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Livelihood of the farmers of Char villages of Dhubri district of Assam: A case study

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Abstract
The present study was undertaken to investigate the pattern of livelihood and to find out the problems faced by the farmers of Char areas of Dhubri district of Assam to improve their livelihood through sound agricultural background. The study was confined to the selected Char areas of the district, namely Faujdar Char, Simlabari and Bamunpara Part IV village. The quantitative study collected information using personal interview of each farmer through a semi-structured questionnaire. A multistage purposive cum random sampling design was followed for the purpose. A total sample of 150 farmers were randomly selected from the three indicated villages during 2021.
This study revealed that farmers were of poor economic condition with low literacy and knowledge about agricultural methods. The average family sizes were observed as 5.46, 4.27, 6.00 and 4.38 per cent for the small, marginal and large farmers, respectively. About 62.50% farmer belong to the age group of 31 to 40 years. While marginal and large farmer represent 73.17 and 46.15%, respectively. Most of the farmers in the char were not well educated. The percentage of illiterate groups were 20.45, 24.48 and 28.57 for the small, marginal and large farmers, respectively. The overall annual income of farmer was recorded as Rs. 15,000 to Rs. 20,000 per annum. The problems faced by the farmers have also been identified in this study. Lack of credit facilities, pest and disease incidence, recurring flood, low prices of farm output, high prices of inputs, lack of quality planting material etc. are major problems faced by the farmers in the study areas. It is imperative that the introduction of modern agricultural technologies can uplift the present status of the farming community in the Char areas.

Keywords: Char areas, cropping pattern, family size, literacy rate

Introduction

Chars are spread out all along the Brahmaputra river, from the easternmost to the westernmost corner of Assam. The river Brahmaputra and its tributaries generally carry suspended materials brought from the catchment areas. A small obstruction in the course of the rivers may give rise to Char made up of alluvium, silt and sand. Thus, between and by the side of the main bank of the river, there exist a large number of Char lands. (Talukder *et al.*, 2009) [10] In Assam, char lands cover an area of 3.61 lakh ha, out of which 2.42 lakh ha are under cultivation that support a large population of the farming community (Anonymous 2018) [1]. Easily cultivable soils of the chars may assist farmers to take up intensive cultivation of crops (Borkakati *et al*. 1999; Vadivelu *et a.,* 2005) [2, 11].

The National Productivity Council has classified chars with existence of more than 10 years as "permanent chars," chars with more than 5 years but less than 10 years as "semi-permanent chars" and those with less than 5 years as "temporary chars" (Kuddus, 2012). "The *chars* account for about 5 percent of the total area of the state spreading across 14 districts, 55 blocks and around 2,300 villages" (GOA, 2016) [6].

The Assam Human Development Report 2014 estimated that char areas have the highest multidimensional poverty among all regions of the state (GOA, 2016) [6]. Economic backwardness limits char dwellers' livelihood options. Severe floods adversely affect char areas and further restrict their economic opportunities. When the char residents migrate to mainland Assam, they face discriminations (Chakraborty, 2012) [4].

The limited number of studies that exist on chars paints a grim picture. The growth of population is high and grinding poverty and poor socio-economic indicators characterize char areas. There has been a continuous decline of per capita land in chars and more than half of the char dwellers were illiterate (Goswami, 2014) [5]. Chars are home to nearly 10 per cent population of Assam (Kumar and Das, 2019) [8].

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Mortality rate in the char areas was 8.6 per thousand and higher than the state average (Chakraborty, 2009) [3].

There are 480 numbers of Char villages in Dhubri district covering an area of 64,767 hectare. Economic backwardness limits Char dwellers' livelihood options. The char villages are socio-economically backward. Agriculture is the primary source of livelihood for the overwhelming majority of the farming community (Nath *et al*., 2021). So as to eradicate the problems of char people, it is necessary for the policy makers to identify and quantify the socio-economic factors which are inhibiting their growth and development. The researcher submits that data pertaining to the contribution of various economic activities among the farmers of Char area is mandatory for any economic development programmes. Though various studies on socio-economic conditions of farmers were carried out in India, studies are limited with reference to the Char area. The arable lands in the Char area are mostly low lying, scattered without irrigation facilities. The farmers are not accustomed with the modern agricultural input and practices. Keeping the above in view the study was undertaken in the char areas of Dhubri district, Assam with the following objectives:

- To study the means of livelihood of farmers
- To study the existing cropping and resource use patterns of the farmers
- To identify the problems faced by the farmers

Materials and Methods
Selection of the Study Area
A preliminary survey along with a Participatory Rural Appraisal (PRA) programme was conducted in association of Krishi Vigyan Kendra, Assam Agricultural University, Dhubri district, Assam. Based on preliminary information, three villages of the district, *viz*., Faujdar Char, Simlabari and Bamunpara Part IV village were selected for the study and from each village, 50 numbers of farmers were selected randomly for this quantitative study. A total of 150 respondents were selected using multistage purposive cum random sampling design for the study.

Period of Study
The survey was conducted in the first quarter of the year 2021. Repeated visits were made for collecting necessary information.

Collection of data
The data were collected through personal interviews with the 150 selected farmers of char area. A semi structured interview schedule was administered to individual respondents which were followed by group discussion to collect the relevant information pertaining to literacy, land ownership pattern, asset values etc. The academic purpose of the study was clearly explained to the sample farmers prior to commencement of the actual interview. At the time of interview the researcher asked the questions systematically and explained wherever it was felt necessary. Some secondary data were also collected from District Agriculture Office, Dhubri for the study.

Analysis of data
Data were analyzed with a view of achieving the objectives of the study. For this study, tabular analysis was applied to classify data in order to derive meaningful findings by using simple statistical measures like means, percentage and ratios, etc.

Results and Discussion
The study represents a brief description of the livelihood pattern and problems faced by the farmers of char villages the Dhubri district of Assam. The study represents a brief description of the socio-economic characteristic along with various constraints of the selected farmers of char villages. The livelihood variables along with production constraints, cropping pattern and Indigenous Technological Knowledge (ITK) follow by the farmers are given below.

Distribution of farmers by age
Age distribution of the selected farmers is presented in Table 1. It shows that the highest number of farmers (62.50%) belonged to the age group 31-40 years for small farmer while marginal and large farmer represent 73.17% and 46.15%, respectively. The table also indicates that the lowest number of farmers belonged to the age group 41 and above years (12.19%) while the highest proportion represents 31-40 years (73.17%).

Education level
The farmers were grouped into (i) Illiterate, (ii) Primary, (iii) HSLC, and (iv) above HSLC, based on the educational status and presented in Table 2. It can be seen from the table that percentages of illiterate groups were 20.45, 24.48 and 28.57, respectively for the small and marginal and large farmers. Percentages of farmers attending primary school were observed as 15.90, 16.32 and 19.04 while 52.27, 51.02 and 42.85 having HSLC level and 11.36, 8.16 and 9.52 attending above HSLC education for small, marginal and large farmer size categories, respectively. Considering the entire respondents, it was noticed that 23.68% farmers were illiterate, while 16.66% farmers had primary level of education. Again, 50.00% farmers had education level of HSLC and 9.64% farmers had education level above HSLC.

Average family size and composition
Family size (or family members) in this study has been defined as total number of persons living together and taking meal from the same kitchen under the administration of the same head of the family. The family member includes husband, wife, son, daughter, brother, father and mother. Table 3 indicates that maximum family members belongs to the age group 14 to 59 years for all the groups. The average family size of the farmers were 5.46, 4.27, 6.00 and 4.38 for the small, marginal, large and all farmers, respectively.

Major Cropping Pattern followed
The major cropping pattern followed by the farmers of char villages are depicted in the Table 4. Summer paddy – rabi vegetables, Summer paddy – spices, Jute – Summer paddy, Jute - rabi crops, Jute - rabi vegetables, Jute – spices etc. are the major cropping patterns followed by the farmers of the selected char villages.

Problems faced by the farmers of char villages
Among the various technological constraints (Table 5), lack of knowledge of scientific crop production ranked I (79.33%), whereas, occurrence of insect pests and diseases ranked II (70.00%). Further, crop damage due to flood (65.33%), lower price of paddy and higher cost of production (59.33%), use of over dose of pesticides and fungicides (54.67%), lack of

regular visit by extension personnel to villages (52.00%), lower price of green chilli (44.67%) and high wetness of soil for late *kharif* vegetables (39.33%) ranked III, IV, V, VI, VII and VIII, respectively. As regards to the infrastructural constraints, less cultivable land ranked I (70.00%), non-availability of quality planting material II (65.33%) and inability to purchase modern agricultural implements (61.33%) ranked III. Again, non-availability of agricultural chemicals in time (58.00%), lack of irrigation facilities (54.66%), crop damage by stray cattle (52.00%) ranked IV, V and VI, respectively. In context of the economical constraints, high cost of agricultural chemicals ranked I (70.66%), less profit ranked II (65.33%), non-availability of credit facilities in time ranked III (60.00%) and low selling price of agricultural produce ranked IV (55.33%).

Average annual income of farm families
Average annual income of the respondent households is one of the most important indicator of the socio-economic status. Average annual income of the respondent households has been estimated from the earnings of all active members of the farm sources. From the investigation, it was observed that the annual income ranges between Rupees 15,000 to 20,000 per annum.

Occupation of farmers
The occupation from which lion's share of the
Income is earned irrespective of time and labour devoted to it has been termed as the main occupation of the respondents in the present study. Agriculture was found to be the inherent and single major occupation of almost all the farmers during the study period. A bulk of the total labour force was engaged in agriculture. Only a small proportion of the farm families were found to have dealt with business, service and other occupation in addition to agriculture in the study area.

Conclusion
Existence of a wide gap between development of technologies and their transfer to actual farming situations is evident from the study. The constraints faced by the farmers could be overcome by the following proper strategies like suitable and intensified awareness and training programme and various field trials on scientific production technologies along with integrated pest management practices for pest and disease, etc. Farmers are to be encouraged to cultivate high yielding varieties to earn more profit for upliftment of their economic condition. The State Department of Agriculture and Zonal Research Stations may take concerted initiatives in this regard supported by financial institutions to provide credit facilities in terms of short-term loan to the farmers. Moreover, the State Government should prepare policy to provide the minimum support price in the state, which will encourage the farmers.

Based on the findings of the study, some policies and recommendations may be advanced which are likely to be useful for policy formulation such as educational facilities. Good, reliable transport and communication facilities should be provided for the people of char areas. Multiple cropping and intercropping should be actively encouraged. The government must make major moves to create permanent assets with farmers of char and provide infrastructural support for meeting input, credit and marketing needs. Extension agencies must visit the villages and interact with farmers. Training and demonstration should be provided in different income generating activities. If all the suggestions mentioned above are implemented in the char villages, the development of those backward areas can be seen in near future. By introducing facilities of modern technology, their socioeconomic standard can be increased. Thus this weaker part of the society can be turned into the huge mass of human resource. However, there is a scope of further investigations in this regard.

Table 1: Age distribution of farmers

Age wise Group (Years)	Small		Marginal		Large		All	
	No.	%	No.	%	No.	%	No.	%
20-30	8	20	6	14.63	4	30.76	18	19.14
31-40	25	62.5	30	73.17	6	46.15	61	64.89
41 and above	7	17.5	5	12.19	3	23.07	15	15.95
Total	40	100	41	100	13	100	94	100

Data represent the average of three villages

Table 2: Education Level of the char farmers

Education status	Small		Marginal		Large		All	
	No.	%	No.	%	No.	%	No.	%
Illiterate	9	20.45	12	24.48	6	28.57	27	23.68
Primary	7	15.90	8	16.32	4	19.04	19	16.66
HSLC	23	52.27	25	51.02	9	42.85	57	50.00
Above HSLC	5	11.36	4	8.163	2	9.52	11	9.64
Total	44	100	49	100	21	100	114	100

Data represent the average of three villages

Table 3: Average family size and composition

Age group	Particulars	Small		Marginal		Large		All	
		No.	%	No.	%	No.	%	No.	%
Below 14	Male	32	53.33	14	58.33	8	47.05	54	53.46
	Female	28	46.66	10	41.66	9	52.94	47	46.53
	Total	60	100	24	100	17	100	101	100
14-59	Male	55	69.62	59	67.04	22	59.45	136	66.66
	Female	24	30.37	29	32.94	15	40.54	68	33.33
	Total	79	100	88	100	37	100	204	100
59 and above	Male	9	60	7	58.33	3	60	19	59.37

	Female	6	40	5	41.66	2	40	13	40.62
	Total	15	100	12	100	5	100	32	100
Average family size		5.46		4.27		6.00		4.38	

Data represent the average of three villages

Table 4: Production Constraints of farmers (N= 150)

Sl. No.	Constraints	Frequency (F)	Percentage (%)	Rank
A	**Technological**			
i.	Lack of knowledge of scientific crop production	119	79.33	I
ii.	Lack of regular visit by extension personnel to villages	78	52.00	VI
iii	Low price of paddy and higher cost of production	89	59.33	IV
iv.	Low price of green chilli	67	44.67	VII
v.	High wetness of soil for late *kharif* vegetables	59	39.33	VIII
vi	Occurrence of insect-pests and diseases	105	70.00	II
vii.	Crop damage due to flood	98	65.33	III
viii	Use of over dose of pesticides and fungicides	82	54.67	V
	Average	87.12	58.08	
B	**Infrastructural**			
i.	Less cultivable land	105	70.00	I
ii.	Non-availability of quality planting material	98	65.33	II
iii.	Non-availability of agricultural chemicals in time	87	58.00	IV
iv.	Inability to purchase modern agricultural implements	92	61.33	III
v	Lack of irrigation facilities	82	54.66	V
vi.	Crop damage by stray cattle	78	52.00	VI
	Average	90.33	60.22	
C	**Economical**			
i.	Non-availability of timely credit facilities	90	60.00	III
ii.	High cost of agricultural chemicals	106	70.66	I
iii.	Low selling price	83	55.33	IV
iv.	Less profit	98	65.33	II
	Average	94.25	62.83	

Table 5: Major Cropping Pattern followed (with crop duration)

1st Crop	Duration (Month-Month)	2nd Crop	3rd Crop	Duration (Month-Month)
Summer rice (early Ahu)	110-120 days (Feb-May)	-	Toria	90 days (Nov-Feb)
Summer vegetables	170-180 days (March- August)	-	Lentil	130 days (Nov-March)
Summer black gram/Green gram	80-90 days (March-May)	-	Wheat	120-130 days (Nov-March)
Jute	100-120 days (March-July)	-	Rabi Vegetables	100-120 days (Sept- Dec)
			Chilli	60-65 days (Sept- Nov)
			Foxtail millet	100-120 days (Jan-April)
			Potato	120-130 days (Nov-March)
			Linseed	130 days (Nov-March)
			Buck wheat	90-110 days (Nov-Feb)
			Niger	100-110 days (Nov-Feb)

Table 6: Indigenous Technological Knowledge (ITK) for pest management

Sl. No	ITKs	Purpose	Remarks
1	Application of bamboo perches in rice field	To control rice pests	Birds perch on the branches and preyed upon insects
2	Application of Germany bon (*Eupatorium audoratum*) in rice field	To control rice pests	It acts as a repellent
3	Application of wood ash in vegetables	To control major pests of vegetables	It acts as a repellent
4	Hanging dead frog/ crabs in rice field	To control rice Gandhi bug	It acts as a an attractant
5	Night firing in rice field	To control rice pests	The fire acts as an attractant for Gandhi bugs
6	Application of neem leaf extract in rice field	To control rice pests	Neem act as antifeedant
7	Application of cut pieces of black colocasia in rice field	To control rice pests	It acts as repellent
8	Wrapping gourd with a polythene	To control fruit flies	Polythene act as a barrier of fruit flies for laying egg
9	Use of dry neem leaves in godown	To control stored grain pests	The azadirachtin present in the neem leaf act as antifeedant.
10	Using thorny branches of ber (*Ziziphus* spp)	Control of rice hispa	Hispa get injury and face disturbances in movement.

References
1. Anonymous. Economic Survey of Assam. Directorate of Economics and Statistics, Government of Assam 2018,71.
2. Borkakati K, Talukdar MC, Choudhary AK, Hazarika GN, Bamah UC, Vadivelu S. Sand deposition by floods in Dhemaji district of Assam, submitted to the Commissioner, Agriculture, Govt. of Assam 1999.
3. Chakraborty G. Assam's hinterland: Society and economy in the char areas of Assam. New Delhi: Akansha Publication House 2009.
4. Chakraborty G. The "Ubiquitous" Bangladeshi.

Economic & Political Weekly 2012;47(38):21-23.

5. Goswami M. Char settlers of Assam: A demographic study. Guwahati: MRB Publishers 2014.

6. Government of Assam (GoA). Assam human development Report 2014. Guwahati: Author.Retrievedfrom http://niti.gov.in/ writereaddata/files/human-development/Assam_HDR_30Sep 2016.

7. Kuddus SR. A study on the status of education in villages of char areas of Sonitpur district of Assam (Unpublished MA dissertation). Tata Institute of Social Science 2012.

8. Kumar B, Das D. Livelihood of the char dwellers of Western Assam. Indian Journal of Human development, 2019;13(1):91-101.

9. Nath RK, Sarma B, Choudhury M, Ahmed P, Upamanya GK, Khayer SM *et al*. Socio Economic Status of Farming Community of Char Area of Dhubri District, Assam. Asian Journal of Agricultural Extension, Economics & Sociology 2012;39(9):14-20.

10. Talukder MC, Goswami G, Kandali A, Basumatary A, Das AK. Crop suitability for Char areas of Nalbari District, Assam. Agropedology, 2009;19(1):41-46.

11. Vadivelu S, Baruah U, Bhaskar BP, Thampi J, Sarkar D, Butte PS. Evaluation of soil-site suitability to rice-baesd cropping system in the river island of Majuli, Assam. Journal of the Indian Society of Soil Science 2005;53:35-40.