

Socio-economic Impact of Tobacco Farming in Bangladesh

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Abstract The study aims to understand the socio-economic condition of tobacco farming people in Bangladesh. The study is explorative and to some extent descriptive in nature that enforces to adopt mixed with qualitative and quantitative data as well as secondary and primary data. The primary data were collected from a structured questionnaire, interviews, focus group discussion and observation. It is found that among the tobacco labor most of them 30-39 years and among the tobacco businessman, 33.3% of the respondents aged 30-39 years while most of the farmer 40-49 years. More importantly, business related people own most of the terraced building and most of the businessman and fewest of the labors have electricity connection to their houses. Businessman respondents have the most income among all three groups and two third of them earn more than BDT 16000 per month. On the contrary, labors have the least income per month. Every two out of three labor earn less than BDT 6000 per month. It is cleared that economic development was achieved in all peoples' life. But social condition became worsen in the study area and among this addiction is most common in the study area.

Keywords: tobacco farming, economic impact, social problem

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1. Introduction

Tobacco farming is not unfamiliar phenomenon in Bangladesh and it has been cultivating from the ancient time but nowadays commercial tobacco farming is matter is thinking. Tobacco (*Nicotiana* species) is an ancient and the most important and widely grown commercial non-food plant in the world [1]. The plant tobacco belongs to the genus *Nicotiana* under the large family *Solanaceae*, the nightshade family [2]. Sir Walter Raleigh is usually given the credit for having introduced tobacco into England [3].

Tobacco sickness is potentially preventable through the use of protective clothing, which reduces nicotine absorption in tobacco workers [4].

Tobacco has been introduced since mid-sixties of the last century into the fields where food crops were grown, and more widely after liberation in 1971 by the British American Tobacco Company in *Teesta* silt in Rangpur area [5].

Although Bangladesh Agricultural Research Institute (BARI) has conducted research and development activities of tobacco and abandoned in 1995, tobacco production has mainly been pushed by big multinational companies such

as British American Tobacco Company through contract growers [6]. Bangladesh is one of the largest tobacco consuming countries among South Asian countries [7]. Bangladesh has become a net exporter in recent years, exporting about one-third of the tobacco grown [8].

It has no biomass that feeds back to the soil. The company purchases only the leaves that are grown. The rest of the plant remains on the ground and does more harm to the soil [9].

For decades tobacco production has moved from one location to another, due to the loss of soil fertility and destruction of sources of fuel wood in this area [10]. In 2011, tobacco use killed almost 6 million people worldwide. If trends continue, 1 billion people will reportedly die from tobacco use and exposure during the 21st century one person every 10 seconds [11]. Tobacco smoking and other forms of tobacco use impose a large and growing public health burden globally and in Bangladesh. Globally, tobacco use currently causes 5.4 million premature deaths each year, and current trends predict that one billion people will die from tobacco use in the 21st century [12].

About 70% of current tobacco-attributable deaths occur in low and middle-income countries [13]. Tobacco use is estimated to kill approximately 57,000 people in

Bangladesh each year about one in six of all deaths among people ages 30 years and older. As in other countries, the majority of these deaths result from lung and other cancers, strokes, ischemic heart and other cardiovascular diseases, and respiratory diseases. Estimates for 2004 indicate that the annual health care costs attributable to tobacco-related illnesses in Bangladesh were 50.9 billion takas (US\$ 856 million), including 5.8 billion takas (US\$ 9million) to treat the diseases caused by exposure to second hand tobacco smoke [14].

Tobacco sickness is frequently defined as a disease characterized by vomiting or nausea and dizziness or headache during or after exposure to the agent *Nicotiana tabacum* tobacco leaves. However, GTS may also result in severe conditions such as dehydration and consequently in the need for emergency medical care [15].

Nicotine is water and lipid soluble alkaloid found in tobacco leaves [16] and harvesters who manually collect tobacco leaves absorb nicotine through the skin due to failure contact. During the tobacco harvesting process, a folk peasant's hand and forearms receive the most exposure [17].

Environmental degradation is also caused by the tobacco plant, which leaches nutrients from the soil, as well as pollution from pesticides and fertilizers applied to tobacco fields [18]. In the study area, people are cultivating tobacco more than 30 years but tobacco farming is spreading more firstly in last decade.

The researcher aim is to understand the socio-economic impact of tobacco farming on the community people of Rangpur region in Bangladesh.

2. Methods and Materials

The study is explorative and to some extent descriptive in nature that enforces to adopt mixed with qualitative and quantitative data as well as secondary and primary data. The primary data were collected from a structured questionnaire, interviews, focus group discussion and observation. The secondary data were collected from different sources such books and journals. The questionnaire survey was conducted based on purposive sampling which includes 384 respondents. The primary data were analyzed using various statistical software, such as, SPSS, MS Excel. Researcher used spatial software ARCGIS to produce map.

2.1. Study Area

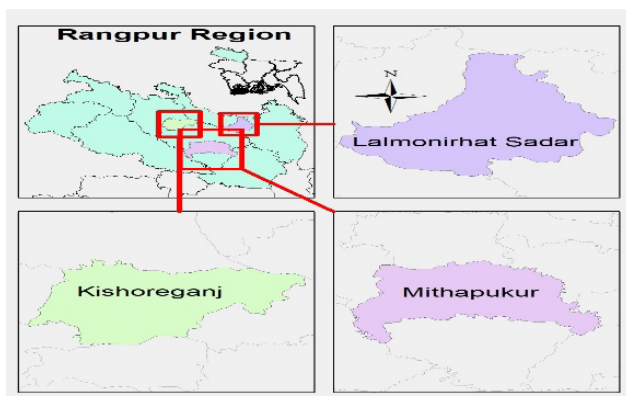


Figure 1. Map of the Study Area

For any type of research, it is necessary to select a study area for fulfillment of the objectives of the research, acceptability of the data is another reasons behind the selection to study area. In this study researcher observed the socio-economic status of tobacco farming people in Rangpur region. Because this area represents the tobacco cultivation and it impact in the northern part of Bangladesh. The people of Rangpur region is very much affected by tobacco cultivation. The present study was carried out in Rangpur region of Bangladesh. The researcher selected the area because it is one of the largest area covered by tobacco cultivation.

3. Results and Discussion

3.1. Residential Status and Living Facilities of the Respondents

From the beginning of the human civilization, houses of the inhabitant in an area were made of bamboo, straw, woods, tin, and so on. At present by analyzing the data of the respondents, it was seen around 56% respondents lived tin shaded and wooden building.

Table 1. Residential Status and Living Facilities of the Respondents

Variables		Count	Percent
Residential Condition	Terraced Building	32	8.3
	Semi-terraced Building	69	18.0
	Tin Shaded/Wooden Building	217	56.5
	Bamboo/ Straw Made Building	66	17.2
Residential Ownership	Own House	371	96.6
	Own House But Not Owned Land	4	1.0
	Demesne Land	9	2.3
Latrine Type	Raw Toilet	149	38.8
	Waterlogged	64	16.7
	Sanitary	103	26.8
	No Latrine	68	17.7
Source of Drinking Water	Tube well	379	98.7
	Pond	5	1.3
Electricity	No	227	59.1
	Yes	157	40.9
Local Residence	No	46	12.0
	Yes	338	88.0
Recreation	No	318	82.8
	Yes	66	17.2

Most of the respondents have tin shaded residential building. Almost all of them are owned by them except a few live in demesne land. Electricity connection is only 40.9%. Except 12% all the respondents are local residence. In response to the question whether they have or haven't place for recreation, 82.8% respondents replied to "no".

3.2. Background and Household Possessions of Different Groups of People in the Sample

The table above shows, most of the respondents are in-between 30 to 49 age category. Most of the educated respondents are involved in business. Bamboo and straw

made building are mostly seen among the labors. Business people own most of the terraced building. Most of the businessman and lest of the labors have electricity connection to their houses. Each one in four labor comes from outside the locality.

Table 2. Background and Household Possessions of Different Groups of People in the Sample

Variables		Category of the Respondents		
		Farmer	Businessman	Labor
Age Category	10-19	0.00	0.00	0.83
	20-29	9.45	19.05	21.67
	30-39	33.33	33.33	35.00
	40-49	36.82	31.75	25.00
	50-59	14.43	12.70	13.33
	60-69	4.48	1.59	4.17
	>70	1.49	1.59	0.00
Education Category	No Education	36.82	1.59	54.17
	Literate	11.94	4.76	14.17
	Primary	20.90	42.86	27.50
	Secondary	19.40	26.98	4.17
	Higher Secondary	6.97	17.46	0.00
	Higher	3.98	6.35	0.00
Residential Condition	Terraced Building	6.97	23.81	2.50
	Semi-terraced Building	21.89	20.63	10.00
	Tin Shaded/Wooden Building	66.67	46.03	45.00
	Bamboo/ Straw Made Building	4.48	9.52	42.50
Residential Ownership	Own House	96.52	98.41	95.83
	Own House But Not Owned Land	1.00	0.00	1.67
	Demesne Land	2.49	1.59	2.50
Latrine Type	Raw Toilet	43.28	28.57	36.67
	Waterlogged	17.91	17.46	14.17
	Sanitary	29.35	46.03	12.50
	No Latrine	9.45	7.94	36.67
Source of Drinking Water	Tube well	98.01	100.00	99.17
	Pond	1.99	0.00	0.83
Electricity	No	56.72	36.51	75.00
	Yes	43.28	63.49	25.00
Local Residence	No	5.47	7.94	25.00
	Yes	94.53	92.06	75.00
Recreation	No	87.56	58.73	87.50
	Yes	12.44	41.27	12.50

The table above shows, most of the respondents is in-between 30 to 49 age category. Most educated respondents are involved in business. Bamboo and straw made building are mostly seen among the labors. Business people own most of the terraced building. Most of the businessman and lest of the labor have electricity connection to their houses. Each one in four labor comes from outside the locality.

Tin shaded buildings are popular among all the respondents. But bamboo and straw made buildings mostly visible in labor community. Terraced buildings are mainly visible in business peoples.

Business peoples are enjoying more electricity in ratio than farmers and labors whereas labors have the least electricity connections.

3.3. Economic Impact of Tobacco Farming

The economic impact of tobacco cultivation has been analyzed from multi-dimensional perspective. The economic condition of the people of those districts situated in the most remote north of the Bangladesh is not so good in comparison to other parts of Bangladesh. Employment opportunity is so limited here. Due to tobacco cultivation a new gateway of employment was developed for of this region.

Table 3. Economic Impact of Tobacco Farming

Variables		Count	Column %
Year of Cultivation	1 - 5 Years	153	39.8
	6 - 10 Years	132	34.4
	11 - 15 Years	61	15.9
	16 - 20 Years	15	3.9
	>21 Years	23	6.0
Previous Occupation	Cereal Crops Producer	151	39.3
	Farmer	59	15.4
	Have No Occupation	54	14.1
	Labor	42	10.9
	Vegetables Producer	78	20.3
Earlier Economic Condition	Very Bad	12	3
	Bad	103	27
	Average	222	58
	Well	27	7
	Very Good	20	5
Increase in Income	No	56	14.6
	Yes	328	85.4
School Going	Yes	265	69.0
	No	110	28.6
	Not Applicable	9	2.3
Type of Workforce	Male Worker	5	1.3
	Female Worker	91	23.7
	Both Sex Worker	288	75.0

The farmers those who involve in tobacco farming many of them came to tobacco farming recent years. Within last 6-10 years 34.4% of current tobacco farmer came in to farming. Within last 5 years even more people engaged in tobacco farming. Most of the tobacco producers previously were a cereal crop producer. Total 85.4% respondents said it has changed their income in positive direction.

Only 14 percent of the tobacco farmer starts their profession as tobacco farmer. Other 86% of tobacco farmer actually changed their profession as tobacco producer. Most of them were farmer but use to produce cereal crops, vegetables or other food items. Only 11% people changed profession from day laboring.

Interestingly, 26.82% respondents said that their previous economic condition was bad and 3.13% said it was very bad. On the other hand, 7.03% said they were well previously and 5.21% said they were very good.

3.4. Social Problems due to Tobacco Cultivation

The respondents were asked about related problems regarding tobacco cultivation. In the following table, researcher has presented the problem related tobacco cultivation.

Table 4. Social Problems due to Tobacco Cultivation

Variables		Count	Column %
Generation of Conflict for Tobacco Cultivation	No	206	53.65%
	Yes	178	46.35%
Movement Regarding Tobacco Cultivation	No	325	84.64%
	Yes	59	15.36%
Fighting for Tobacco	No	278	72.40%
	Yes	106	27.60%
Extortion in Transport Sector	No	374	97.40%
	Yes	10	2.60%
Extortion in Business Sector	No	374	97.40%
	Yes	10	2.60%
Forcefully Tobacco Farming	No	306	79.69%
	Yes	78	20.31%
Forcibly Land Selling for Tobacco Farming	No	379	98.70%
	Yes	5	1.30%
Social Impact of Addiction	Children Are addicted	51	13.28%
	Women Are Addicted	21	5.47%
	Youth Are Addicted	293	76.30%
	Both Children and Youth Are Addicted	19	4.95%

Around 46.35% of respondents said that conflicts broke out related to tobacco farming while 53.65% said it didn't occur. Another, 15.36% respondents said movement formed regarding tobacco farming in their region. Total, 27.6% said fighting happens over tobacco cultivation. Similarly, 10 respondents report that extortion in transport and business sector happens in their region. Surprisingly, 20.31% respondents said forced tobacco farming happened in their locality and 5 respondents said they are forced to sell their land for tobacco farming.

Table 5. Category of Monthly Income of the Respondents

Monthly Income	Farmer	Businessman	Labor
<6000	18.41%	11.11%	66.67%
6001-11000	28.86%	12.70%	25.83%
11001-16000	25.37%	12.70%	6.67%
>16000	27.36%	63.49%	0.83%

Businessman respondents have the most income among all three groups. Two third of them earn more than 16000 BDT per month. On the contrary, labors have the least income per month. Every two out of three labor earn less than 6000 BDT per month.

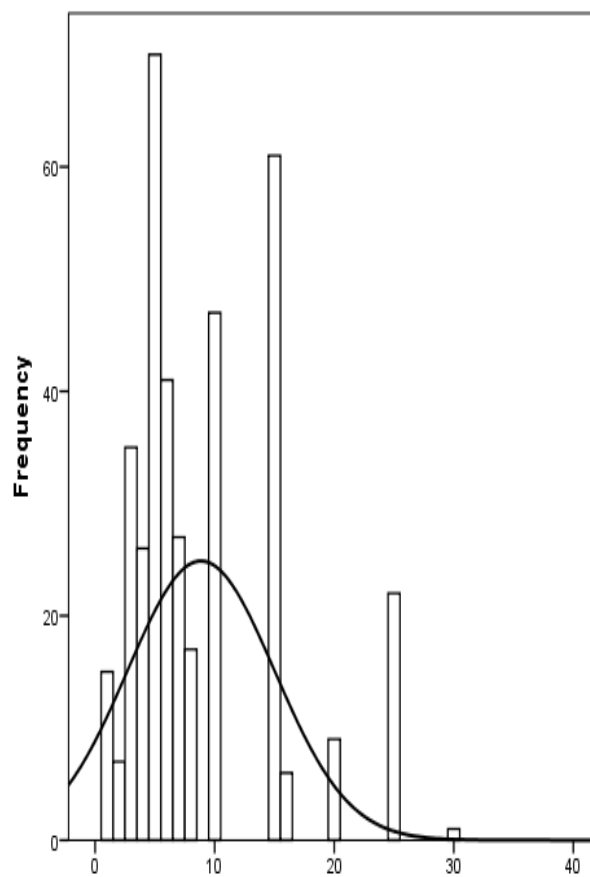


Figure 2. Year of Involvement in Tobacco Farming

The histogram shows the number of years farmers are involved in tobacco cultivation. Highest numbers of people engaged with tobacco cultivation are involved less than eight years. Which is clearly indicates that many new farmers are involving with tobacco farming.

3.5. Chi-square Test Between Category of Year of Cultivation and Increase in Income

To understand economic condition of the tobacco farming people is one of the major objective of this research. That is why researcher tried to find out relation between year of cultivation and economic development of the respondents.

Table 6. Chi-Square Test Between Category of Year of Cultivation and Increase in Income

Category of Year of Cultivation		Increase in Income		Total
		No	Yes	
1 - 5 Years	Observed	28	125	153
	Expected	22.3	130.7	153.0
6 - 10 Years	Observed	27	105	132
	Expected	19.3	112.8	132.0
11 - 15 Years	Observed	0	61	61
	Expected	8.9	52.1	61.0
16 - 20 Years	Observed	1	14	15
	Expected	2.2	12.8	15.0
>21 Years	Observed	0	23	23
	Expected	3.4	19.6	23.0

Researcher has found that observed counts are different than expected count in the above crosstab. There are two expected count is less than 5 which is not exceeded the minimum assumption of chi-square test.

Table 7. Chi-square Table

Chi-square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-square	20.446a	4	.000
Likelihood Ratio	32.304	4	.000
Linear-by-Linear Association	12.157	1	.000
N of Valid Cases	384		
a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 2.19.			

The Chi-square test table shows that the test is significant in 0.01 levels. The Pearson Chi-square test value is 20.446. From the Chi-square distribution table researcher found that the minimum value should be 13.277, whereas the degree of freedom is 4 and the p value is 0.01. So the Chi-square value is clearly exceeded the minimum value. Its mean the null hypothesis is rejected and alternative hypothesis is accepted.

Table 8. Symmetric Measure Table

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	.231	.000
	Cramer's V	.231	.000
N of Valid Cases		384	
a. Not assuming the null hypothesis.			
b. Using the asymptotic standard error assuming the null hypothesis.			

From the symmetric measures table, researcher can see the Phi and Cramer's V test results. The value 0.231 meaning is that the category of the year of cultivation has small to moderate effect on increase of income.

Results: With regard to the increase of income there is a significant difference among the category of years of cultivation. The chi-square (χ^2) value shows the difference at 0.01 levels. Hence, the null hypothesis is rejected and the research hypothesis is accepted. It is concluded that there exists a significant difference in increase of income among the respondents.

In context of Bangladesh, study on socio-economic condition of tobacco farming is not available, only one study done regarding food security [19] and another related to health and environmental impact of tobacco farming among the folk people [20].

4. Conclusion

Analyzing the overall scenario of this part it is found that economic development was achieved in all peoples'

life. But social condition became worsen in the study area. Among this addiction is most common in the study area.

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