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## Study on tobacco cultivation and its impacts on health and environment at Kushtia, Bangladesh

**Rezaul Karim<sup>a</sup>, Nazneen Nahar<sup>a</sup>, Tasnima Shirin<sup>b</sup> and Md. Alinur Rahman<sup>a</sup>**<sup>a</sup>Dept. of Environmental Science and Technology, Jessore University of Science and Technology (JUST), Jessore- 7408, Bangladesh<sup>b</sup>Dept. of Botany, Eden Mohila College, Dhaka, Bangladesh

✉ r.karim@just.edu.bd (Karim, R.), ☎ +88-0421-62020, Ext. 206, Published: 14 May 2016

### ABSTRACT

*The objective of this study was to relate the socio-economic and health status of the people and environmental problems associated with tobacco farming. The case study was selected at a village named Patuyokandy, Bheramara, Kushtia, where tobacco was commonly cultivated. Primary data was collected through personal interviews. There were 51 respondents selected randomly from the study area. From the field survey, the wealth stratification of the study area indicates that the poor groups embodying the largest number of households; the percentage of rich category is high and the major economic activity among the respondents is tobacco cultivation, the most vulnerable sector of tobacco cultivation are high level of vulnerability of communities in the study area. Around 100% percent respondents expose that tobacco farming is comparatively economically beneficial than other crops grown in the study area. There were about 62.75 % of the participants, issued economic initiatives in bonded for cultivating raw tobacco for a tobacco manufacturing company. It can be concluded to its various consequences, i.e., due to the frequency and magnitude of the pollution caused by tobacco cultivation, it is necessary to take necessary steps to resolve the problems by decision makers and the Government.*

**Key Words:** Tobacco cultivation, Public health, Environment and Socio-economic status

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### I. Introduction

Bangladesh, one of the largest countries, has been consumed a significant portion of tobacco in the world. According to Global Tobacco Surveillance System (2009) which was conducted on adult tobacco consumer around the world, it is estimated that over 46.3 million person ages 15 and older consume tobacco products, including over 43% of all men and nearly 29% of women (Barkat & Chowdhury, 2012). There are varieties of tobacco users in Bangladesh, ranging from youth to adult, from male to female, differing variety of different products. Men are much more likely to smoke than women, with smoking prevalence among men at nearly 45%, as compared to 1.5% among women.

Most female smokers smoke beedi, while men are more likely to smoke manufactured cigarettes, although many consume beedis (GYTS, 2008).

Tobacco is a non-nutritious food and any tobacco raw material for any industry is not suitable for the well-being of human. Tobacco products and its associated items such as cigarette, beedi<sup>1</sup> and other uses of tobacco have harmful effects on human health (Motaleb and Irfanullah, 2011). On the other part, the cultivable land of tobacco is still less as only 0.25% as compared with all crop production in Bangladesh. Considerably, there was only 0.22% land of all agricultural production by tobacco in 2009 (FAO, 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).

Smoking of tobacco and other uses force a huge burden in the increasing cost of public health globally and in the developing countries like Bangladesh. Tobacco use enforces economic costs in different ways. This could be on account of health care expenditures to treat the tobacco causing diseases. This also could decline the productivity of human potentials due to tobacco related illness and sudden death immaturity (Barkat and Chowdhury, 2012). On the other hand, tobacco farming causes huge negative impacts on native environments (Akhter, 2011). It is also reported that at primarily, the farmers are paid a handsome cash money but continually have been experiencing loss in terms of soil potency, plant diversity; poultry and livestock and human health (Akhter, 2011). For example, when tobacco cultivation was started in the Kushtia district, the declination of soil fertility occurs. For saving the environment, there was planting of one species such as Ipil Ipil by British American Tobacco company, though it has the claim of unfriendly to our environment (Akhter, 2010). Yet there is prolonged tobacco farming exist in the surrounding area of the Kushtia district. Objectives of this study are to know the causes of tobacco cultivation, to observed the socioeconomic status in the study area, to estimate the health problems associated in natives of in the study areas and to know the present status of cultivable lands.

## II. Materials and Methods

Patuyokandy village, Dharampur union of Bheramara upazilla in Kushtia district at Bangladesh is selected for this study. Bheramara Upazila with an area of 153.72 sq km, is confined by Mirpur upazila on the south, Lalpur upazila on the north, Daulatpur upazila on the west and Ishwardi upazila and the Ganges (Padma) on the east and. The Ganges flows by the side of the upazila. The notable Dhamodar Beel is situated in this area (Banglapedia, 2013). Information and data were collected from both primary and secondary sources for cross-checking and interpretation. Primary data has been collected by a defined questionnaire from the study area and the secondary data are those which have been already collected by someone else and which have already been passed through the statistical process. Secondary information such as statistical data and reports have been collected from various office of government and NGO's. Questionnaire was used to detect the objectives of the study. This was the pre-tested in the field and necessary modification was done before finalization. Household members whose ages are more than 25 years and have knowledge and experience regarding tobacco cultivation and its impact were treated as sampling unit and 51 respondents answer were taken for this study. Random sampling method was used for the household survey. Microsoft Excel was used for data analysis. Results of interpretation is presented by relevant tables and graphs.

## III. Results and Discussion

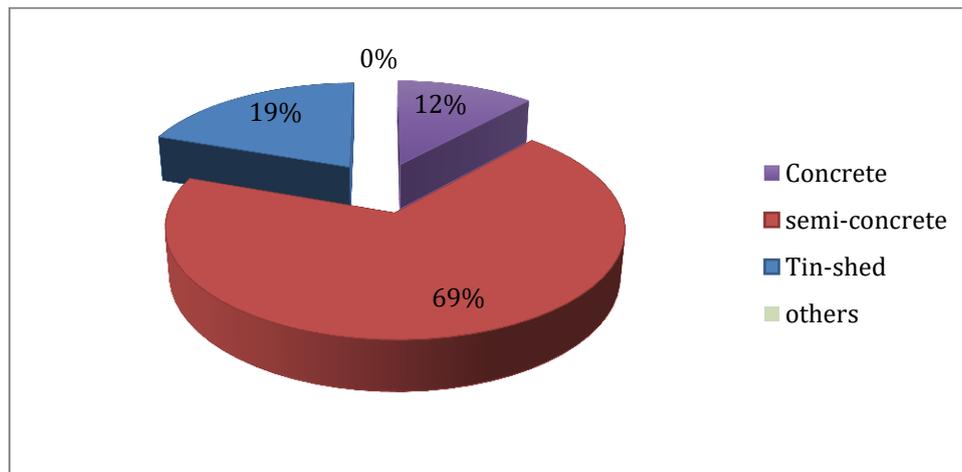
**Socio-economic condition of study area:** Livelihood state of farmers, mainly tobacco cultivators, was the main feature emphasizing on educational status, occupational status, housing condition, farming experience, income and others socio-economic issues.

**Housing condition:** Condition of housing of any area usually indicates their social profile. Household category also depends on the family members when family members are increased, their house hold

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<sup>1</sup>Beedi are thin, hand rolled cigarettes that are made mostly in India and other Southeast Asian countries. The tobacco is wrapped in a tendu or temburni leaf, and tied with a colorful string.

category are increased. During the survey, there were attempts to find out the forms of living house of the people. The study area, rural part of the district, was not developed as like as the main town of the Kushtia district. A large portion of the houses, about 68% were semi-concrete, one fifth was corrugated tin and the rest were concrete made (Figure 01).



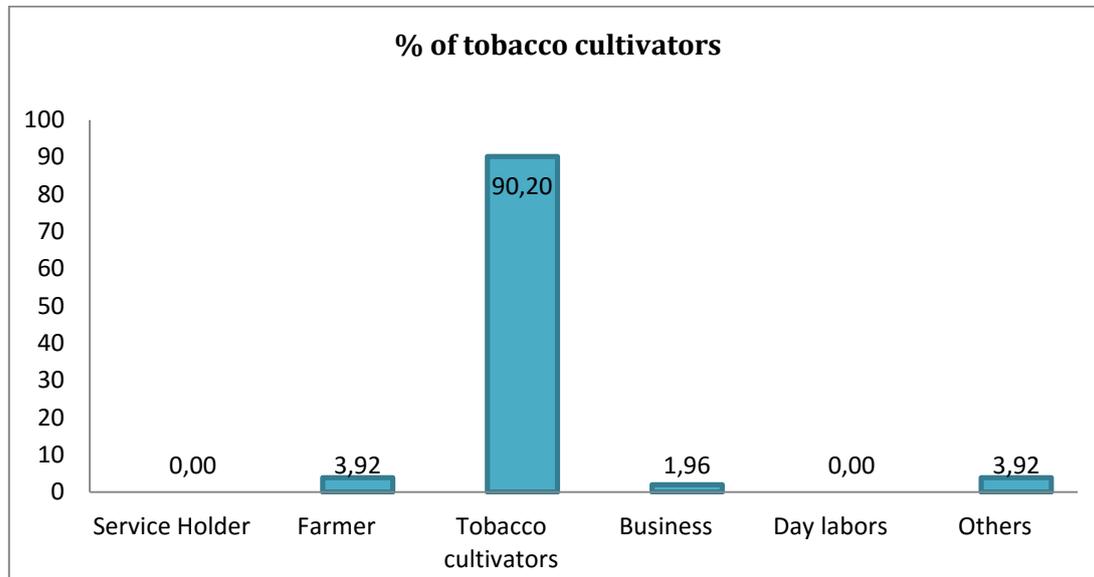
**Figure 01. Housing Condition of Tobacco farmers in the study area.**

**Educational status of participants:** Education has an important role in emerging agriculture development for an agrarian country like Bangladesh as the educated farmers’ are keen to cultivate more eco-friendly crops with more economic benefits by applying modern technology. They are also perceived the negative effects of the growing harmful crops like tobacco. But it was reported that both illiterate and educated people grow tobacco for various reasons. Literacy status is shown in the table below (Table 01).

**Table 01. Educational qualification of the respondents**

Educational qualification	Frequency	Percentage
Illiterate	31	60.78
Primary	9	17.65
Secondary	5	9.80
HSC	5	9.80
Graduate	0	0.00
Post graduate	1	1.96
Total	51	100

**Business status of respondents:** Among the defendants in the survey, most of them, about 90% were tobacco cultivators, the rest are farmer (4%), business man (2%) and others (4%). In the study area, there were day labors and service holder who also associated with tobacco farming.



**Figure 02. Livelihood activities of respondents.**

**Wealth stratification:** Four major social groups were identified. These are the poor group; the medium rich group; the rich group and the high rich group. Their proportions of the groups were provided by the local people as presented in Table 02.

**Table 02. Distribution of wealth groups in Patuyokandhy**

Wealthy group	Income level / month(tk/month)	Frequency	Percentage (%)
Poor group	(5000-30000)	40	84.31%
Medium rich group	(31000-60000)	7	13.73%
Rich group	(61000-90000)	2	13.73%
High rich group	(91000-120000)	2	1.96%

Socio-economic status is dependent on income, the more income the better socio economic status. The classification of wealth groups are categorized as poor group, medium rich group, rich group and higher rich group people on the basis income. From the above table, it can be seen that the most of the people are in poverty level. This was due to the large family size but one earning person with no supportive members who depends only tobacco cultivation. In addition, the earning is too small to meet the demands of the whole family with limited income. For this reason it can be said that the socio economic condition of these study area is not good.

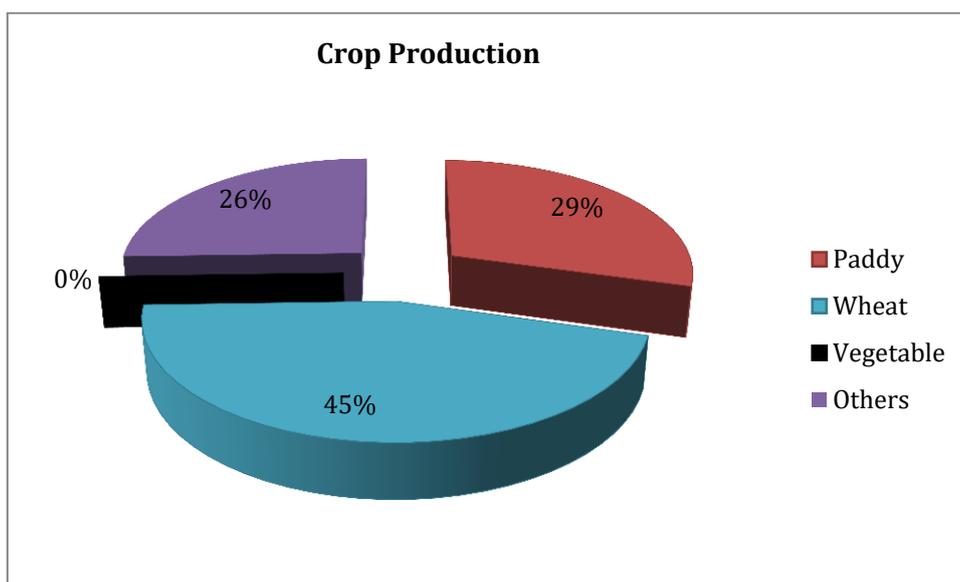
**Reasons for tobacco cultivation**

Reasons of tobacco cultivation are a combined result of socio-economic status, soil & climatic conditions, economical and other external pressure. Farmers initially get some income by hand but are not conscious about the future potential problems like soil fertility decline, plant diversity reduction, loss of livestock and poultry; and finally health problems of themselves. There are several studies with finding about the fact of attracting tobacco farming from commercial inspiration. According to [Akhter \(2010\)](#) there are some crucial facts for increasing farming of tobacco in different regions of Bangladesh. One of the main cause is the earning of some cash money at a time. 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. They, at times, issued card that ensure the input market mechanisms, for continuing tobacco cultivation. Inadequate assistance from agriculture department distracts the farmers to remain in the traditional food cultivation ([Akhter, 2010](#)). [Akhter](#)

(2010) also highlighted some other reasons from the newspapers for extensive tobacco cultivation. These include getting credit from tobacco companies; high process of seeds, chemicals, labors for cultivation and less guarantee of benefits; and finally some time farmers do not get economic benefits from harvesting vegetables like tomato and potato in the winter seasons, because of lack of necessary chemicals, cold storage facility when grow excessive and become discourage by improper market policy of common vegetables.

**Tobacco cultivation and problems**

**Crop production before tobacco cultivation:** Agriculture is the single largest production sector of the country. In the past, agricultural practices were performed in this area and the production capacity were good but at present this practices are performed in rather smaller scale. From the survey, result has been found that the people are involving of 45% wheat, 29% paddy, 0% vegetable and 26% Others crop production before tobacco cultivation.



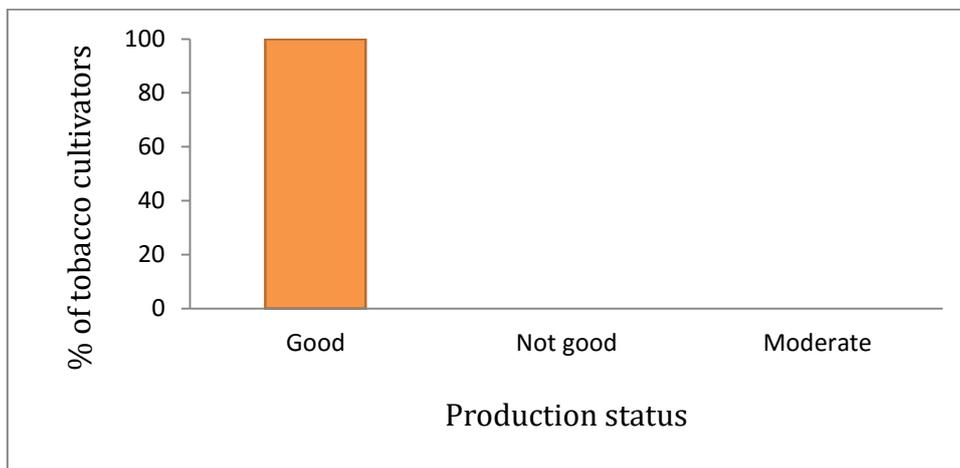
**Figure 03. Before crop production status.**

It was found from the survey, the crop production of other crops are not benefited and small amount it is thought due to soil quality and climatic conditions. At a result most of the people cultivate tobacco in the study areas (Table 03).

**Table 03. Status of other crop production**

Status	Frequency	Percentage
Good	0	0
Not good	29	56.8627451
Moderate	22	43.1372549
Total	51	100

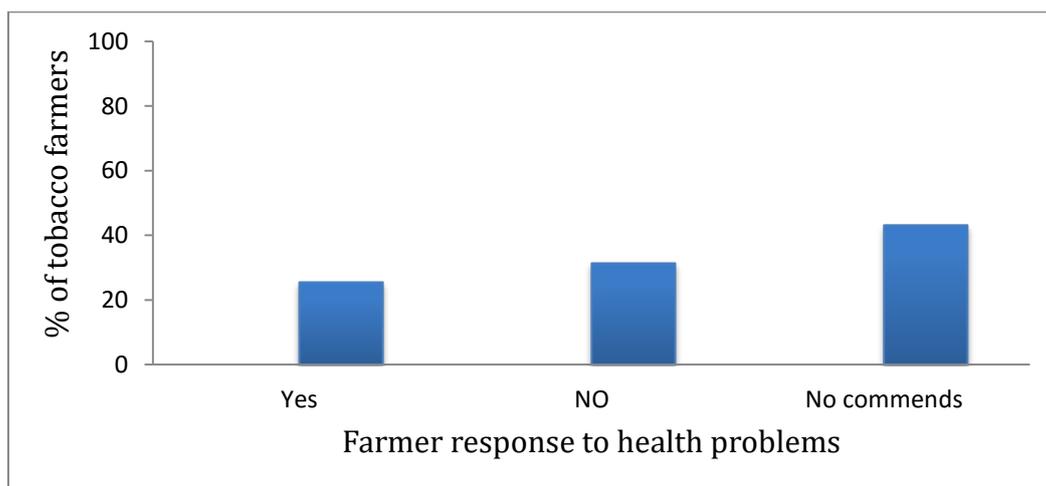
**Status of tobacco cultivation:** About 100% people argued that tobacco production is very good because of topographic and climatic condition as well as return in cash. Tobacco cultivation is undertaken in the areas with access to existing fertile soil, and it increases employment opportunities. The study area is somewhat famous for tobacco cultivation and here it is cultivated in both large and smaller scale.



**Figure 04. Status of tobacco production**

In the past, tobacco production status was really good but at present the field survey result represents that 100% people said that its production capacity is not desirable. They think various types of disaster, i.e., temperature variations, recurrent floods, drought variations, cyclone and others conditions, increases tobacco disease, for this reason their production capacity is decreasing day by day. As a result small scale cultivator lose everything which they have been invested and they gradually turn into poorer class people and it is one of the reason for nutrition insecurity and unemployment generation. Tobacco cultivation may be beneficial for wealthy or large scale farmers, but not the poor and or marginal farmers.

**Tobacco cultivation and health problems:** From the above graph, it has been seen that 26% people suffered from health problem by tobacco cultivation; some people suffer from diarrhea, some suffer from dysentery, some people suffer from malaria and some people suffer from pain & headache. Although, these diseases could occur due to other unknown reasons which are not studied in this study. However, 31% people are not suffering from health problem while 43% people provide no comments on their health problems that may arise tobacco cultivation. Due to increase disease incidence people want to migrate from these places to other places, where they might have access to clean drinking water, sanitation facilities and less natural hazardous risks which help them to improve their health and living condition.



**Figure 05. Suffering health problem by tobacco cultivation.**

**Tobacco cultivation and other issues:** There are study findings in different regions of Bangladesh on the impact of tobacco farming on socio-economic status; human health and the environment. It was reported by researchers that tobacco definitively cause harm in many ways. It was studied that it cause soil depletion, excessive use of water and chemical fertilizers, pesticide and so on. In this study, the respondents also focus some options on various issues other than health problems (Table 04).

**Table 04. Attitude of respondents about tobacco cultivation**

Opinions of participants	Positive response	Negative Response	No comments
Causing environmental degradation.	51 (100%)	0 (0%)	0 (0%)
Declining soil fertility	51 (100%)	0 (0%)	0 (0%)
Injurious for health.	13 (25.49%)	38 (74.50%)	0 (0%)
Required a huge amount of fertilizer	51 (100%)	0 (0%)	0 (0%)
more profitable than other crops	51 (100%)	0 (0%)	0 (0%)
Chance of handsome amount at a time	51 (100%)	0 (0%)	0 (0%)
Courageous by any company	32 (62.75%)	19 (37.25%)	0 (0%)

From table 04, 51 respondents say tobacco farming causes environmental degradation although insights of this facts are not studied in this study. While almost 100% participants responded that tobacco cultivation decline soil fertility but the nature and extent of fertility decline is not evident from this study. However, about 100% percent respondents reveal that tobacco cultivation is more economically beneficial compared to cultivate other food crops. This could be threat to crop diversity through decreasing the production of other crops, thereby it may create food crisis in study area in the long run. It is observed that 62.75 percent of the respondent says that they are supported for tobacco cultivation by many tobacco manufacturing companies which are located in the Kushtia district. About 62.75 percent of the participants agree that they are borrowing money from companies to get involve into tobacco cultivation.

#### IV. Conclusion and Recommendation

This study was aimed to identify the socio-economic status of tobacco farmers. Most of the people are illiterate but significant number of farmers are involved in tobacco farming. Socio-economic condition focuses somewhat social improvement through tobacco farming; and its associated economic activities because of mainly short term economic benefits. Thereby the living standards show an increasing trend day by day. But the farmers are not conscious about the negative impacts of tobacco farming on soil fertility, environment and even on their health. Their educational state also indicates their poor artlessness. Several impacts on health of studied groups of people, who are directly and indirectly involved in tobacco cultivation. The direct users such as family members including children and adults; other workers associated with tobacco processors, producers; and neighbors are directly adversely affected by tobacco. The effects on soil, tobacco depletes soil nutrients at a substantial way; this crop requires regular inputs of chemical fertilizers, and more extensive pesticides. Their successive applications effect negatively on cultivation of other crops and may poison farm workers and cause chronic health problems. It has been reported that tobacco is also responsible for deforestation in the area. To tackle this problem, the government should take necessary steps through the Ministry of Agriculture, Forest, through taking inspiring initiatives that helps farmers to cultivate food crops to face the food crisis as well as plantation trees. It can be suggested that to combat the tobacco crisis, a widespread strategy, in general and a strict rules and regulation should be taken and implemented by the government. It is also necessary that the volunteer workers, non-govt. workers campaign against tobacco farming in an integrated way, focusing on the adverse effect on food production, soil fertility, environment and health. Tobacco manufactures should be imposed to a heavy levy that could be used to educate the tobacco farmers and train them for conscious of their problems and basic rights associated with tobacco farming.

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