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The Drivers of Tobacco Cultivation in Jhenaidah: An Anthropological Exploration of Farmer Motivations

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Abstract: This study investigates the factors driving tobacco cultivation in Jhenaidah, Bangladesh, focusing on the motivations of farmers in the region. The study examines Dangipara village in Shailkupa Upazila, a key tobacco production site. This study explores the reasons behind farmers' continued engagement in tobacco farming despite its well-documented environmental and health impacts. Employing qualitative methods, including ethnographic interviews and focus group discussions with 40 experienced farmers, the study identifies key drivers such as the availability of modern agricultural tools, access to microcredit, and the influence of tobacco companies in shaping farming practices. The findings reveal that tobacco farming is favored due to its higher profitability, stable market conditions, and strong support from tobacco companies when compared to traditional crops such as paddy, pulses, and vegetables, which are often hindered by price instability and inadequate marketing infrastructure. Additionally, the study highlights the importance of required family labor, as households with more working members benefit from reduced cultivation costs. Favorable land conditions also play a role, as long-term tobacco farming has degraded soil quality, making it unsuitable for alternative crops. The latent role of the Agriculture Office is another factor, as the lack of effective support for alternative crops contrasts with the active assistance provided by tobacco companies. Lastly, influence from neighbors who have successfully adopted tobacco farming encourages others to follow suit, despite the challenges faced by less affluent farmers. Based on these findings, the study recommends addressing market challenges and promoting alternative, profitable crops to incentivize farmers to transition away from tobacco cultivation, thereby reducing the region's dependence on tobacco farming.

Keywords: *Commercial Farming, Farmer Motivations, Tobacco Companies, Tobacco Cultivation*

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1. Introduction

Bangladesh is one of the world's largest consumers of tobacco. Although employment in tobacco farming represents less than 0.5% of agricultural work in the country (Barakat et al., 2012), Bangladesh ranks 14th globally in terms of land area dedicated to tobacco cultivation, 8th in production, and contributes 1.3% to the global tobacco supply (FAO, 2019). British American Tobacco initiated commercial tobacco cultivation in Bangladesh, and after independence, the Teesta Valley, previously used for growing food crops, saw a significant expansion in tobacco farming. Tobacco, a non-food plant, is the primary raw material for cigarettes, bidis, and other smokeless tobacco products, all of which are proven to be harmful to health, the environment, and society (Akhter and Mujahidul, 2011; Karima and Rahman, 2016). Several studies have identified the factors behind farmers' engagement in tobacco farming, including cash earnings, high profits, advance pricing, and market guarantees. Additionally, company practices have played a coercive role in sustaining tobacco farming (Akhter and Mujahidul, 2011; Rahman and Islam, 2020).

In Bangladesh, commercial tobacco cultivation expanded notably after the country's independence in 1971, particularly in the Rangpur region (Sarker and Haque, 2001). Today, major tobacco-producing areas include Rangpur, Lalmonirhat, Kushtia, and the Chittagong Hill Tracts, with significant cultivation also occurring in 15 other districts such as Nilphamari, Jhenaidah, and Tangail (Barakat et al., 2012; Kabir, 2022). A review of the research

shows that most studies on tobacco cultivation have focused on specific regions like Kushtia, Rangpur, and the Chittagong Hill Tracts. However, no studies have been conducted in Jhenaidah, a key tobacco-growing district where cultivation is increasing annually. Recent reports highlight this trend, noting that despite government efforts to discourage tobacco farming, cultivation has surged, especially in areas like Shailkupa Upazila. A Bangla newspaper report revealed that in our study area, tobacco was cultivated on approximately 30% more land compared to the previous year (Kabir, 2022).

Data on tobacco cultivation from 2009 to 2018 shows a consistent increase in tobacco-cultivated land, despite an overall decrease in the country's cultivable land. This trend exacerbates food security concerns, as the expansion of tobacco farming replaces land previously used for food crops (Akhter and Mujahidul, 2011). The replacement of food crops with tobacco poses a serious threat to food security. Furthermore, tobacco cultivation has harmful effects on health, the environment, and society. Nicotine exposure from tobacco leaves presents significant health risks, particularly through skin absorption during harvesting, leading to Green Tobacco Sickness (GTS). GTS causes symptoms such as nausea, vomiting, and dizziness, primarily due to dermal nicotine transfer, which is worsened by environmental factors such as temperature and rainfall (Ziska & Parks, 2024). These adverse impacts raise critical questions about why farmers continue to engage in tobacco cultivation.

Agriculture and peasant society are integral to Bangladesh's social and cultural fabric. Peasant societies have unique cultural characteristics, making them important subjects for anthropological research. While much of the previous research on tobacco farming has been quantitative, focusing on statistical data and the consequences of cultivation, it has often overlooked the cultivation process and the shift from traditional subsistence farming to market-driven agriculture. Therefore, comprehensive research in Jhenaidah is essential to better understand farmers' motivations and practices. Studying these communities is key to understanding the larger agricultural population. Research indicates that farming methods, attitudes, and lifestyles constantly evolve, with farmers transitioning from subsistence to commercial farming. Their growing dependence on banks, tobacco companies, and markets highlights the need for a study on the current status of tobacco farmers.

This study aims to investigate the factors influencing farmers' involvement in tobacco cultivation, focusing on Dangipara village in Shailkupa Upazila of Jhenaidah district, a notable site for tobacco production. The objectives of this study are:

1. To investigate the prevalence of tobacco cultivation in the study area
2. To identify the drivers motivating farmers to engage in tobacco cultivation
3. To provide effective strategies to reduce tobacco cultivation.

2. Materials and methods

This study employed qualitative research methods in Danggipara village, located in the Shailkupa Upazila of Jhenaidah district in southeastern Bangladesh. The region is predominantly characterized by tobacco cultivation, involving most local farmers. Both primary and secondary data were utilized, with primary data collected through extensive fieldwork. A purposive sampling method was used to select participants, ensuring the representation of diverse variables and experiences. This approach also facilitated the identification of key informants and critical areas of interest, supporting the natural development of relationships essential for in-depth ethnographic research.

To understand farmers' perspectives on tobacco cultivation, anthropological techniques were employed, as they offer deeper insights into cultural practices and beliefs. Qualitative methods were chosen over quantitative ones due to their ability to capture the complexity of human experiences. Ethnographic interviews were central to this approach, providing rich and detailed narratives about participants' experiences and interpretations. A total of 40 farmers, each with at least five years of experience in tobacco cultivation, were interviewed to ensure depth of knowledge and insight. Additionally, three focus group discussions (FGDs) were conducted, involving 18 participants from the village community. Each FGD comprised at least six respondents, all over 20 years old and with firsthand experience in tobacco cultivation. The narrative and storytelling approach in these discussions allowed participants to share personal and collective experiences, contributing to a comprehensive understanding of the community's views.

Thematic analysis was employed to process and interpret the collected data, making it particularly useful for handling qualitative data sets. The analysis followed a structured approach, beginning with identifying initial codes, grouping them into code families, and finally distilling them into emerging themes. This method enabled researchers to uncover patterns and insights, leading to a thorough interpretation of the findings.

Ethical considerations were ensured throughout the study. Participants were fully informed about the study's purpose, and oral consent was obtained before their involvement. This ensured voluntary participation, safeguarding their autonomy and upholding ethical standards of transparency, respect, and well-being.

3. Results

3.1. Prevalence of Tobacco Cultivation in the Study Area

The history of tobacco cultivation dates back thousands of years, originating in North and South America. The scientific name for the tobacco plant is *Nicotiana tabacum*, and its cultivation is believed to have begun around 6,000 BC. On October 15, 1492, American Indians presented dried tobacco leaves to Christopher Columbus, marking the

plant's introduction to Europe (Boston University Medical Center, 1999). Columbus is often credited with bringing tobacco to Europe, where it gained popularity due to the belief that its leaves had medicinal properties, including curing diseases and even cancer (Boston University Medical Center, 1999). Tobacco eventually spread beyond Europe. In the Indian subcontinent, the Portuguese introduced tobacco around 1508 (Chikkala, 2014).

In Bangladesh, tobacco cultivation expanded significantly after the country's independence in 1971. Three main types of tobacco—*Jati*, *Motihari*, and *Virginia*—are cultivated, with *Virginia* tobacco being the most popular. Introduced commercially by British American Tobacco in 1976, *Virginia* tobacco quickly gained popularity due to its profitability (Rahman and Islam, 2020). The fertile lands of the Teesta River in the Rangpur region initially supported this expansion, but over time, soil degradation prompted a shift towards Kushtia (Hossain and Rahman, 2013).

Table 1: Amount of land under tobacco cultivation for the last five years (Source: Bangladesh Statistical Yearbook-2023)

Year	Tobacco Cultivated Land (Acres)	Tobacco Produced (Tons)
2018-19	93998	82399
2019-20	100006	85853
2020-21	99600	89002
2021-22	100384	92326
2022-23	93107	86583

This data illustrates the fluctuation in tobacco cultivation over the past five years, peaking in 2021-22 when 100,384 acres were used for cultivation and 92,326 metric tons of tobacco were produced. Despite declining cultivated land in 2022-23, production remained significant, demonstrating the ongoing economic importance of tobacco farming in Bangladesh.

Tobacco cultivation in the Jhenaidah district has experienced significant growth over the past few decades, with its expansion extending to areas such as Jessore, Nilphamari, Lalmonirhat, and Tangail (Akhter, 2011; Kabir, 2022). Currently, Jhenaidah is one of the key tobacco-growing regions, with 3,707 acres of land dedicated to tobacco cultivation in 2022-23 (BBS, 2023). Data from the past five years shows a steady increase in the land under cultivation and tobacco production.

Table 2: Amount of land under tobacco cultivation in Jhenaidah district during the last five years (Source: Bangladesh Statistical Yearbook-2023)

Year	Tobacco Cultivated Land (Acres)	Tobacco Produced (Tons)
2018-19	4021	3200
2019-20	4701	4048
2020-21	4002	3307
2021-22	4018	3421
2022-23	3706	3111

Table 2 shows that the cultivated area increased from 4,021 acres in 2018-19 to 4,701 acres in 2019-20, with production rising from 3,200 metric tons to 4,048 metric tons during the same period. This growth is largely attributed to the economic benefits for farmers, supported by tobacco companies that provide resources and incentives to promote tobacco farming.

In discussions from the Focus Group Discussion (FGD), Mahir Uddin and Alim Joadder illustrate the transformation of the agricultural landscape. Mahir Uddin, a senior farmer, recalls the early challenges of tobacco farming, including a lack of modern irrigation and the labor-intensive nature of cultivation. He notes that the introduction of modern machinery and support from tobacco companies has significantly eased the process, making it more profitable.

Alim Joadder, who worked for British American Tobacco before becoming a farmer, describes how the company began promoting tobacco cultivation in the area starting in the 1990s. He highlights the shift from subsistence to cash crops, driven by the availability of modern agricultural tools, microcredit, fertilizers, and pesticides. This shift, coupled with the persuasive efforts of tobacco companies, has led to a significant increase in tobacco cultivation, making land in the area highly valuable.

The results indicate that tobacco cultivation in Jhenaidah has a long history, with significant growth in recent years due to both economic incentives and technological advancements.

3.2. Factors Driving Farmers' Engagement in Tobacco Cultivation

Profitability of Tobacco Farming

One of the primary reasons for farmers' involvement in tobacco cultivation is the comparatively low profitability of conventional crops. Our study indicates that farmers receive less financial benefit from traditional crops than tobacco, prompting a preference for the latter. Takukder et al., (2020) noted that tobacco farming is more profitable than other crops, a finding echoed (Hossain and Rahman, 2013). This is consistent with the experiences of tobacco farmers in our study area, who show little interest in growing conventional crops due to the lower returns.

In context Rashid Biswas (55) and Imroz Sheikh (35) highlight the economic disparity between tobacco and traditional crops.

Rashid points out that while a unit of paddy sells for around 800 Taka, per kg of tobacco sells for 165 Taka. He estimates that one bigha of land can yield around 1 lakh 20 thousand Taka from tobacco, compared to only 20 thousand Taka from paddy, with a net profit of 60 thousand Taka.

Similarly, Imroz notes that even when tobacco profits are lower, they still range between 40,000 and 50,000 taka, significantly higher than the returns from crops like pulses, which barely leave a profit of 10,000 Taka per bigha.

From the data, it's evident that farmers are more inclined towards tobacco cultivation due to its higher profitability. The study found that 28 out of 45 informants were satisfied with tobacco farming and did not intend to switch to other crops. Furthermore, 17 informants cited the poor market price of other crops as the main reason for engaging in tobacco cultivation. This suggests that farmers in the study area prioritize market-oriented agriculture, with a growing emphasis on cash crops like tobacco, driven by the potential for greater profits.

Tobacco Marketing Advantage

The study reveals significant challenges that farmers face when producing alternative crops to tobacco, with marketing being the primary concern. Our research perticipent argue that selling vegetables and other crops like onions, garlic, potatoes, and tomatoes can be difficult, especially without proper storage systems. This often forces them to sell at low prices during peak seasons or even discard unsold produce, leading to financial losses. Unlike tobacco, where prices are fixed and purchase is guaranteed by the company, alternative crops require farmers to find buyers themselves, often incurring additional time and costs. In this regard, Mukta Laskar (45) a farmer who cultivates both fruit orchards and tobacco. He highlights the difficulties in finding buyers for fruits, often resulting in losses due to spoilage during transport or theft from gardens.

Similarly, Abdur Chabur (50) and Imran (45) note the instability of market prices and the need to sell produce at lower prices, sometimes not even covering production costs.

These challenges in marketing and the stable, guaranteed sales provided by tobacco companies make tobacco cultivation more appealing. The ease of selling tobacco and the assurance of a fixed price are significant factors encouraging farmers to prioritize tobacco over other crops, despite the dependency on tobacco companies for leaf grading and pricing. A similar result has been shown (Takukder et al. 2020). Some of the factors involved in the tobacco cultivation of farmers have highlighted the poison. Where he mentions the ease of sale of tobacco products in the market as one of the factors of involvement in tobacco cultivation. In addition, the unstable market price is the main reason for farmers to join tobacco farming (Das et al., 2015).

Favorable Land Condition

After tobacco cultivation, there are often some crops in the land that do not want to do well. Many of the informant farmers think that it is more profitable to cultivate according to the type of land. There are some lands where rice grows well and other crops do not grow well. There are some lands around which tobacco is being cultivated, but other crops cannot be cultivated even if there is a desire. Generally, during tobacco cultivation, there is winter, while wheat, various pulses, chickpeas are cultivated. The informants said that long ago these crops were cultivated in the study area but now these crops are not cultivated. Farmers said that they do not have the land required for this type of cultivation but do not cultivate it.

According to key informant farmers Mahir Uddin (70) and Parvez Hossain (28) said,

long-term tobacco farming has led to soil conditions unfavorable for crops like wheat, chickpeas, and lentils. They noted that lands previously used for cultivating these crops are now primarily devoted to tobacco due to the adverse effects of tobacco cultivation on soil quality. Excessive fertilizer uses and over-irrigation for tobacco have made the soil too wet, causing other crops to rot and yield poorly. This has forced farmers to continue growing tobacco despite their preference for other crops.

Besides, it is known from the group discussion that tobacco cultivation requires extra water, so the soil of tobacco land is wet. Over-irrigation of the land also affects the adjacent land. For which the farmers cannot grow other crops without growing tobacco. Because pulses cannot tolerate excess water. The informants said that if the land is wet, the roots of chickpeas, musk, and corn rot, the yield is not good. As a result, farmers chose to grow tobacco as the land became less suitable for other crops. The findings from group discussions further reveal that the water-intensive nature of tobacco farming affects adjacent lands, making them unsuitable for pulses and other crops sensitive to excess moisture. While economic benefits are often cited as the primary motivation for tobacco farming, as noted by Talukder et al. (2020) and Mahmud (1999), my research indicates that a significant factor is the degradation of soil suitability for alternative crops. This situation compels farmers to choose tobacco over other crops, highlighting the complex interplay between economic incentives and environmental constraints.

Required Family Labor

According to Bhavya (2013), the majority of tobacco farmers reside in joint families, where the presence of family labour greatly impacts their tobacco cultivation practices. Our study corroborates these findings, revealing that households with more working members have been involved in tobacco farming for a long time and tend to cultivate larger areas of tobacco. The labour-intensive nature of tobacco farming is a key factor; when family members provide the necessary labour, it substantially reduces cultivation costs. According to Naher and Chowdhury (2002), the economic cost is much lower when using family labour, encouraging continued tobacco cultivation. This point is also noticeable in my research. As a result, it can be said that family labour power is a logical reason to join tobacco farming. Family labour power is said to be an important rationale behind involvement in tobacco farming. Both research findings are consistent with the results obtained in my study. In this context, the information given by Badr Uddin Kazi (62) is reliable.

"He lives in a joint family. There are eight members in his family. Four of them are men. All of whom help him grow tobacco. By doing this, he does not need labour costs. He said, those tobacco farmers who have fewer members in their families are benefiting from tobacco cultivation as compared to those whose families have more people.

Babul Biswas (54), Tushar Zoaddar (26), and Billal Hossian (52) all live in a joint family like Badr Uddin.

According to them, if the number of family members is large, the cost of tobacco cultivation will be reduced. Because of this, they grow tobacco. Since tobacco cultivation requires a lot of labour, farmers do not have to spend extra money if labour is provided by the family. This pattern suggests that larger families can benefit more from tobacco farming due to reduced labour expenses. Observations also show that from children to the elderly, all family members contribute to the tobacco business, making it more profitable compared to other crops. Thus, the availability of family labour is a crucial factor in motivating farmers to continue tobacco cultivation.

Family-based tobacco farming

Our study show that higher profits or company tactics alone do not entice farmers to grow tobacco. Rather, many farmers are associated with tobacco farming through family lines. Among the informants, 9 informants are involved in tobacco cultivation through family sources. There are many tobacco farmers who are involved in tobacco farming through ancestral lines. In this context, Imroz (35) and Shamim (34) can be highlighted.

"He has been associated with tobacco farming since childhood. His father and uncles have been growing tobacco since childhood. As he has a good idea about tobacco cultivation, he is cultivating tobacco even when he is separated after marriage".

Simmilerly, Shamim used to cultivate tobacco and other crops with his father before marriage. Separated after marriage, he carded British American Tobacco in his own name.

Imroz and Shamim's data shows that there is an ancestral link behind involvement in tobacco farming. Similar results have been observed in a study of tobacco farmers in India, Chikkala, (2014) in their research findings. The researcher pointed out that tobacco farming is not because it is profitable, but because their families have been cultivating it traditionally, they also grow tobacco. As a result, it can be said that ancestral connection plays an important role in tobacco cultivation.

Latent Role of Agriculture Office

The Government of Bangladesh's Tobacco Control Policy (2017), aims to reduce tobacco cultivation by encouraging farmers to switch to alternative crops. However, according to all participants said that the Agriculture Office does not impose any restrictions or discouragement on tobacco cultivation and lacks efforts to train or support them in growing other crops. In contrast, tobacco companies actively provide guidance and assistance throughout the farming process, from seedbed preparation to leaf curing. On the other hand, the Shailkupa Upazila Agriculture Officer said that the office encourages alternative crops and offers training and resources, including seeds and field workers, to support farmers. This conflicting information highlights a significant gap in policy implementation and communication between government offices and farmers. Additionally, while Bangladesh has laws to regulate tobacco products under the World Health Organization Framework Convention on Tobacco Control (FCTC), enforcement is weak. This lack of stringent regulation and support for alternative crops makes it challenging to shift farmers away from tobacco cultivation. Consequently, the government's efforts to comply with FCTC guidelines and reduce tobacco farming remain inadequate. According to the information provided by the Agriculture Officer, since there are laws in Bangladesh, there are no specific policies to control the use of tobacco products. Besides, the implementation of the law is not satisfactory. As a result, we cannot stop farmers from cultivating tobacco. However, we encourage farmers to cultivate alternative tobacco in various ways and discourage tobacco cultivation.

Advantages of obtaining capital from companies

Tobacco companies use capital provisions to attract farmers to tobacco cultivation, as it reduces the costs of fertilizers, pesticides, irrigation, and labor. This strategy is influenced by the profitability aspect of tobacco farming, guaranteed market, and cash from the company. Naher and Chowdhury (2002) stated that apart from the profitability aspect of tobacco farming as influencers of tobacco farming, guaranteed market, cash by the company influence the decision of farmers to grow tobacco. Which is similar to the results obtained in our study. Similarly, Talukder et al., (2020) showed that Short-term financial support from tobacco companies motivates farmers to engage in tobacco farming. Representatives of tobacco companies in the researched area provided information about loans of 35,000 Taka per acre of land for tobacco cultivation. Access to these interest-free loans is one of the reasons why farmers engage in tobacco farming. In this context, In the Focus Group Discussion (FGD), two participants, Alim Zoardar (aged 65) and Babul Biswas (aged 54), can be highlighted.

Alim Zoardar, a tobacco grower under contract to the British American Tobacco Company, mentioned the opportunity of the company as one of the reasons behind getting involved in tobacco farming. He received a loan from the company at the beginning of cultivation for tobacco cultivation, which he uses every year. Babul Biswas, who applied for a bank loan for banana and vegetable cultivation but could not get one, received a cash loan easily by card for tobacco cultivation.

Analyzing the above data, it can be seen that Tobacco companies use loans as an important strategy to involve farmers in tobacco cultivation, as they provide cash at the start of cultivation without additional payments, making it a blessing for farmers.

Price fixing and sales assurance

Tobacco companies employ price fixing and sales assurance as strategic tactics to attract farmers to cultivate tobacco. These practices offer a level of security in the tobacco market that is often perceived as more attractive compared to other agricultural crops. The fixed pricing structure associated with tobacco cultivation is particularly appealing to farmers, as it contrasts with the unstable market prices of alternative crops. Rahman and Islam (2020) highlight that the provision of market security is a

significant factor influencing farmers' decisions to engage in tobacco cultivation.

Our study indicates that, unlike tobacco, the market prices for other crops are not fixed, and sales are often not guaranteed. Fluctuations in market prices frequently result in decreased income for farmers, particularly due to inadequate storage facilities, which can lead to substantial losses. In contrast, the risks associated with tobacco farming are considerably lower, prompting a greater number of farmers to shift their focus to tobacco cultivation.

This perspective was corroborated by participants in Focus Group Discussions (FGDs), including Abu Zoaddar (45), Mintu Mondal (40), and Tushar Zoaddar (32). They emphasized the critical role of guaranteed pricing in motivating farmers to pursue tobacco farming. According to their insights, tobacco cultivation presents an opportunity for substantial income with relatively less labor input. Additionally, tobacco companies often provide a bonus of five Taka per kilogram above the standard market rate, further incentivizing farmers to cultivate tobacco.

With the ongoing commercialization of agriculture, farmers are increasingly inclined to produce crops that are both profitable and marketable. The assurance of knowing the product's price prior to production alleviates concerns, allowing farmers to engage in cultivation with greater confidence. In the context of tobacco, the pre-fixed pricing strategy, combined with sales assurance and the provision of bonuses, positions tobacco as a prioritized choice among farmers. Therefore, the advance pricing strategy utilized by tobacco companies plays a pivotal role in encouraging farmers to engage in tobacco cultivation over other crops.

Influenced by neighbors

Neighborhood influence is one of the factors that encourage farmers to grow tobacco. Among the informants there are 8 farmers who started tobacco cultivation under the supervision of neighbors. Most of the researchers mentioned the benefits of the tobacco company along with the economic benefits as the reasons for involvement in tobacco farming which we know in the previous discussion. The results of my study show that in addition to these factors, neighbors play a leading role in involvement in tobacco farming. In this regard Parvez (28) said,

"No one earns a living by cultivating the same amount of land, while many people cultivate tobacco and construct buildings and houses in a few years, buying land. Seeing this, I also started tobacco farming and found that tobacco farming is more profitable than other crops."

The same view can be found from the respondents given by Noor Islam (38) like Parvez.

"He got involved in tobacco farming through his cousin. At first he did more banana cultivation. Once he lost a lot of money due to the banana trees being broken in a storm. He started tobacco cultivation on the advice of his cousin".

The experiences of Parvez and Noor Islam illustrate the significant influence of neighbours in the decision to engage in tobacco farming. Many economically disadvantaged farmers tend to emulate wealthier farmers who have successfully adopted tobacco cultivation. However, it is essential to recognize that poorer farmers often do not achieve the same levels of profitability as their wealthier counterparts. The latter typically cultivate tobacco on their land, while less affluent farmers may resort to leasing land, which entails higher costs.

Consequently, farmers who cultivate tobacco on leased land experience lower profit margins compared to those farming on their properties. Nevertheless, the observation of profitable outcomes among their neighbours continues to motivate many farmers to pursue tobacco cultivation, even if their returns do not meet expectations.

Lower cost of production of subsequent crops

Tobacco farming uses more fertilizers and pesticides than any other common crop, with eight times more used on tobacco land than for food crops. Excessive chemical fertilizers are used for tobacco production, reducing the natural fertility of the soil. Informants report using various fertilizers and pesticides, including urea, potash, Sulphur, zinc, manganese, and boron, for tobacco cultivation. After tobacco cultivation, the potential of manure remains in the soil, leading to the cultivation of jute or other crops on the land without the need for additional fertilizer. Our 25 informants do not apply any chemical fertilizers to the land for tobacco cultivation, saving the cost of fertilizer. This is due to the commercialization of agriculture, which has led to farmers seeking more profit at less cost. They are now interested in cultivating high-demand crops in the market. Analyzing data from Imran and Badr Uddin Kazi, it is evident that tobacco cultivation requires different types of chemical fertilizers, which remain in the soil for a long time. When other crops are cultivated on the land, there is no need to apply fertilizer to the new land. However, even if temporary benefits are gained, farmers still want to have crops on those lands without applying fertilizers. Tobacco cultivation gradually reduces the fertility of the land (Kutub and Falgunee, 2015; Das et al., 2015). Most informant farmers believe that if some additional fertilizers are applied to the land, they will not have problems due to tobacco cultivation. One respondent name Tushar (32) highlights the use of one type of seed named *"dhunche" (*local Name) to sprinkle on the land after tobacco cultivation, which removes faults in the land when plowing with a harrow and mixing with the soil. Analyzing the information provided by the informants, one thing is clear the farmers who need fertilizer for crop production do not need to spend more on fertilizer for other crops after tobacco, leading them to be interested in copper cultivation.

4. Discussion

Since gaining independence, Bangladesh's agricultural landscape has undergone notable changes. The introduction of modern agricultural machinery, high-yielding seeds, fertilizers, and pesticides has significantly enhanced the country's agricultural productivity (Das et al., 2015). The demand for commercial agriculture is on the rise, and this shift has improved the economic status of many farmers. Numerous studies have highlighted that access to cash and the relative profitability of tobacco compared to other crops

have significantly influenced farmers' decisions to cultivate tobacco as a cash crop (Mahmud, 1999; Sarkar and Haque, 2001).

However, contrasting findings also exist within the literature. Nahar and Chowdhury (2002) argue that the notion of high profits from tobacco farming is merely a myth. Similarly, Karima et al. (2016) point out that small-scale farmers engaged in tobacco farming face increasing losses due to various challenges such as temperature fluctuations, floods, droughts, storms, and tobacco diseases, which are gradually diminishing their production capacity.

Despite these differing perspectives, our study suggests that tobacco remains a profitable crop compared to others, drawing farmers to its cultivation with the hope of increased financial returns. The reasons behind farmers' engagement in tobacco farming are multifaceted. Previous research by Barakat et al. (2012), Hossain and Rahman (2013), Bhavya (2014), Das et al. (2015), and Talukder et al. (2020) has indicated that factors such as poverty alleviation, immediate cash needs, insufficient government support for food grain production, unstable market prices, and financial assistance from tobacco companies—encompassing seeds, fertilizers, pesticides, and other inputs—play crucial roles in this decision-making process.

In addition to these factors, our research has unveiled several new reasons for farmers' involvement in tobacco cultivation. These include reluctance to produce conventional alternative crops, challenges in marketing, the suitability of land for tobacco cultivation, difficulties in obtaining bank loans, peer influence, family traditions, limited support from agricultural offices in promoting alternative crops, and the low costs associated with subsequent crop production.

As tobacco farmers pursue economic development, they often find themselves losing their autonomy, becoming increasingly reliant on tobacco companies. The shift from subsistence farming to demand-driven practices, largely driven by contract farming arrangements, means that tobacco farmers are entangled in the companies' payment systems. If marketing and production challenges for alternative crops can be effectively addressed, there is potential for farmers to transition away from tobacco cultivation toward more sustainable agricultural practices.

Ultimately, tobacco cultivation's profitability relative to other crops is a significant factor in its proliferation in the regions studied. This raises important questions about the long-term sustainability of tobacco farming in Bangladesh and the implications for farmers' livelihoods and agricultural diversity.

5. Conclusion

The study on tobacco cultivation in Jhenaidah district reveals that despite its adverse effects on health, the environment, and food security, tobacco farming persists due to strong socio-economic drivers. The key motivations for farmers include higher profitability compared to traditional crops, stable market conditions, and direct support from tobacco companies, which offer guaranteed pricing and a secure market—advantages often lacking in other forms of agriculture. Additionally, the long-term cultivation of tobacco has led to soil degradation, making it difficult for farmers to transition to alternative crops, further reinforcing their dependence on tobacco farming. The commercialization of agriculture, coupled with the adoption of modern machinery and inputs, has contributed to the shift towards cash crops, with tobacco emerging as a dominant choice. However, this transition has also resulted in environmental degradation, including soil depletion and increased water usage, while the reliance on chemical fertilizers and pesticides exacerbates the issue.

To address these challenges, the study emphasizes the need for strategic interventions to reduce tobacco cultivation. Key recommendations include promoting alternative crops that offer competitive economic returns, improving market access and infrastructure for non-tobacco crops, and establishing cooperatives to ensure fair pricing and reduce post-harvest losses. Additionally, restoring soil health through sustainable practices like crop rotation and organic farming can facilitate the transition to alternative agriculture. Financial support in the form of subsidies and access to credit can further encourage farmers to adopt new farming practices. Enforcing stricter regulations on tobacco farming and its environmental impact, alongside raising awareness about its negative consequences, can help farmers make informed decisions. Educational programs on sustainable farming practices and alternative livelihoods will also play a crucial role in reducing dependency on tobacco and fostering a more sustainable agricultural landscape in the region.

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