

Impact of Tobacco Cultivation on Rural People In Bangladesh: A Micro Level Study

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Abstract - The study was conducted in one of the major tobacco growing areas of Bangladesh, which was Nilphamari district to identify the impact of tobacco cultivation on rural people. In total, 100 farmers were randomly selected as sample size for conducting the study. In the study areas, data were collected through semi-structured interview schedule. Tabular, descriptive statistics and profitability models were used to fulfill the objectives. The study found that, others crop (rice and corn) cultivation was highly profitable than tobacco cultivation. The average net return per hectare for tobacco was Tk. 19920 in FY 2020-2021 and Tk.15235 in FY 2021-2022 respectively. The net return for tobacco was highest in the year of 2020-2021. The average net return per hectare was for others crop (rice and corn) was Tk. 18995 in FY 2020-2021 and Tk. 29701 in FY 2021-2022 respectively. The net return for others crop was highest in the year of 2021-2022. Benefit cost ratio, was 1.16 and 1.13 in the year of 2020-2021 and 2021-2022 respectively which was profitable. Besides, we saw farmers faced some health issues. The major health issue were headache faced by 91% farmers. Others health issues were eye imitation, coughing etc. The major constraints were rainfall. Others constrains were no machinery, wholesaler didn't give the price in time etc.

I Introduction

1.1 Background of the Study:

Bangladesh is an agricultural country. Bangladesh produces a variety of agricultural products such as rice, wheat, corn, legumes, tobacco, fruits, vegetables, meat, fish, seafood, and dairy products. According to the Bangladesh Bureau of Statistics for (FY, 2020-21) crops, livestock, fisheries, and forest products accounted for about 12.5 percent of Bangladesh's total GDP and employed approximately 40 percent of the total population. Being an agricultural country, Bangladeshi farmers also cultivate lots of cash crops. In local and international markets those crop of BD has huge demand. The main cash crops of Bangladesh are tea, jute, tobacco, sugarcane, silk, rubber etc.

A cash crop or profit crop is an agricultural crop which is grown to sell for profit. It is typically purchased by parties separate from a farm. The term is used to differentiate marketed crops from staple crop (or "subsistence crop") in subsistence agriculture, which are those fed to the producer's own livestock or grown as food for the producer's family. In earlier times, cash crops were usually only a small (but vital) part of a farm's total yield, while today, especially in developed countries and among smallholders almost all crops are mainly grown for revenue.

In the least developed countries, cash crops are usually crops which attract demand in more developed nations, and hence have some export value. Prices for major cash crops are set in international trade markets with global scope, with some local variation (termed as "basis") based on freight costs and local supply and demand balance. A consequence of this is that a nation, region, or individual producer relying on such a crop may suffer low prices should a bumper crop elsewhere lead to excess supply on the global markets. This system has been criticized by traditional farmers. Tobacco is an example of a product that has been susceptible to significant commodity (Fuzheado, 2022).

Tobacco is a plant grown for its leaves, which are dried and fermented before being put in tobacco products (NIDA, 2021). Tobacco contains nicotine, an ingredient that can lead to addiction, which is why so many people who use tobacco find it difficult to quit. Tobacco is the most versatile cash crop. Tobacco farming took place since mid-sixties of the last century in this country. It spreads widely after liberation of 1971 at Teesta silt in Rangpur area (Sarkar & Haque, 2021). Mainly British American Tobacco Bangladesh Company Limited (BATB) has been operating as a major sponsor of contract farming in tobacco cultivation since its beginning. This crop has a regional dominance in the north western, mid-western, mid-south and south eastern part of the country (Motaleb and Irfanullah, 2011). In the context of tobacco cultivation, it is

grown somewhat throughout the country but the abundance in the north and south western areas mostly, Rangpur, Kushtia and in the eastern hilly region, e.g. Chittagong Hill Tracts, there grown various varieties of tobacco (Motaleb and Irfanullah, 2011).

Tobacco has turned into a prime cash crop in a number of areas such as Kurigram, Lalmonirhat, and Nilphamari which aided poverty alleviation, especially helping the poor during the Monga (Bangla term referring to cyclical phenomenon of quasi famine) in these tobacco growing districts in Northern side of Bangladesh. Tobacco cultivation generated employment or thousands of farmers/agricultural labors in tobacco growing areas like Nilphamari, Kurigram, Kushtia due to the cultivation of export quality tobacco (PRI, 2022).

1.2 Rationale of the Study :

Bangladesh is one of the largest tobacco consuming countries in the world. Employment in tobacco farming accounts for less than 0.5% of agricultural employment in Bangladesh (Hasan, 2015). Bangladesh weather also suitable for tobacco cultivation. In the Rangpur division, tobacco cultivation utilizes fallow sandy river beds of Teesta, Dharola and other estuaries for the production of profitable tobacco crop.

Generally, these lands are not suitable for the cultivation for food grains such as paddy as it requires a static water level for a very long period and thus need a lot of irrigation. Besides, the contract between tobacco companies & farmers is another reason for increasing tobacco cultivation in this area. In the last fiscal year, the government earned nearly Tk 28,000 crore (\$2.77 billion) from tobacco taxes (Mahmud, 2022).

Soil and climatic condition of this region is also suitable for cultivating tobacco that enhances the farming among the farmers. Multinational company of tobacco manufacturing has an intensive effort of growing more and more tobacco motivating the poor and illiterate farmers. Inadequate assistance from agriculture department distracts the farmers to remain in the traditional food cultivation (Akhter, 2010).

The soil of this area is good for tobacco cultivation. Despite knowing of the adverse effects of tobacco, farmers have continued cultivating the crop across Nilphamari district as the produce yields them a good price. Besides, farmers faces so many health issues because of tobacco cultivation in this areas. Farmers now moving towards in others crop nowadays. For this reasons, it would be interesting to study the impact of tobacco cultivation on rural people.

1.3 Objective(s) of the Report :

The overall objective of the study is to analyze the impact of tobacco cultivation on rural people in Bangladesh.

1.4 Specific Objective(s) :

- To identify the socio-economic conditions of the respondents
- To evaluate the impact of tobacco cultivation compared to other crops (rice & corn)
- To diagnose health issues of rural people
- To discover the challenges faced by tobacco farmers.

1.5 Scope of the report

The staple food of Bangladeshi people is rice. But in some areas of Bangladesh people choose tobacco as their main earning source specially the most rural areas. Tobacco cultivation greatly affects their livelihoods. Tobacco cultivation is highly labor intensive. During curing, tobacco farmers have to need so many labors which creates employment in the rural areas. A significant number of women and child laborers are engaged in tobacco cultivation and tobacco leaf processing. But on the contrary, working in tobacco farms and processing of leaves has harmful effects on farmers' health.

Men and women, older farmers and children were engaged in tobacco cultivation and harvesting. We found that both men and women, older farmers or children were equally suffering. The study was conducted with a view to submitting,

internship paper on impact on tobacco cultivation on rural people in Bangladesh: a micro level study. By this report, we would be able to know the contribution, conditions, issues, prioritizing the cultivation of tobacco.

Acronyms and Abbreviations :

%	Percentage
AERD	Agricultural Economics and Rural Development
AEZ	Agro-Ecological Zone
BRRI	Bangladesh Rice Research Institute
BBS	Bangladesh Bureau of Statistics
BCR	Benefit Cost Ratio
BSMRAU	Bangabandhu Sheikh Mujibur Rahman Agricultural University
BoM	Board of Management DG Director General et al. et alia (and others)
FC	Fixed Cost
FY	Fiscal Year
GDP	Gross Domestic Product
GR	Gross Return
MS	Master of Science
NARS	National Agricultural Research System
NIDA	National Institute of Drug Abuse
NR	Net Return
SO	Scientific Officer
SSO	Senior Scientific Officer
TC	Total Cost
VC	Variable Cost
Kg	Kilogram
Tk.	Taka

II Methodology of Study

2.1 Selection of Study Areas

Farm level research requires selection of an area where the research data was collected and the research was done. This study was conducted in Chowra and Palashbari union of Nilphamari district considering the researcher familiarity and easy access to the local farmers. Two villages were selected for the study.

The name of the villages were Kanchanpara and Chakdhapara. From an article it was also found that Rangpur division suitable for tobacco cultivation (Hasan 2015). The farmers were randomly selected for data collection purpose. The main reasons for selecting the area for data collection purpose were:

- a. The areas was famous for tobacco cultivation in the Nilphamari district
- b. There was so many crops to cultivate but they choose tobacco, rice and corn cultivation for their livelihood
- c. The selected villages had similar physical characteristics like- topography, soil and climatic conditions for producing tobacco, rice and corn
- d. As most of the farmers were involved in tobacco, rice and corn production, it was expected that reliable data would be successfully obtained from that area
- e. Easy accessibility and good communication facilities in the area.

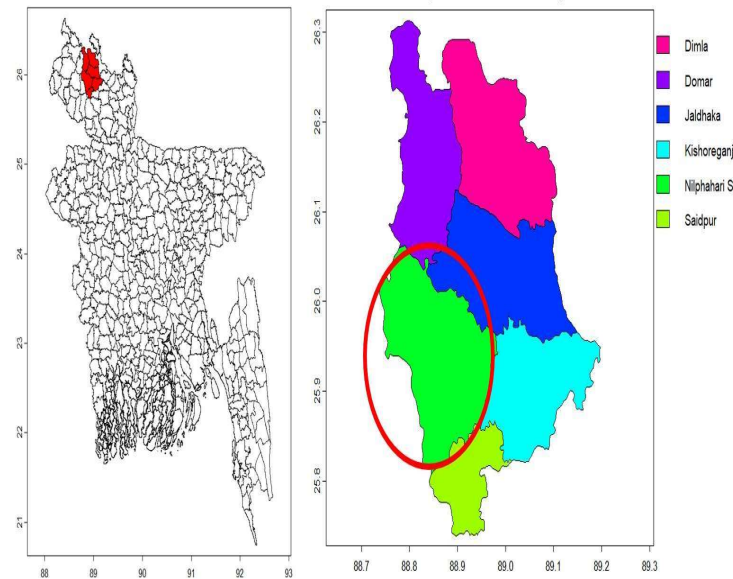


Fig.1. Study area map

2.2 Sampling Technique and Sample Size:

Two factors were considered in selecting samples for a study areas. The sample size should be large enough to follow for adequate degrees of freedom in the statistical analysis. Administration of field research, processing and analysis of data should be manageable within the limited resource available. It was impossible to include all the farmers in Chowra and Palashbari union because they were randomly scattered in a huge area. Total 100 farmers were selected randomly where all farmers were growers of tobacco, rice and corn by purposive sampling technique.

2.3 Preparation of the Survey Schedule:

A draft interview schedule was prepared for collecting data keeping the objectives in mind. Necessary modifications, additions and alternations were made and then the draft questionnaire was finalized. The final questionnaire had three categories of information. The first part was prepared to collect socio-economic information. The second part contained information about profitability of corn and rice. The third part contained questions related to constraints and problems faced by the farmers in producing rice and corn in the selected area.

We used a software called (ODK Collect kc.kobotoolbox.org).With the help of this software we put all the questions into phone so that we didn't need to copy papers. By the help of this software we saved our paper cost.

2.4 Period of the Study:

Data were collected during the period of October to November in 2022 through direct interview with the farmers. Data relating to inputs and outputs were obtained by making time to time visit in the study area.

2.5 Data Collection Method:

Required data were collected through field survey by interviewing the tobacco, rice and corn growers. The relevant information was collected from the tobacco, rice and corn rice farmers who were selected. The selected farmers were contacted first so that they could be interviewed according to their convenient time. During interview schedule, the researcher systematically asked questions and explained the purpose of the study for better understanding. The interviewer told the farmers the study was properly academic. When interview was over, the interview schedule was rechecked to ensure that each of the required information was collected properly.

2.6 Processing, Tabulation and Analysis of Data:

The collected data were coded and edited through (ODK Collect kc.kobotoolbox.org). After all the collected data were scrutinized and summarized very carefully. Data entry was automatically done in computer and analysis was done accordingly in computer. The information was first collected in local units and then it was converted into international standard units.

2.7 Analytical Technique:

Several analytical techniques were used to meet particular research objectives. The collected data was analyzed using kobo tool box to get socio economic characteristics .Through R and R studio software we got frequency distribution table again through kobo toolbox we took data and put them in excel for making table . We also made the study area map through R and R studio software because through this software calculation was very easy.

2.8 Descriptive Statistics:

The data were analyzed with the help of suitable statistical measures as frequencies, percentages, mean and standard deviation. Descriptive statistics were used to analyze and compare the socioeconomic characteristics. The total cost were calculated. The gross return (GR) was computed as total tobacco output multiplied by the market price of tobacco. The net return (NR) was defined as GR-TC. Finally, the Benefit Cost Ratio (BCR) was computed as GR/TC.

2.9 Model Specification:

To calculate Profitability we must consider the following things:

Estimation of Returns:

Per hectare returns from crop production were broadly classified into gross returns and net returns. For estimating profitability gross margin and BCR were also calculated.

Gross Return:

The gross return per hectare was determined by multiplying the entire quantity of product and by-product by their respective per-unit pricing.

$$\text{Gross Return} = \text{Quantity of the product} * \text{Average price of the product} + \text{Value of by- product.}$$

Net Return:

Profit or net return was computed by subtracting the whole production cost from the total return or gross return. That is to say,

$$\text{Net return} = \text{Total return} - \text{Total cost.}$$

Benefit-Cost Ratio (BCR):

The benefit cost ratio (BCR) was a relative measure which compares the benefit of per unit of cost. BCR was estimated as a ratio of gross return and gross costs. The formula of calculating BCR (undiscounted) was shown as below:

$$\text{BCR} = \text{Gross Benefit/Gross Return}$$

If a project has a BCR greater than 1.0, it is expected to deliver a positive net present value to a firm and its investors. If a project's BCR is less than 1.0, the project's costs outweigh the benefits and it should not be considered (Chanda & Ali, 2019).

III Results and Discussion

Socio-economic Characteristics of Tobacco Farmers: The socio-economic characteristics of the sample farmer was an essential part of research because these characteristics can affect their production decision and production pattern.

The socioeconomic characteristics of the sample farmers that was considered in the study area involved farmers age, family size, education status, occupation level, farming experience and farm holdings of the farmer.

3.1 Age structure of the Sample Farmers:

The respondents of tobacco farmers classified into four categories such as 35-45 years, 45-55 years, 55-65 years, 65 and above years. Table 2 shows that out of total tobacco growers, 11% belonged to 35-45 years, 30% belonged to 45-55 years, 50% belonged to 55-65 years, 9% belonged to 65 and above years. It can see that from table 2 the majority of tobacco growers belonged to 55-65 years with 50 percentage.

Table 1: Distribution of Sample Farmers According to Age Group

Farmers Age (Years)	Tobacco Farmers Age	
	Frequency	Percentage
35-45	11	11
45-55	30	30
55-65	50	50
65 and above	9	9

Source: (Field survey, 2022)

3.2 Gender of the Respondents:

In the study areas most male members worked in the field.

Mostly, female members worked inside home. It was rare to see any female farmers in the study areas. Pie chart shows that 100% farmers of tobacco growers were male among the sample respondent.

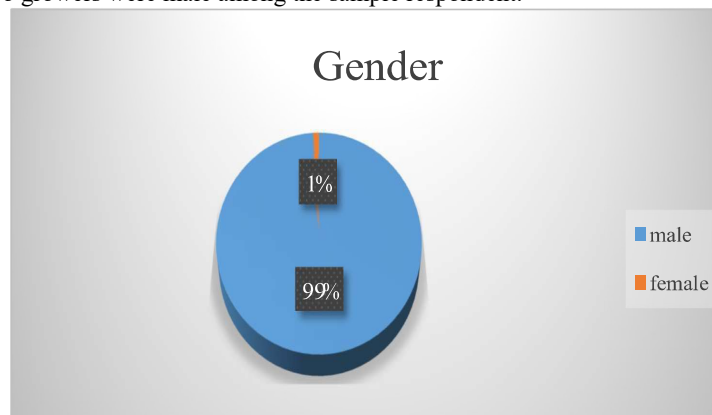


Fig.2. Gender of Tobacco Growers

Source: (Field survey, 2022)

3.3 Educational Status of the Respondents:

The farmers were classified into six categories such as illiterate, illiterate but can sign , primary, secondary, higher secondary and bachelor & above for research purpose. Pie chart showed that among tobacco farmers 48%% was illiterate, 25%% was illiterate but can sign, 25%had primary education, 3% had secondary education and 1% had higher secondary education but no farmers had above higher secondary degree. It was obvious from Table chart that majority of tobacco farmers was illiterate.

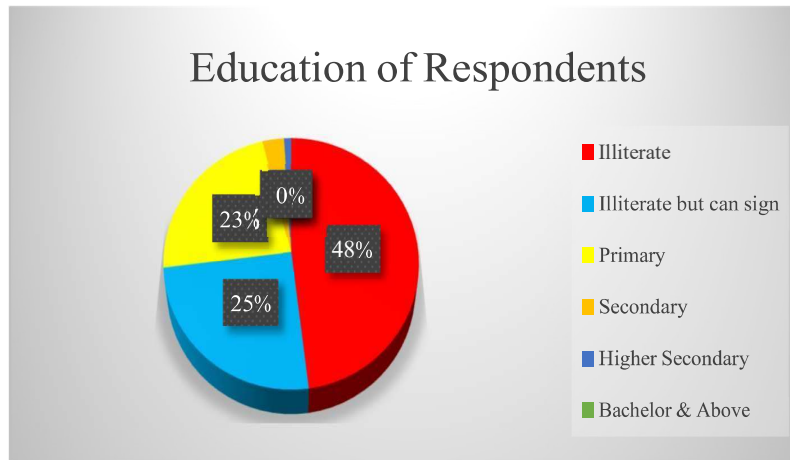


Fig.3. Respondents Educational Status

Source: (Field survey, 2022)

3.4 Occupational Structure:

In the study area, farmers were engaged in various types of occupation like crop cultivation, small business, poultry and livestock rearing and fish culture. Farmers were classified for research purpose into four groups such as agriculture, business, service and others as almost all farmers were involved in at least one of these categories.

So, the occupation of respondents was also classified into two broad groups such as main occupation and secondary occupation. Because small and medium farmers cannot survive with their small land on agriculture alone. That’s why, they had to go for other occupation to bear the Occupation defined as the work for a man who had engaged him throughout the year. In the household expenses and to increase their regular income, for this reason, some of the respondents were found to depend on service, business and other activities beside agriculture. From table we can see that 85.8% of tobacco producers were involved in agriculture, 2.5% involved in business and 2.02% involved in service and 6% involved in others as their main occupation and we also saw that 34.36% of tobacco producers was involved in business, 11.12% involved in agriculture and 5.06% involved in service as their secondary occupation. So, this information implies that most of the farmers depend on only agriculture and they run their household by working in agriculture sector.

Table 2: Occupational Status of the Farmers

Occupational Status	Tobacco cultivation Farmers	
	Main	Secondary
Agriculture	85.8%	11.12%
Business	2.5%	34.36%
Service	2.06%	5.06%
Others	6%	0

Source: (Field survey, 2022)

3.5 Farming Experience:

Farming experience was a vital tool for operating agricultural activities. An experienced farmer knows how to till land correctly, spray pesticide and optimum doses of fertilizers than an inexperienced farmer. The farmers in the study area were

divided into four groups based on their year of farming experience. Table 4 shows that 3% farmers had 10-20 years experience, 47% had 20-30 years experience, 14% had 30-40 years experience, and 1% had 25-30 years experience. We can see from the table 4 that maximum farmers have 10-20 years experience.

Table 3: Respondents Farming Experience

Years of Experience	Others Crop (rice and corn)	
	Frequency	Percentage
10-20	38	38
20-30	47	47
30-40	14	14
40-50	1	1

Source: (Field survey, 2022)

3.6 Tobacco Farming Experience:

Farming experience was a vital tool for operating agricultural activities. An experienced farmer knows how to till land correctly, spray pesticide and optimum doses of fertilizers than an inexperienced farmer.

The farmers in the study areas were divided into four groups based on their year of farming experience. Table 5 shows that 29% farmers had 10-20 years experience, 32% had 20-30 years experience, 22% had 30-40 years experience, and 17% had 25-30 years experience.

We can see from the table that from maximum farmers had 20-30 years experience.

Table 4: Respondents Tobacco Farming Experience

Years of Experience	Tobacco	
	Frequency	Percentage
10-20	29	29
20-30	32	32
30-40	22	22
40-50	17	17

Source: (Field survey, 2022)

3.7 Storage Facilities of the Respondents:

Storage facility was very much important for agriculture because agricultural crops was perishable. Here we saw that 85% farmers had storage facility and 15% didn't had this facility.

Table 5: Storage facilities of Respondents

Having Storage for Crops	Farmers having storage	
	Frequency	Percentage
Yes	85	85
No	15	15

Source: (Field survey, 2022)

3.8 Other Facilities:

Though tobacco is a cash crop government give so much restrictions of its cultivations .But some tobacco company helps farmers to do so. In this table we saw 67% farmers didn't get any help, they did it for themselves. 31% farmers got seed, 22% farmers got fertilizer, 20% farmers got loan. We saw that most farmers didn't got help from other sources like companies.

Table 6: Other Facilities Get by Farmers

Any Training or Technical Knowledge	Tobacco Cultivation growers	
Types of help	Frequency	Percentage
None	67	67
Seed	31	31
Fertilizer	22	22
Loan	20	20
Financial	1	1

Source: (Field survey, 2022)

3.9 Profitability of Tobacco and Others crop (Rice and Corn) Production:

From table we can saw that the gross return per hectare was Tk.139170 and 125335 for tobacco in 2020-21 and 2021-2022 respectively. The gross return per hectare was : Tk.114395 and 135401.8 for other crops in 2020-21 and 2021-2022 respectively. The net return per hectare was Tk. 19920 and 15235 for tobacco in 2020-21 and 2021-2022 respectively. The net return was 18995 and 29701 in 2020-21 and 2021-2022 respectively. Benefit cost ratio was estimated for tobacco 1.16 and 1.13 in 2020-2021 and 2021-2022 respectively. Here we saw that benefit cost ratio is greater than 1.

This implies that one taka investment in tobacco production would generate 1.16Tk and 1.13 Tk. in year 2020-21 and 2021-22 respectively. So we can said that, tobacco cultivation at farm level was not profitable nowadays. People were now not showing too much interest to cultivate tobacco though it is a cash crop.

Benefit cost ratio were estimated for other crops 1.19 Tk. and 1.28 Tk. in year 2020-2021 and 2021-2022 respectively. So we can said that other crops cultivation is more profitable than tobacco. People were now moving towards other crop cultivation.

Table 7: Profitability of Tobacco and Others Crop Production

Year	Tobacco		Others (rice and corn)	
	2020-21	2021-22	2020-21	2021-22
Average Yield (Hectare)	2256	1965.6	4421.8	4850.9
Average Price (Tk/Kg)	60	62.5	25	27
Gross Return (Tk)	139170	125235	114395	135401.8
Total Cost	119250	110000	95400	105700.0
Net Return (Tk) (c-d)	19920	15235	18995	29701
BCR (c/d)	1.16	1.13	1.19	1.28

Source: (Field survey, 2022)

3.10 Health Problems Faced by Tobacco Farmers:

Tobacco farming was a little different from other jobs because farmers in tobacco farming faced some physical problems, in my internship I tried to find some reasons, which was one of the objectives of my internship. Here headache faced by 91% farmers, eye imitation faced by 66%, coughing faced by 25%, fever faced by 12%, heart problem faced by 3% and lungs problem faced by 1%. From the table we saw most faced problem was headache which was 91%.

Table 8: Health Problems Faced by Respondents

Health Problems	Problem Face by Farmers	
	Frequency	Percentage
Headache	91	91
Eye Imitation	66	66
Coughing	25	25
Fever	12	12
Heart	3	3
lungs	1	1

Source: (Field survey, 2022)

3.11 Problems Faced by Tobacco Farmers:

Although Bangladesh is a major agricultural country, farmers faced some problems, which was major obstacles in their agricultural work, the main problem was rainfall, which had been placed in the first problem.

Next most of the farmers didn't got machinery, another problem was wholesaler didn't give price in time was the third problem, labor shortage, low cost, require lot of hard work, pest, lack of company support, last problem was smell in the whole room.

Table 9: Problems Faced by Respondents

Problems	Tobacco cultivation	
	Percentage	Rank
Rainfall	33	1
No Machinery	14	2
Wholesaler Did not Give Price in Time	11	3
Labor Shortage	9	4
Low Cost	7	5
Require a Lot of Hard Work	6	6
Pest	5	7
Lack from Company Support	4	8
Smell in the Whole Room	11	9
Total	100	100

Source: (Field survey, 2022)

IV Conclusion

It is evident from the above-mentioned discussion that sample farmers is not profitable to tobacco in the study areas and the findings of present study indicates that others crop cultivation is more profitable than tobacco in some area of Nilphamari district in terms of gross return, net return and benefit cost ratio. Some problems and factors is influenced its profit throughout the production process. For this reason tobacco is a not profitable crop for them nowadays, its growers face different constraints, such as rainfall, no machinery, and wholesaler didn't give the price in time, labor shortage, low cost. For this reasons, they are not encouraged to do it more. As a result, they are moving more towards other crop instead of tobacco cultivation. Their low production will play a major role in meeting the government's target for banned to tobacco cultivation.

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