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Socio-Economic Status of Wheat Growers in Some Selected Areas of Bangladesh

Zarin Tasnim [a*]

[a] *Department of Agricultural Finance and Banking, Bangladesh Agricultural University, Mymensingh-2202, Bangladesh.*

Author's contribution

The sole author designed, analysed, interpreted and prepared the manuscript.

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ABSTRACT

Aims: The study was carried out to determine the socio-economic status of wheat farmers in Bangladesh.
Study Design: Simple random sampling technique was used for the study.
Place and Duration of the Study: Birganj Upazila under Dinajpur and Thakurgaon Sadar, and Pirganj Upazila under Thakurgaon district were purposively selected for the study. The survey was conducted from February to March 2019.
Methodology: A total of 150 wheat growers were selected as sample farmers. Data were collected from the respondents through direct interviews using pre-tested interview schedules. Descriptive statistics such as mean, frequency, and percentage were employed to analyze the data.
Results: The study estimated that the average farm size was 1.38 ha, and most of them were medium farmers (40 percent). Most of the wheat growers were middle-aged (51–60 years old), while a small portion of them were younger (18–30 years). Findings revealed that about 35.3 percent of farmers were literate, while 34.7 percent completed secondary education. The average family size was 4.96 persons. However, the large farm household had relatively more family

**Corresponding author: E-mail: ztasnim@up.edu.ph*

members than other farm households. Most of the respondents had more than 30 years of farming experience. Nevertheless, agriculture, notably wheat farming, was their primary occupation (92 percent), and about 70.67 percent of their average yearly income came from agriculture. Furthermore, the study found that only a small percentage of farmers obtained training from the government's agricultural extension office, while most farmers did not receive any training opportunities. In this study, about 53.33% of respondents received loans from banks or NGOs, whereas around 46.67% received no credit.

Conclusion: Therefore, the government should provide more institutional and infrastructure support to promote wheat production, which will increase efficiency, income and enhance the livelihood conditions of wheat farmers in the study areas.

Keywords: Socio-economic status; wheat growers; Bangladesh.

1. INTRODUCTION

Wheat has significant importance in Bangladesh's economy in terms of production, food security, and employment generation. About 80% of people in Bangladesh depend directly on agriculture for their food and livelihood, with wheat being the second most important crop after rice [1]. Wheat's gross cultivated area was 0.328 million ha, and the production was 1.08 million MT in 2021 [2]. In every year Bangladesh needs to import large amounts of wheat grains to meet up the domestic demand. In 2022, the country's annual wheat demand stood at 7.5 million tons, of which 1.1 million tons were produced locally and the remaining 6.4 million tons were imported [3]. Wheat consumption in this country has increased dramatically during the last decade. It can be linked to the country's rising population and changes in consumption habits. Even though existing wheat varieties in Bangladesh are high-yielding, production did not keep pace with the increasing population.

The wheat sector in Bangladesh has witnessed numerous notable changes during the last few decades in terms of production. Farmers switching to other crop cultivations, unfavorable weather conditions, and natural calamities etc., all had an impact on wheat yield in recent years. Farmers are increasingly choosing alternative food crops over wheat due to various reasons. They are shifting their focus to crops with higher financial returns, such as potatoes, vegetables, and Boro rice [4]. Another major issue is that climate change, particularly drought, is limiting wheat production in the northwest region, which accounts for around 68.3% of the country's total wheat acreage [5]. Moreover, the Wheat blast is one of the most damaging wheat diseases, also discouraging farmers from continuing to grow wheat. Though the disease's severity has decreased significantly in recent years, farmers are still concerned [6]. Therefore, due to various reasons, wheat acreage is decreasing from the previous years, resulting in lower production. Given this backdrop, it is very important to encourage wheat farmers to continue and increase their wheat farming operations. It is also critical to take the required steps to increase wheat profitability and farmer efficiency. To accomplish so, it is necessary to understand the current socio-economic state of wheat growers in Bangladesh. Farmers' socio-economic traits have an impact on farm planning and decision-making. Socio-economic factors have previously been shown to influence production practices [7]. Land holdings, age, education level, occupation, cultivation experience, farm size, access to credit and training, and other socioeconomic factors of respondents are likely to influence farmers' decision-making ability and production [8,9] These are the most important factors for determining the socio-economic status of a farm households. Therefore, this study attempted to assess the socio-economic status of wheat growers in some selected districts of Bangladesh with a focus on various socio-economic factors such as average farm size, age, educational profile, income, farming experience, family size, occupational status, training facilities, and access to institutional credit, etc. It will provide a comprehensive view of farmers' socio-economic position, which will allow researchers and policymakers to propose strategies to increase their production efficiency and income and thus improve their livelihood.

2. MATERIALS AND METHODS

Wheat is grown in different parts of the country however northwest region occupies around 226,956 ha approximately 68.3% of the total wheat area [5]. Therefore, Dinajpur and Thakurgaon, two northwestern districts were purposively selected since they account for a

considerable portion of national wheat output (18.89%) [5]. Next, based on wheat production, Birganj Upazila (sub-district) from Dinajpur district and Thakurgaon Sadar, and Pirganj Upazila from Thakurgaon district were chosen. A total of 150 wheat-producing farmers were selected using simple random sampling from the lists collected from the respective Upazila agriculture offices. The survey was conducted from February to March 2019 during the wheat harvesting period. Data were collected using pre-tested interview schedules through the direct interview methods with the respondents. Farmers were asked various questions regarding their socio-economic status. The collected data were then scrutinized, tabulated, and analyzed according to the objective of the study. Descriptive statistical measures such as computation of mean, frequency, and percentage were employed to analyze the collected data.

3. RESULTS AND DISCUSSION

The result and discussion section depicts socio-economic profile of the sampled wheat farmers of the study areas.

3.1 Categorization of the Wheat Farmers According to Land Holding

Farmers were classified into four farm sizes: marginal, small, medium, and large. Farmers with 0.2 ha to 0.50 ha of land were considered marginal farmers. Small farmers were those who farmed 0.51 to 1.00 ha of land, medium farmers cultivated 1.01 to 3.00 ha, and large farmers cultivated more than 3.00 ha of land [10]. Out of 150 farmers, approximately 22.67 percent, 28.67 percent, 40 percent, and 8.67 percent were marginal, small, medium, and large farmers, respectively (Table 1). This suggests that the majority of wheat producers in the study areas fall into the medium category.

Table 1. Categorization of wheat farmers according to land holding

Types of farmers	No.	(%)
Marginal farmers	34	22.67
Small farmers	43	28.67
Medium farmers	60	40.00
Large farmers	13	8.67
All	150	100

Source: Field survey, 2019

3.2 Average Size of Land Holding and Farm Size of the Wheat Farmers

Different types of farm size and tenure arrangements were found in the study area which may influence the optimum resource use in the production process. According [11], farm size is computed by the entire land area operated by the farmer. In this study, farm size is computed by adding the area of land owned, rented in/mortgaged in from others and subtracting the area rented out and mortgaged out to others.

> Here, Farm size= Homestead area + Cultivated Land + Pond + Orchard + Fallow land + Leased in /mortgaged in - (rented out/mortgaged out).

The average farm size of the marginal, small, medium, and large farmers was 0.36 ha, 0.74 ha, 1.68 ha and 4.84 ha respectively and for all farmers, it was 1.38 ha (Table 2). That implies that large farmers occupied more lands in comparison to medium, small farmers and marginal farmers.

3.3 Age Distribution of the Wheat Farmers

Age of the farmers plays an important role in managing farm and decision making. Because of age and experience, he or she may become more productive with improved managerial ability. Some researchers think that the older farmers are more experienced. They are more familiar with production practices and able to manage their inputs in more efficient way and they are more risk averter than their younger counterparts. Some of the researchers believe that younger farmers adopt new technology more rapidly than their older counterparts. The age distribution of sample farmers was classified into five age groups (Table 3). Table 3 exhibits that most of the marginal farmers belonged to the age group 31-40 years (38.2 percent) followed by the age group 51-60 years and 41-50 years. Likewise, the highest proportion of small farmers belonged to the age group 31-40 years (34.9 percent) followed by 41-50 years and 51-60 years. In the case of medium farmers, the highest 38.3 percent belong to the age group 51-60 years, whereas in case of large farmers, highest proportion (30.8 percent) of farmers belong to both age groups 41-50 years and 51-60 years. However, it is revealed that majority of the sample farmers (32 percent) belonged to the

Table 2. Average size of land holding and farm size of the wheat farmers

Types of land holdings	Marginal farmer		Small farmer		Medium farmer		Large farmer		All	
	Area (ha)	Percent (%)	Area (ha)	Percent (%)	Area (ha)	Percent (%)	Area (ha)	Percent (%)	Area (ha)	Percent (%)
Homestead area	0.05	13.89	0.06	8.00	0.07	4.023	0.12	2.47	0.07	4.93
Own Cultivated land	0.21	58.33	0.52	69.33	1.34	77.01	3.8	78.19	1.06	74.64
Pond	0	0.00	0.02	2.67	0.06	3.45	0.22	4.53	0.05	3.52
Orchard	0	0.00	0.01	1.33	0.03	1.72	0.18	3.70	0.03	2.11
Fallow land	0	0.00	0	0.00	0.01	0.58	0.12	2.47	0.02	1.41
Leased in	0.1	27.78	0.14	18.67	0.23	13.22	0.42	8.64	0.19	13.38
Total land holdings	0.36	100	0.75	100	1.74	100	4.86	100	1.42	100
Average Farm size	0.36		0.74		1.68		4.84		1.38	

Source: Field survey, 2019

Table 3. Age distribution of the wheat farmers

Age group	Marginal farmer		Small farmer		Medium Farmer		Large farmer		All	
	No.	Percent (%)	No.	Percent (%)	No.	Percent (%)	No.	Percent (%)	No.	Percent (%)
18-30	1	2.9	2	4.7	3	5.0	1	7.7	7	4.7
31-40	13	38.2	15	34.9	10	16.7	1	7.7	39	26.0
41-50	6	17.6	11	25.6	15	25.0	4	30.8	36	24.0
51-60	12	35.3	9	20.9	23	38.3	4	30.8	48	32.0
Above 60	2	5.9	6	14.0	9	15.0	3	23.1	20	13.3
Total	34	100	43	100	60	100	13	100	150	100

Source: Field survey, 2019

Table 4. Educational status of the wheat farmers

Education level	Marginal farmer		Small farmer		Medium Farmer		Large farmer		All	
	No.	Percent (%)	No.	Percent (%)	No.	Percent (%)	No.	Percent (%)	No.	Percent (%)
Illiterate	18	52.9	15	34.9	18	30.0	2	15.4	53	35.3
Primary	5	14.7	3	7.0	7	11.7	1	7.7	16	10.7
Secondary	9	26.5	19	44.2	20	33.3	4	30.8	52	34.7
Higher Secondary	2	5.9	3	7.0	7	11.7	2	15.4	14	9.3
Tertiary	0	0	3	7.0	8	13.3	4	30.8	15	10
Total	34	100	43	100	60	100	13	100	150	100

Source: Field survey, 2019

age group 51-60 years followed by the age group 31-40 years and 41-50 years. The lowest proportion belong to the 18-30 years age group, which implies that most of the farmers were relatively mid aged person. Findings suggest that most farmers are capable of exerting physical effort and are considered to be risk-takers in wheat farming. [8,12,13] also found similar results. However, the average age of the total sampled wheat farmer was 48.97 years.

3.4 Educational Status of the Wheat Farmers

Education encourages farmers to adopt modern technology and makes them more adept of managing scarce resources efficiently to make a higher profit. The respondents' education levels ranged from no formal schooling to above college degrees. Education levels were divided into five categories. Illiterate (no schooling), primary level (classes I-V), secondary level (classes VI-X), higher secondary level (XI-XII), and tertiary level (above XII). Table 4 shows the respondents' educational attainment. The majority of the wheat farmers surveyed (35.3 percent) were illiterate. This means that more than one-third of wheat farmers were illiterate, which is higher than the national illiteracy rate [5]. Among all farmers, about 34.7 and 9.3 percent of the farmers had completed their secondary and higher secondary education, respectively, with only 10 percent having completed their graduation degree. However, no farmer in the marginal and small portion in the small and medium categories had tertiary education, but a large portion (30.8 percent) of farmers in the large group had tertiary education, indicating that large farmers were more concerned about the education attainment than other farms in the study areas. However, the sampled farmers had 6.3 years of schooling on average.

3.5 Family Size of the Wheat Farmers

Family size is defined in this study as the total number of people living together and eating meals as a group out of the same kitchen [7]. The respondents' families were divided into three categories based on the number of members: small (up to 3), medium (between 4 to 6), and large (above 6). Table 5 shows that the average family size for the farmers in the sample was 4.96 persons per family, which is higher than the national average of 4.0 people per family [14]. In the study area, it was found that large farms had the largest families (5.77 persons per family), followed by medium farms (5.3 persons per family), small farms (4.67 persons per family), and marginal farms (4.38 persons per family). It can be assumed that large farm households had more opportunities to employ their family members as laborers in agricultural production than other farm households.

3.6 Farming Experience of the Wheat Farmers

Farming experience is an important socioeconomic factor that influences a farmer's efficiency in crop production. Farming experience may indicate the practical knowledge he has gained on how to tackle certain inherent farm production issues. Farmers must have prior expertise raising a specific crop in order to be efficient in crop management [11]. [15] found that experienced farmers were more efficient in managing and allocating productive resources to wheat cultivation than less experienced farmers. For the study, farming experience of the respondents is categorized into four groups in this study: less than 10 years, 11 years to 20 years, 21 years to 30 years, and more than 30 years (Table 6). On an average 41.3 percent of the sample farmers have more than 30 years of farming experience that was the highest compared to other groups. About 28.7 percent and 26.7 percent of the respondents had experience in wheat cultivation from 11 years to 20 years and 21 years to 30 years respectively. Only about 3.3 % of them had less than 10 years of experience in cultivation. The average farming experience was highest (31.53 years) for medium farmers while it was lowest (26.58 years) for small farmers. All farmers have an average of 29.09 years of farming experience. This suggests that the majority of wheat producers are experienced in wheat farming activities.

3.7 Occupational Status of the Wheat Farmers

Occupation is one of the most important markers of socio-economic position because it is directly tied to household income and living standards. The respondents are engaged with various types of occupation such as agriculture, business, service etc. in the study areas (Table 7). Agriculture is the most prevalent occupation, as seen in Table 7. Among 150 farmers, about 92% of the respondents were engaged with agriculture mainly wheat cultivation as their main occupation while rest of them chose other

Table 5. Average family size of the wheat farmers

Category of farm household according family size	Marginal farmer		Small farmer		Medium farmer		Large farmer		All	
	No.	Percent (%)	No.	Percent (%)	No.	Percent (%)	No.	Percent (%)	No.	Percent (%)
Small family	5	14.7	12	27.9	2	3.3	2	15.4	21	14.0
Medium family	28	82.4	25	58.1	48	80.0	6	46.2	107	71.3
Large family	1	2.9	6	14.0	9	15.0	5	38.5	21	14.0
Total	34	100	43	100	60	100	13	100	150	100
Total family members	149		201		317		77		744	
Average family size	4.38		4.67		5.3		5.77		4.96	

Source: Field survey, 2019

Table 6. Farming experience of the wheat farmers

Farming experience	Marginal farmer		Small farmer		Medium Farmer		Large farmer		All	
	No	Percent (%)	No	Percent (%)	No	Percent (%)	No	Percent (%)	No	Percent (%)
Less than 10 years	1	2.9	4	9.3	0	0	0	0	5	3.3
10 years to 20 years	13	38.2	14	32.6	13	21.7	3	23.1	43	28.7
21 years to 30 years	8	23.5	12	27.9	17	28.3	3	23.1	40	26.7
More than 30 years	12	35.3	13	30.2	30	50	7	53.8	62	41.3
Total	34	100	43	100	60	100	13	100	150	100
Average farming experience (yr)	27.06		26.58		31.53		31.46		29.09	

Source: Field survey, 2019

Table 7. Occupational status of the wheat farmers

Primary occupation	Marginal farmer		Small farmer		Medium farmer		Large farmer		All	
	No.	Percent (%)	No.	Percent (%)	No.	Percent (%)	No.	Percent (%)	No.	Percent (%)
Agriculture	28	82.35	41	95.35	59	98.33	10	76.92	138	92
Business	1	2.94	0	0.00	0	0.00	0	0	1	0.67
Service	1	2.94	1	2.33	1	1.67	3	23.08	6	4.00
Others	4	11.76	1	2.33	0	0	0	0	5	3.33
Total	34	100	43	100	60	100	13	100	150	100
Secondary occupation	**Marginal farmer**		**Small farmer**		**Medium farmer**		**Large farmer**		**All**	
	No.	**Percent (%)**	**No.**	**Percent (%)**	**No.**	**Percent (%)**	**No.**	**Percent (%)**	**No.**	**Percent (%)**
Agriculture	6	17.65	2	4.65	1	1.67	3	23.08	12	8
Business	3	8.82	3	6.98	6	10	1	7.69	13	8.67
Service	4	11.76	9	20.93	8	13.33	0	0	21	14.00
Others	7	20.59	10	23.26	7	11.67	2	15.38	26	17.33
No secondary occupation	14	41.18	19	44.19	38	63.33	7	53.85	78	52
Total	34	100	43	100	60	100	13	100	150	100

Source: Field survey, 2019

Table 8. Average annual income of the wheat farmers

Source of income	Marginal farmer		Small farmer		Medium Farmer		Large farmer		All	
	Income (TK)	Percent (%)	Income (TK)	Percent (%)	Income (TK)	Percent (%)	Income (TK)	Percent (%)	Income (TK)	Percent (%)
Farm	65280.59	57.91	103588.40	71.23	186348.30	71.83	363819.20	75.10	150562.6	70.69
Off-farm	47441.18	42.09	41846.51	28.77	73079.67	28.17	120615.40	24.90	62434.53	29.31
Total	112721.80	100	145434.90	100	259428.00	100	484434.60	100	212997.1	100

Source: Field survey, 2019

occupation as their primary source of living. About 8% of the respondents chose agriculture as their secondary occupation. Agriculture as the main occupation was observed to be higher for the medium farm (98.33 percent) followed by small (95.35 percent), large farm (92 percent) and marginal (82.35 percent). On the other side, business, and service as the main occupations of all sample farmers constituting 0.67 and 4 percent respectively.

3.8 Average Annual Income of the Wheat Farmers

The income activities were classified into two categories: Farm income (crop cultivation, livestock rearing, pond fish farming, homestead etc.); Off-farm income (day labour, vehicle driving, rickshaw pulling, shop keeping, services, etc.). It has been found from Table 8 that the average annual income from different sources of marginal, small, medium, and large farmers were Tk. 112721.80, Tk 145434.90, Tk.259428.00 and Tk. 484434.60 respectively and overall average annual income from different sources of the selected farmers was Tk. 212997.1 (Table 8). It is observed that wheat farmers' lion share (70.69 percent) of income comes from farming activities and rest from off-farm income generating activities (29.31 percent).

3.9 Average Annual Expenditure of the Wheat Farmers

Average annual expenditure of the farmers in the study areas is illustrated in Table 9. The major sectors of farmers' expenditure were food, clothes, medical expenses, education, electricity, transportation, festivals, and miscellaneous items. Table 9 that the average annual expenditure in different source of marginal, small, medium, and large farmers were Tk. 103044.1, Tk 119709.3, Tk. 205283.3and Tk. 215846.2 respectively and overall average annual expenditure of the selected farmers was Tk. 643882.9 (Table 9).

3.10 Training Status of the Wheat Farmers

Training is an important means of obtaining technological skills. It contributes to farmers' increased knowledge and expertise in production methods and related challenges. In the study areas, farmers were trained by the Department of Agricultural Extension (DAE) on production methods, fertilizer, insecticide use, harvesting procedures, and so on. The study revealed that marginal (14.71 percent), small (23.26 percent), medium (45 percent), and large (31 percent) farmers received training on wheat farming. It was also observed that medium farmers are more engaged in training achievement than other farmers in the study areas (Table 10). This finding coincides with [8].

3.11 Credit Status of the Wheat Farmers

Agricultural credits are crucial to the management of farms. Several banks and non-governmental organizations (NGOs) provide financing to farmers, and farmers use this credit to expand their agricultural operations and incomes. Credit also assists farmers in successfully managing their farms. In this study, approximately 53.33 percent of respondents obtained credit from banks or NGOs. On the other hand, around 46.67 percent of the respondents got no credit (Table 11). According to the farmers in the survey, a key issue is the lack of adequate credit facilities. They are dependent on various informal sources of credit, such as moneylenders, relatives, and friends, in order to cultivate crops because the credit lending processes of various formal credit lending institutions are long and need collaterals.

The socio-economic status of wheat growers and other crop farmers in rural, and agricultural areas of Bangladesh is a complex and multifaceted issue. There are a variety of factors that influence the economic well-being and efficiency of these farmers, including access to resources [16], land ownership [17], education [18], government policies [19,20], market access [21], and so on.

In many cases, wheat growers face significant challenges in accessing the resources they need to be successful. These challenges may include lack of capital, limited access to credit, inadequate infrastructure, and a lack of education or technical expertise [22,17]. Additionally, many of these farmers may not have legal title to their land, which can make it difficult for them to secure financing or access government programs.

Despite these challenges, there are also many examples of successful wheat farmers in Bangladesh. These farmers frequently used better wheat management practices such as planting improved wheat varieties at the optimal time, applying prescribed fertilizer doses, and so on [23,24].

Table 9. Average annual expenditure of the wheat farmers

Average annual expenditure (TK)	Marginal farmer	Small farmer	Medium Farmer	Large farmer	All
	103044.1	119709.3	205283.3	215846.2	643882.9

Source: Field survey, 2019

Table 10. Training status of the wheat farmers

Training status	Marginal farmer		Small farmer		Medium farmer		Large farmer		All	
	No.	Percent (%)	No.	Percent (%)	No.	Percent (%)	No.	Percent (%)	No.	Percent (%)
Training received	5	14.71	10	23.26	27	45.00	4	31	46	30.67
not received	29	85.29	33	76.74	33	55.00	9	69	104	69.33
Total	34	100	43	100	60	100	13	100	150	100

Source: Field survey, 2019

Table 11. Credit status of the wheat farmers

Credit status	Marginal farmer		Small farmer		Medium farmer		Large farmer		All	
	No.	Percent (%)	No.	Percent (%)	No.	Percent (%)	No.	Percent (%)	No.	Percent (%)
Credit received	22	64.71	21	48.84	29	48.33	8	61.54	80	53.33
not received	12	35.29	22	51.16	31	51.67	5	38.46	70	46.67
	34	100	43	100	60	100	13	100	150	100

Source: Field survey, 2019

In recent years, there has been growing interest in supporting sustainable agriculture and local food systems in Bangladesh [25]. This has led to increased investment in small-scale farming and initiatives aimed at strengthening the economic and social well-being of rural communities. For example, some organizations have worked to provide training and technical assistance to farmers, while others have focused on building market linkages and improving access to credit and other resources [26]. If modern inputs and production technology can be made available to farmers in time, yield and production of wheat may be increased which can help the farmers to increase their income and improve livelihood conditions. To build strong, sustainable local food systems, govt. should ensure that these farmers have the resources they need to thrive and contribute to their communities.

4. CONCLUSIONS

The socio-economic status of wheat growers of Bangladesh is a complex and dynamic issue that requires a multifaceted approach. Efforts to support these farmers must consider the diverse range of factors that influence their efficiency, income and livelihood. Therefore, the study investigates the different socio-economic factors of the wheat farmers. In examining socioeconomic characteristics, farm size and land holding pattern, age, educational and occupational status, family size, average yearly income and expenditure, training and credit facilities received by the sample farmers were considered. Based on their socioeconomic traits, the study discovers certain distinctions among marginal small, medium, and large farmers. The study found that the majority of the farmers were middle aged. Hence, they may commit themselves actively to the production of wheat. Though the sampled wheat growers had high illiteracy rate, many of them completed their primary and secondary education, which indicates that they are better prepared to embrace modern farming technology. As most farmers have more than 30 years of experience, it is likely that they are skilled at producing wheat. It has been noted that wheat farmers' primary source of income is agriculture, specifically wheat cultivation. The study identified that the majority of farmers did not receive any training on modern wheat production methods or technologies. Therefore, Govt. should provide enough training facilities to these farmers, as it is critical for enhancing agricultural productivity. The study found that more than half of the sample farmers obtained credit from both government and private banks, as well as non-governmental organizations, allowing them to use high-quality seeds, fertilizers, and insecticides to boost wheat production. It can be concluded that wheat farmers' attributes have a positive effect on wheat production, and there is significant potential to raise wheat production and consequently farmers' efficiency, income and employment prospects in the selected study areas of Bangladesh.

CONSENT

According to international standard or university standard, respondents' written consent has been collected by the author.

COMPETING INTERESTS

The author has declared that no competing interests exist.

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