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Study on Home Based Farming: Inputs and Diversity

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Abstract: Home based farming is a notable practice in the study area. Farmers grew diverse product by using locally available low cost or zero cost inputs from their own sources, neighboring people or local market. The effort made them self-reliant through farm profitability. They were used family members for their farm production by creating self-employment. Few problems were identified including marketing, low price, storage loss and lack of fair price.

Keywords: Home based farming; Inputs; Diversity; Self-employment; Profitability.

1. Introduction

Farming can classify into different categories. Basically farmers cultivate land in commercial purpose. Some of them cultivate their own land and some of them borrow others land to cultivate. But in the village some people cultivate beside their house in very short amount to fulfill their own need. They cultivate beside their house and usually do it for their own need. Sometime they sell it to the market for some profits. Still now, home based farming is a self-motivated income plan in the rural areas of Bangladesh. In the village the people with huge area of land beside their residence are usually involve in home based farming. Usually they grow different types of vegetables. They grow poultry, cattle's and fishes also. But the produce very short amount. Home based farmers are farming their land for fulfill their own need but now a day's farmers are doing home based farming in a commercial way. As this kind of farming is profitable so farmers prefer it. Home garden is subsequently a pocket system of household production [1] and an old aged-longfood security approach [2] due to some its wide variety of produce and informal nature.

Home based farming has turn into an essential part of cultural heritage [3] which indicates specific farming practices at different scales and localities. It is therefore inappropriate to attribute definite and effective cultural practices to the management and ownership of home gardening because home gardening has been a way of life for centuries [4]. The encouraging impacts of home based farming are well recognized. The farming inputs for home based farming usually come from own home. The structure of diversity of home based farming is very much linked with biodiversity. The contribution of home based farming yet to calculate in the family economy as well as in the national economy. The main objective of this study was to know the status of home based farming at Alipur union under Rajbari district. The other associate objectives are to: i) list down the produces were produced from home based farming; ii) know the types and land area required for home based farming; iii) know the production status; iv) know the inputs required in home based farming; v) Find out the source of the inputs; vi) assess labor involvement in home based farming; viii) highlights the use pattern of home based production; viii) calculate the cost of production; ix) assess on required skills in home based farming; x) find out the problems related to home based farming; and xi) recommend the solutions to overcome the problems related to home based farming

2. Methodology

The study was conducted over a period of two months started from November and ended by December 2012. The study was concentrated in 6 villages of Alipur union under Rajbari district. Total 30 home based farmers (respondents) were selected for this study. Both male and female farmers were selected for the study to get more reflections about home based farming. Total 3 groups were conducted for the study, among three groups one interview was conducted with the farmers whose farming age was below 5 years; one group farming age was in between 5-10 years and one group farming age was above 10 years. Data were collected from both primary and secondary sources. Secondary data were collected from different sources including, books, journals, internets and others. Primary data were collected from the field with guided semi structured questionnaire. The entire works involves field work, information on the study area, respondent selection, preparation of questionnaire and field testing and focused on group including respondent selection. After collection of data it was crosschecked and validated for its reliability. Data were analysed and presented in the tabular form. Results were disseminated through seminar for feedback and consent related to study.

3. Results

3.1. Perception of Home Based Farming

Farmers cultivate land for own consumption and surplus for selling in the market. Some of them cultivate their own land and some of them borrow others land to cultivate. But in the study village some people cultivate beside their house in very short amount to fulfill their own need. They cultivate beside their house and usually do it for their own need. Sometime they sell it to the market for some profits. In the village the people with huge area of land beside their residence are usually involve in home based farming. Usually they grow different types of vegetables. They grow poultry, cattle's and fishes also. But the produce very short amount. Home based farmers are farming their land to fulfill their own need but now a day's farmers are doing home based farming in a commercial way.

3.2. Reasons for Home Based Farming

In the study area (Alipur Union, Rajbari) there are nine villages. In these villages the population is not huge like the cities. There are many spare lands beside the houses. So the people who have the spare lands beside their homes they are like to cultivate vegetables and grow others things. Usually they do this farming to fulfill their own need. But some time they sell it in the market so by this method they can fulfill their needs and as we as earn some surplus money too. Seventy percent respondents do home based farming in the study area depending land size.

3.3. Produce Diversity in Home Based Farming

The productions are mainly vegetable, poultry and fisheries. In the study area as they produce to fulfill their own need so vegetables production is the prime concern. The others crops are also grown by the farmers rarely. Hundred percent respondents were grown vegetables followed by cattle farming, poultry rearing, fish farming and others respectively (Table I).

Table-I. Produce diversity

Name of the productions	Farm category			All N=30
	Category A N=10	Category B N=10	Category C N=10	
Vegetables	10 (100)	10 (100)	10 (100)	30(100)
Poultry	8 (80)	9 (90)	10 (100)	27(91)
Fish	8 (80)	2 (20)	6 (60)	16(53)
Cattle	9 (90)	10 (100)	10 (100)	29(97)
Others	3 (30)	4 (40)	6 (60)	13(41)

N=Number, Figure in parenthesis indicates percent value

3.3.1. Types of Cattle and Poultry in the Home Based Farming

Hundred percent respondents were mentioned that they have own chicken followed by cows, goat, duck, lamb, Cooyal and pigeon respectively (Table II). Table II, respondents from both farm category B and C were reported they have had cows. The farm category C was reported that they have no Cooyal for rearing. Maximum duck were reported by the farm C.

Table-II. Types of cattle and poultry

Name of the cattle & Poultry	Farm category			All N=30
	Category A N=10	Category B N=10	Category C N=10	
Cow	9 (90)	10 (100)	10 (100)	29(97)
Pigeon	2(20)	3(30)	1(10)	6(20)
Goat	7 (70)	4 (40)	6 (60)	17(57)
Lamb	6 (60)	4 (40)	3 (30)	13(43)
Chicken	10 (100)	10 (100)	10 (100)	30(100)
Duck	4 (40)	6 (60)	7 (70)	17(57)
Cooyal	7 (70)	2 (20)	0 (0)	9(30)

N=Number, Figure in parenthesis indicates percent value

3.3.2. Types of Vegetables and Spices in the Home Based Farming

Total eighteen vegetable species and eight spices were reported by the respondents from all farms (Table III). The most common vegetable species were reported by the respondents including spinach, potato and papya. Eighty percent respondents from all farms were reported that they grew onion in their farms.

Table-III. Types of vegetables and spices

Name of the vegetables	Farm category			All N=30
	Category A N=10	Category B N=10	Category C N=10	
Spices				
Onion(<i>Allium cepa</i>)	8 (80)	6 (60)	5 (50)	19(63)
Chili (<i>Capicum species</i>)	8(80)	8(80)	8(80)	24(80)
Turmeric (<i>Cucarma longa</i>)	3(30)	2(20)	4(40)	9(30)
Ginger(<i>Zingiber officinale</i>)	1(10)	2(20)	3(30)	6(20)
Bay leaf (<i>Pimenta acris</i>)	1(10)	1(10)	1(10)	3(10)
Coriander(<i>Coriander sativum</i>)	5(50)	5(50)	6(60)	16(53)
Black Cumin (<i>Nigella sativa</i>)	3(30)	4(40)	5(50)	12(40)
Cinnamon (<i>Cinnamum zeylanicum</i>)	3(30)	2(20)	4(40)	9(30)
Vegetables				
Sweet Gourd(<i>Cucarbita moschata</i>)	6 (60)	4 (40)	7 (70)	17(57)
Carrot(<i>Daucus carota</i>)	5 (50)	5 (50)	5 (50)	15(50)
Spinach(<i>Spinachia oleraceae</i>)	10 (100)	10 (100)	10 (100)	30(100)
Sweetgourd (<i>Cucarbita maxima</i>)	7 (70)	6 (60)	3 (30)	16(53)
Bottle gourd (<i>Lagenaria siceraria</i>)	3 (30)	5 (50)	9 (90)	17(57)
Tomato(<i>Lycopersicon esculentum</i>)	9 (90)	7 (70)	0 (0)	16(53)
Radish (<i>Raphanus sativus</i>)	6 (60)	5 (50)	6 (60)	17(57)
Potato(<i>Solanum tubersum</i>)	9 (90)	9 (90)	9 (90)	27(90)
Cucumber(<i>Cucumis sativus</i>)	2 (20)	0 (0)	0 (0)	2(7)
Brinjal (<i>Solanum melongena</i>)	7 (70)	6 (60)	8 (80)	21(70)
Ribbedgourd(<i>Lufia acutangula</i>)	5 (50)	6 (60)	3 (30)	14(47)
Plantain(<i>Musa paradisica</i>)	7 (70)	7 (70)	6 (60)	20(67)
Sweet potato(<i>Ipomoea batatus</i>)	0 (0)	0 (0)	5 (50)	5(17)
Indian Spinach (<i>Basella alba</i>)	8 (80)	5 (50)	0 (0)	13(43)
Cauli flower(<i>Brassica oleracea</i>)	5 (50)	3 (30)	4 (40)	12(40)
Cabbage	5 (50%)	4 (40%)	3 (30)	12(40)
Papaya(<i>Carica papaya</i>)	9 (90)	9 (90)	9 (90)	27(90)
Bean (<i>Lablab niger</i>)	3(30)	4(40)	6(6)	13(43)

3.4. Land Holding Pattern in Home Based Farming

There is no specific requirement of area in home based farming. They use their spare place for beside their home for farming. Farmers are farming both in their own land and in others land. More than seventy percent respondents were possessed own land followed by share cropping, lease land, mortgage and both (Table IV).

Table-IV. Land holdings of the respondent

Farming land	Farm category			All N=30
	Category A N=10	Category B N=10	Category C N=10	
Own Land	6(60)	7(70)	9(90)	22(73.33)
lease Land	3(30)	3(30)	0(0)	6(20)
Mortgage	1(10)		1(10)	2(6.67)
Share cropping	5(50)	2(20)	1(10)	8(26.67)
Both	1(10)	0(0)	1(10)	2(6.67)

N=Number, Figure in parenthesis indicates percent value

3.5. Production Status

As they are not farming in a commercial way so their production status is not so much good. Mainly they farm for themselves so they are not so much worried about their production status. But the production status varies depends their land and other things. For the category A production status are medium for the category B production status are good and for the category C production status are more than A but less than B (Table V).

Table-V. Production Status indicator

Farm Category	Production Status				
	Vegetable	Poultry	Fisheries	Cattles	Others
Category A N=10	Medium	High	Medium	High	Low
Category B N=10	Medium	High	High	High	Medium
Category C N=10	High	Low	Medium	High	Low

N=Number, Figure in parenthesis indicates percent value

3.6. Inputs Required in Home Based Farming

As the farm located in their homesteads and adjacent to the homestead, they are not too much worried about high production. They usually use the cow dung and processed compost for the production especially vegetables production. In the some extent, they use chemical fertilizers too. 100% respondents were used cow dung for home based farming followed by urea, MP, others and TSP respectively (Table VI). Cattle and poultry farming are very much common in the study area. On the other hand, those farmers were actively involved with cattle & poultry farm are feeding straw, oilcake, rice bran. The farmer who has cattle and poultry, they used cow dung and poultry litters as fertilizer for their vegetables and fish production. For the cattle's they use grass and straw as their main inputs. They also use the waste of vegetables, oil cake, husk, juice of boiled rice, malachite, maize and so others things they use as inputs for cattle's (Table VII).

Table-VI. nputs for Vegetables

Name of the Inputs	Farm category			
	Category A N=10	Category B N=10	Category C N=10	All N=30
Cow dung	10 (100)	10 (100)	10 (100)	30(100)
Urea	5 (50)	4 (40)	4 (40)	13(43)
MP	2 (20)	1 (10)	1 (10)	4(33)
TSP	4 (40)	1 (10)	0 (0)	5(17)
Others	5 (50)	5 (50)	5 (50)	15(30)

N=Number, Figure in parenthesis indicates percent value

Table-VII. Inputs for Cattle rearing

Name of the inputs	Farm category			All N=30
	Category A N=10	Category B N=10	Category C N=10	
Grass	10 (100)	10 (100)	10 (100)	30(100)
Straw	10 (100)	10 (100)	10 (100)	30(100)
Oilcake	10 (100)	10 (100)	10 (100)	30(100)
Husk	10 (100)	10 (100)	10 (100)	30(100)
Juice of oil rice	9 (90)	10 (100)	10 (100)	29(97)
Malachite	9 (90)	10 (100)	10 (100)	29(97)
Maize	7 (70)	9 (90)	10 (100)	26(87)
Pea	4 (40)	5 (50)	3 (30)	12(40)
Urea	8 (80)	4 (40)	3 (30)	15(50)
Others	5 (50)	5 (50)	5 (50)	15(50)

N=Number, Figure in parenthesis indicates percent value

3.7. Family Dependency on Home Based Farming

Most of the families of the study area depend on home based farming. Actually they involve in home based farming to fulfill their own need (Table VIII). Some of them are selling their product in the market but after fulfill their own need. But category A farmers involve in home based farming for sell their product in the market to earn profit. They do it semi-commercially. But the other two categories farmers do it non-commercially but some time when they have good no of production they sell it in the market.

Table-VIII. Labor involvement in home based farming

Involvement	Farm category			All N=30
	Farm A N=10	Farm B N=10	Farm c N=10	
Own	4(40)	7(70)	8(80)	19(67)
Commercial	6(60)	3(30)	2(20)	11(33)

N=Number, Figure in parenthesis indicates percent value

3.8. Use Pattern of Home Based Production

Farmers who involved in home based farming basically farm their land for their own need. But now a day some of them do farming commercially. The use pattern of their production varies from person to person. Hundred percent respondents are farming for their own consumption followed by commercial, gifts and others (Table IX).

Table-IX. Use pattern of productions

Farm category	Use of home-based production			
	Personal	Commercial	Gift to the others	Others
Category A N=10	10(100)	5(50)	4(40)	1(10)
Category B N=10	10(100)	4(40)	4(40)	1(10)
Category C N=10	10(100)	3(30)	1(10)	1(10)
All N=30	30(100)	12(40)	9(30)	3(10)

N=Number, Figure in parenthesis indicates percent value

3.9. Cost and Profits from Home Based Farming

The cost of the production of home based farming is not too high. There are two types of home based farmers. i) who farm their own land; ii) who farm others land. So the farmers who farm their own land they need minimal cost for farming. They invest their family labor and own inputs for the production. They don't need any extra cost. On the other hand, the farmers who farm on others land, they need high input cost. They have to pay land rent in cash or from their productions. The farmers from option 1 can maximize the profit from their production. They fulfill their own need and sell the rest of the product in the market and can secure profit. The farmers from category A can earn huge profit by selling their product in the market. Some of the farmers are doing farms at the breakeven point or at minimal profit. They usually do farms from their cultural context over generation to generation. Sixty percent from all farm categories were reported farm profitability followed by both and non-profitable (Table X). Farm category A were mentioned higher profitability followed by farm B and farm C respectively (Table XI)

Table-X. Farming for profit

Profitability	Farm Category			All N=30
	Category A N=10	Category B N=10	Category C N=10	
Profitable	7 (70)	5 (50)	8 (80)	20(60)
Non- Profitable	0 (0)	2 (20)	1 (10)	3(9)
Both	3 (30)	3 (30)	1 (10)	7(21)

N=Number, Figure in parenthesis indicates percent value

Table-XI. (Cost and profit Monthly Average)

Farm Category	Average Cost (BDT)	Average Income (BDT)	Average Profit (BDT)
Category A N=10	17000	25000	8000
Category B N=10	13000	18000	5000
Category C N=10	10000	13000	3000
All N=30	13333	15333	5333

N=Number, Figure in parenthesis indicates percent value

3.10. Time Duration of Home Based Farming

Basically home based farmers don't have any specific time for farming. They farm their land seasonally. Sometime they grow seasonal crops. So they do have any time duration of farming.

3.11. Percentage of Male and Female Worker Involve in Home Based Farming

The percentage of male and female workers involve in home based farming are more or less equal. It depends on the area of farming and the mentality of the people. Mainly the home based farming started by the female farmers. As they are farming near the home so the female workers don't have problem to work in the field. For the poultry farm the female workers are doing very well. The male workers are mainly enrolling the home based farming they mainly start home based farming as commercial way. Seventy percent respondents from all farms category were reported that female is the lead farmer in the home based farming (Table XII).

Table-XII. Percentage of male and female workers in Home based farming

Categories	Percentage of Male & Female workers	
	Male	Female
Category A N=10	4(40)	6(60)
Category B N=10	3(30)	7(70)
Category C N=10	2(20)	8(80)
All N=30	9(30)	21(70)

N=Number, Figure in parenthesis indicates percent value

3.12. Training of the Home-Based Farmers

The home based farmers are not professional so they don't need any training but some of them have basic training on farming provided by the Bangladesh Krishi Songstha, Grameen Bank and other NGO's. Only 23% respondents were mentioned for the need of training (Table XIII)

Table-XIII. Training of home based farmers

Farm Category	Training	
	Trained	Not-trained
Category A (N=10)	4 (40)	6 (60)
Category B (N=10)	1 (10)	9 (90)
Category C(N=10)	2 (20)	8 (80)
All (N=30)	7(23)	23(77)

N=Number, Figure in parenthesis indicates percent value

3.13. Problems of Home Based Farming

Several problems were recognized by the respondents including lack of finance, land holdings (minimal lands), lack of own seeds, scarce of livestock's & fodder and minimum knowledge base (training). Even they don't have sufficient land in their homesteads for home based farming.

4. Discussion

Home based farming is very much common in the rural areas. Most of rural poor people are doing this beside their house. As per study findings, most of the respondents opined that they are habituated with home based farming and mostly depend on home based inputs especially for agricultural production. Around 85.5% peoples are involved in farming of which 56% are very much reliable on home based inputs in the study area. The size of the farms differs from small to large. Results showed that mostly small holding farms utilized home based inputs for agricultural production. A few numbers of large farm were used both farm based inputs and external inputs. The location of home based farming in the homestead or very adjacent to homesteads. Home based farming contributes a lot to food security through direct access to nutritional foods; enhanced buying capacity from savings and extra income from sales of farms' products and fall-back food provision during critical lean periods [5]. Home based farming contributing through the twin concept of sustainability: ecological sustainability and socioeconomic sustainability. A home based farming is ecologically sound yield is relatively adequate through ecosystem potentials in the garden. Recycling and uses of own farm based inputs accelerate continuous interaction between biotic and abiotic components should result in a stable and productive system. The use of local knowledge in home based farming can attain socioeconomic sustainability and increase unit yield. Multiple cropping and the application of own home based inputs (seeds, organic materials) push high the ecological and socioeconomic sustainability in home based farming. The uses of own inputs and nature friendly inputs pick up the natural link between humans and their natural environment. It may signify home based farming means low cost farming. This farming practice sticks to the

ecologically friendly farming systems and encouraging sustainability in ecological succession [6]. The approach is viewed as a management strategy using reduction in the cost of farm inputs and protecting the natural environment [7, 8].

5. Conclusion & Recommendations

At the end of the study it could be said that the home based farming plays an important role in the village economy. Home based farming contributes a lot in food security as well as for the national economy. Training is the crucial task to impart the technical efficiency and enhance home based farm's production. The home based farmers are facing problems in a continuum manner. They don't know how to get rid of the problems. Several problems including lack of land, lack of fertilizer, lack of quality seeds and lack of space were mentioned by the respondents. The Government should take care on home based farming by providing incentives, seed money and subsidies on inputs for sound farming.

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