formation of somitee/group' and 'regular monitoring of project

activities through frequent visit' in ethnic communities. More than two-thirds of the project beneficiaries in non-ethnic communities, on the other hand, expressed their high satisfaction upon the performance of project personnel in all of their committed working areas. Around one-tenth of the respondents in the non-ethnic community were found with not satisfied with the performance of project personnel which was lower than that of respondents in the ethnic community. This may be because most of the field-level project personnel belong to a non-ethnic community who always try to render more facilities to the beneficiaries living in the same community of them. The performance of field level workers of One House One Farm project was not satisfactory. (Arifa *et al.*, 2016).

CONCLUSIONS AND RECOMMENDATIONS

One House One Farm (OHOF) initiative has contributed in several ways to improve the livelihoods of project beneficiaries. Experience of OHOF so far has shown that the livelihood situation of rural people has improved to an extent by introducing micro-credit system, increasing the availability of resources, mobilizing household resources and providing potential avenues for income-generating activities. Livelihood strategy, access to capitals/assets, vulnerability contexts is not similar in different communities and these vary from one community to others. Diverse livelihood perspectives even exist within a community. OHOF approach has contributed to the improvement of livelihoods of project farmers in four ways: i) facilitate to easy access of credit; ii) improve farmers' knowledge and skills about the farm and home management through offering training; iii) create employment opportunities, and iv) facilitate to bring social changes.

OHOF initiative has increased social cohesion through developing somitee, which has enhanced the social capital of those who have been powerless, left in isolation from mainstream social and political processes. Some aspects of physical and natural capitals have been improved through OHOF project activities in the study areas. Since the inception of the OHOF project, several training sessions, workshops and discussion meetings, and exposure visit have been conducted for many organizations and individuals related to the effective management of home and farm that have increased knowledge and skills of the project farmers and develop their leadership capability and sense of community development, all of which are human capital.

Though OHOF initiative has become a means to increase the human, natural, physical, social and financial capital of project farmers compare to non-project ones, all are not equal in ethnic and non-ethnic communities. The situations of project farmers in the non-ethnic community regarding different livelihood aspects were better than that of project farmers in the ethnic community. This is because the field level implementing agency did not give equal importance to project beneficiaries living in the ethnic and non-ethnic community.

The performance of project personnel was reported with some sort of discrimination between the communities studied. However, identification of contexts of vulnerability, especially short-term ones in both the communities and some initiatives to address those helped reduce the vulnerable situation of local people to an extent may be considered as one of the good attempts of OHOF approach. However, though of OHOF approach has improved the livelihoods of project farmers, there are also some challenges remain in it. In particular, working relations between field-level project personnel with the members of the ethnic community, the issue of equality of providing project benefit to all categories of community members (ethnic and non-ethnic), and complexity of addressing the diversified needs and interests of multiple stakeholders as well as weak monitoring system are the main challenges. A strong commitment from each stakeholder and a system of frequent monitoring of field activities could overcome these which might improve the livelihoods of smallholder farmers in Bangladesh irrespective of community differences.

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