

# **Tobacco cultivation and poverty in Bangladesh**

## **Issues and potential future directions**

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The findings, interpretations, and conclusions expressed in this report are entirely those of the authors and should not be attributed in any manner whatsoever to any of the Parties to the WHO Framework Convention for Tobacco Control, the World Health Organization or the Tobacco Free Initiative.

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## Tobacco cultivation and poverty in Bangladesh

### Issues and potential future directions

*“When the imperialists were here, we were forced to grow indigo. Now we are tricked into growing tobacco.”*

– a tobacco farmer

### BACKGROUND

The Government of Bangladesh has taken many strong initiatives to reduce tobacco use in Bangladesh. In 2003, the Government signed the World Health Organization (WHO) Framework Convention on Tobacco Control, followed by ratification of the Convention in 2004. In 2005, the Government passed a comprehensive tobacco control law, and in 2006, passed the rules to accompany the law. The main focus of government policy has been on demand-side measures. Reducing supply will not necessarily lead to a reduction in tobacco use, as tobacco is also imported from other countries. However, the plight of low-income tobacco farmers merits further attention, as do the negative impacts of tobacco growing on farmers’ health and on the fertility of the land.

In Bangladesh overall, from 1990 to 2003, there was a gradual decline in tobacco cultivation (Table 1). Despite the overall decline, there are indications of increases in production in various local areas. For example, in 1995–96, Bandarban, a hilly district in southwest Bangladesh, had about 300 acres of land under tobacco cultivation. By 2002–03, this figure had risen to 1810 acres – an increase of 600%. During the same period, another district of Bangladesh, Kushtia, saw an increase in tobacco acreage from about 13 200 acres to more than 20 000 acres. In the northern district of Rangpur, about 48 000 acres of land is devoted to tobacco farming. The recent spate of growth in the number of tobacco farmers, albeit localized, is indeed a worrisome phenomenon.

**Table 1: Tobacco acreage and its importance in Bangladesh agriculture**

Year	Chittagong Hill Tracts	Kushtia	Rangpur	Bangladesh	Proportion of total agricultural land (acres)
1990–91	1 620	9 950	55 135	93 950	0.47
1995–96	1 080	13 200	64 300	89 525	0.46
2000–01	2 640	17 000	48 200	73 870	0.37
2002–03	2 700	20 425	47 885	76 110	0.38

Source: (1)

Like many other low-income countries, poverty and malnutrition are widespread in Bangladesh. With a population of more than 132 million concentrated on 147 570 square kilometres of land, Bangladesh ranks as one of the most densely populated countries in the world. A persistently high rate of population growth has resulted in severe pressure on the land, thereby creating a situation of food insecurity, which is one of the country's most daunting problems. The deteriorating ratio of land to population makes it difficult to sustain progress in achieving food security.

Domestic food grain production remains susceptible to natural calamities, which perpetuate the threat of major production shortfalls and inadequate food availability. Complete or virtual landlessness of the rural poor means that even those laboring hard to farm derive little benefit from their labor, while wealth continues to grow in the cities. Moreover, increases in cereal production have been almost solely attributable to rice, with the production of most other food items either stagnant or declining. A meagre per capita income of US\$ 440<sup>1</sup> implies that most people spend the bulk of their income on food. Yet more than 40% of the population lives below the food consumption-based poverty line, lacking sufficient resources to afford a diet of 2122 kilocalories (kcal) per person per day, or other basic necessities. Approximately 25 million people, constituting about 20% of the population, are living in extreme poverty (consuming less than 1805 kcal per person per day) (1). Though over the past decade this percentage has been on the decline, absolute numbers of people living in poverty have been increasing. Amidst such a backdrop, it appears wasteful to use precious land (however little in comparison to total cultivated area) to grow tobacco. But the fact remains that tobacco has been grown in Bangladesh for a long time, and a major cause of its proliferation has been the notion of tobacco being a “profitable” crop<sup>2</sup>.

## **KEY ISSUES IN TOBACCO FARMING AND ALTERNATE CROP PRODUCTION**

### **High profitability of tobacco – a myth**

Research for this case study involved travel to key tobacco growing regions of Bangladesh,<sup>3</sup> as well as collection of information in Dhaka from various sources. During the fieldwork, researchers observed the situation of tobacco growing and vegetable growing areas, and spoke to current and former tobacco farmers about their economic situation and their reasons for growing tobacco or switching from tobacco to other crops.

It emerged from these discussions that the principal reason behind farmers choosing to grow tobacco is that it is considered to be more profitable than other crops. This perception of profitability is based on the fact that tobacco has a guaranteed market and that on disposal of the product, the farmer receives the entire money for his produce at

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<sup>1</sup> Per capita income tells nothing about the distribution of wealth, which in Bangladesh, as in many other countries, is highly uneven; figures on the proportion of the population living in poverty are thus more illustrative of the actual situation.

<sup>2</sup> Tobacco *is* of course highly profitable—just not for the majority of farmers.

<sup>3</sup> Areas visited were: Lama Alikadam, Bandarban district; Gangachora, Rangpur district; Pathgram, Lalmonirhat district; Saharbat village, Meherpur district; and Shoyilakupa, Jhenaidah district.

once. Behind these so called “attributes” of tobacco farming lies the patronization by tobacco companies. Initially, these companies try to draw farmers into growing tobacco by attracting them with different facilities and perks. For example, once the farmers become registered with the companies, the companies’ extension workers teach them the entire procedure for yielding a good tobacco harvest. The companies also provide the farmers with free seeds, follow-up extension services and packages that include fertilizers and pesticides. After the harvest and curing of the leaves<sup>1</sup>, the produce is taken to the respective sales centre of each company. Here the price is determined based on the grade of the leaf. A better colour implies a higher grade and a better price.

It is worth mentioning here that the tobacco companies recruit mostly better-off farmers. For the economically weaker ones, a kind of demonstration effect develops, wherein the poorer farmer falls into the trap of tobacco farming by simply watching his neighbour get an instant cash payment the moment his produce is ready for sale. With other competing crops, like vegetables, such advantages do not accrue, as the harvest is ready in batches and there is always uncertainty about finding a market on time.

The key benefits of tobacco growing, meanwhile, accrue mainly to registered farmers only, while unregistered farmers often receive a lower price for their tobacco leaf, depending on registered farmers to buy whatever quantity they may need. While accurate statistics throughout the country are not available, observation and previous research suggest a figure of 10% of tobacco farmers being registered, with unregistered farmers receiving very little economic benefit from cultivating tobacco (2). In one area of Meherpur, fieldwork results find that there are 495 tobacco farmers, of whom 211 are registered—a far higher percentage than the above-noted average. Nevertheless, this figure still represents only 43% of the total tobacco farmers, meaning that the majority receive little benefit from growing tobacco.

In fact, contrary to popular notions about tobacco being a lucrative crop, studies have shown that the profitability of tobacco is overestimated, and that there are various profitable and realistic alternatives to tobacco production (3, 4). Naher and Chowdhury conducted a survey on tobacco cultivation, commissioned by the Bangladeshi Rural Advancement Committee (BRAC), one of the largest nongovernmental (NGO) organizations in Bangladesh. They have shown that the profitability of tobacco emerges from the fact that most farmers economize on the cost of labour required for producing this highly labour-intensive crop by using their own labour and that of their families (especially of women and children). Since this labour is “free”, they do not feel the pinch of the high labour cost. The survey showed that more than 50% of the labour required was provided from the farmer’s household itself. If the imputed value of this “free” labour is taken into account, tobacco loses much of its profit margin, as the high labour cost reduces the net return to labour. The survey also revealed that most farmers are aware of this, saying that tobacco yields little for the farmer who has no household labour (see Box 1). Despite knowing this, farmers are reluctant to shift to other crops, citing a

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<sup>1</sup> Once the leaves are harvested, the curing or the drying process begins. In Bangladesh, flue curing (drying in barns under different temperatures) and sun curing are the most popular. Flue curing is mostly done in Kushtia and the Chittagong Hill Tracts, while in Rangpur sun curing is more popular.

number of reasons, including: difficulty in obtaining seeds to grow vegetables, uncertainty in finding a good market for other products, easy perishability of other crops, difficulty securing loans for non-tobacco crops, poor knowledge of plausible alternatives, and unavailability of free inputs and other facilities for non-tobacco crops.

### **Box 1: The woes of Muyichi and Mopro**

Muyichi is a large tobacco farmer in the Ali Kadam area of the Chittagong Hill Tracts. He is a contract grower for Dhaka Tobacco Company. This season he has spent about 60 000 taka to grow tobacco on about five acres of land. He hopes that if the quality of his produce meets the standard set by the company, it will fetch him about 160 000 taka. He uses his own labour and that of his family to grow the crop. "It involves long hours of back-breaking labour. During the harvesting season, I cannot send my children to school, as I need extra pairs of hands to help me in the field. When the leaves are being dried, I cannot even sleep properly. Sometimes, I have to ask my children to monitor the heat in the barns, irrespective of whether they are sleeping or studying".

Mopro is another tobacco farmer of the same region, contract growing for Nasir Tobacco Company. Since he is unable to use his own family labour, he has to hire labour. This season he has spent about 30 000–40 000 taka for labour alone. He used to grow food crops on his land, which ensured him a daily supply of food for himself and his family. In those days, he rarely had to buy supplies from outside. "Now I have to spend 100–120 taka every day on buying food for my family". He started to grow tobacco, since it brings him a sizeable amount of money at a time, and he can use that money to fix up his house or to buy a cycle, but he has to borrow from neighbours for his family's daily food and other needs.

It is important to note a further cost to the high labour required for tobacco cultivation: by taking children out of school to work in the fields, parents are reducing their children's future opportunities for a better life. That is, skipping school is an often uncounted, but possibly quite significant, further cost to tobacco cultivation.

A final issue is worth mentioning. It is a very different matter to grow crops for one's own use and local sale, and to grow crops for a multinational corporation. These issues go beyond profitability to include the ability to make independent decisions about the use of one's land, including when, whether and how much of a crop to grow.<sup>1</sup> Although beyond the scope of this case study, international evidence<sup>2</sup> suggests that the spread of transnational companies has hardly resulted in improvements in the living standards of those working for them.

### **Loans for tobacco cultivation: debt bondage**

The entire process of tobacco cultivation is input intensive, which makes it an expensive crop to grow. The bulk of the cost is on account of seed and seedbed preparation,

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<sup>1</sup> This issue is treated in some detail by Schlosser (5). Although he writes specifically about US producers of potatoes and beef for the fast food industry, the issues are relevant to tobacco farmers internationally.

<sup>2</sup> See, for instance, Farmer (6) and Campaign for Tobacco-Free Kids (7).

fertilizers and curing (3). Farmers complained that the fertilizer requirements for growing tobacco increase each year, leading to steadily declining profitability. The high cost of cultivating this crop implies that farmers often have to access loans or credit from external sources. The BRAC survey revealed that most tobacco growers who seek external credit are marginal farmers with less than 0.5 acres of land. These poor farmers borrow at the commencement of the tobacco growing season and repay once the produce has been sold. The share of proceeds that they are left with barely lasts them until the next tobacco season, which forces them to borrow again. They thus fall into a vicious cycle of indebtedness from which they find it difficult to extricate themselves.

Loans for growing tobacco are provided primarily by tobacco companies. The tobacco companies have different loan strategies for different areas. In greater Kushtia, they normally provide in-kind assistance through the provision of seeds, fertilizers, pesticides and extension services. Seeds are given out free of cost, while the cost of other inputs is recovered during the procurement of the harvest. However, in the Chittagong Hill Tracts, the tobacco companies provide cash. This region is relatively less developed, and the people here are very poor. For these people, getting hard cash in hand is a boon. The tobacco companies are well aware of this and try to exploit the situation as much possible. In 2005, these companies gave a loan of 4000 taka per acre. The year after, the amount was increased by 25% to 5000 taka per acre. Once a farmer accepts a loan from any company, he is bound to sell his produce to that company only. When the harvest is ready for sale, the loan is deducted and the balance is given to the farmer.

For those who do not grow tobacco for any particular company, the principal source of credit is the village moneylender, or *mahajan*, who gives loans at exorbitant rates of interest, often exceeding 100%. Though loans are available at much lower rates from banks, the high transaction costs—including repeated trips to far-off branches and complicated paperwork—dissuade farmers from taking bank loans.

### ***Availability of agricultural loans***

Agricultural loans are available from different commercial banks, however, Bangladesh Krishi Bank (BKB) is the only specialized national-level public sector bank in Bangladesh dealing with agriculture-related credit activities. BKB provides two types of loans: crop loans (for growing crops such as potato, radish, rice, ginger and garlic) and project-based loans (for projects such as poultry farms, feed mills and fish hatcheries). No government-related loans are available for tobacco cultivation.

BKB provides concessional loans at an interest rate of 2% for those crops that are currently being imported, in order to meet domestic demand. This includes maize, onions, garlic, ginger and rice. For other crops, loans are provided at an interest rate of 8%, while private commercial banks provide loans at 12%. Loan amounts range from 2000 taka to a few hundred thousand. The loan can be repaid in installments within a repayment period ranging from 1–2 years.

### ***Complicated loan securing procedures: a force attracting farmers to tobacco***

As mentioned above, complicated bureaucratic procedures involved in securing agricultural loans discourage farmers from shifting out of tobacco cultivation. Getting a crop loan means repeated trips to bank branches, which are often in distant locales. This becomes a drain on the resources of low-income farmers (see Box 2). Also, loan application procedures involve filling out lengthy forms, which is daunting for illiterate or poorly-educated farmers. Tobacco companies, on the other hand, provide easy loans for growing tobacco, which act as a major attraction for farmers to grow the crop.

### **Box 2: How will I feed my family?**

Kuddus Ali, 31, is a tobacco farmer from the Lama region in the Chittagong Hill Tracts. He has been growing tobacco for the past three years. Originally, he wanted to grow vegetables on his land. Since he did not have the initial capital to start with, he applied for a loan at a bank. After traveling several times to the bank branch, which is situated 10 miles from his home, he abandoned the hope of getting a loan. “I have to spend 20 taka on transport every time I visit the bank. If I have to make 8–10 trips to get my loan sanctioned, how will I feed my family?”<sup>1</sup>

Continual inflation creates another problem with crop loans. Loan amounts are predetermined at particular rates, but by the time the loan is actually disbursed, input prices often go up substantially, making the loan inadequate. As a tobacco farmer remarked, “When I apply for a loan to grow potatoes, the price of fertilizers is 200 taka per bag. But by the time I get the loan, the fertilizer price has become 800 taka per bag. What will I do with this paltry sum? Should I just buy one bag of fertilizer when I need four?”

The loan procedures of banks require mortgage of the land against which the loan is sanctioned. The marginal farmer who has no land to mortgage is automatically disqualified for the loan. During our group discussions, farmers also complained about receiving loans for less than the amount applied for. Often, corrupt practices of bank officials and other influential local people adversely affect the prospects of deserving farmers getting loans. For those with political connections, securing a loan is certain and easy, even if the farmer is unworthy and a bad credit risk. Bribing bank officials to get a loan is also a common occurrence.

### **Marketing of tobacco: a relatively safer bet than other crops**

As with most other agricultural commodities, the market for tobacco is imperfect. Only contract growers have an assured market, since they sell directly to the companies. However, if the leaf grade does not meet the company’s standards, the produce is either not accepted or the farmer is given a very low price for it. Further, the companies do not

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<sup>1</sup> A creative solution to this particular problem would be to provide loans to farmers to buy bicycles, which could assist them both in reaching banks and in reaching markets to sell their produce. On a bicycle, one can carry 3–4 times what a person can carry on their head and at easily triple the speed. A one-time investment in a bicycle also means long-term savings in transport costs, a further significant help to low-income farmers (8).

accept more than the stipulated amount of leaf. These contract growers, then, have to sell any extra leaf in the open market or to middlemen. The middlemen have an understanding with the tobacco companies and, thus, the former resells the produce to the latter at a higher price.

The non-contract growers, who form the bulk of tobacco farmers, sell their produce to the middlemen, or *beparis*. The *beparis* themselves come to the farmers, which saves the farmers the hassle of transporting their leaves. *Beparis* are well informed about prevailing market conditions. They operate like a cartel, sharing among themselves all market-related information. They also have affiliations with different trade unions, and are thus a strong group with an established right to the final word on the price. The farmers, on the other hand, are inadequately informed, weak and unorganized. While prices are fixed in the open market, farmers do not receive the full price, as they often sell their produce to *beparis* under stressful circumstances. Their indebtedness forces them to dispose of their crop as fast as possible. The middlemen are perfectly aware of this and exploit the farmers to the fullest. Often the *beparis* collude to offer a uniformly low price to the farmers. The *beparis* also take a commission from the farmers, which ranges from a minimum fee per unit of crop sold to a fee as high as 10% of the produce. Sometimes, if the leaves are small or not of a desired colour, the price offered can drop by 50%.

On the whole, tobacco farmers do not have much of a problem in disposing of their harvest. Whatever be the supply, there seems to be a market for it. Though the farmers have to compromise on the price, they look at the brighter side, which is collecting the entire crop profit at one time. The possibility of the leaves perishing fast is also low. Thus, in the case that any farmer is unable to sell a harvest initially, there is some time to seek out a buyer.

In the case of food crops such as vegetables and fruits, the possibility of their rotting quickly or getting infested with insects is very high. The farmers themselves have to search for buyers once the harvest is ready, and the possibility of not being able to find one on time, who will give reasonable price, is high. Often the farmers themselves have to carry their produce as head loads<sup>1</sup> to different places in search of a reasonable buyer. To save the cost of a ticket, they even risk their lives and travel to distant places on the roofs of buses or trains with big baskets of fruits and vegetables. Unlike tobacco, there are no preset marketing facilities for food crops. If the farmer is fortunate, he succeeds in making a deal with a *bepari* to sell his produce at a reasonable price.

The absence in tobacco growing regions of sufficient cold storage where farmers can store their food crops until an appropriate buyer is found further compounds their problems. For instance, in Comilla district<sup>2</sup>, which is quite well developed compared to the Chittagong Hill Tracts, there are a large number of cold storage facilities, and essentially no tobacco is grown there. In tobacco growing regions, there are also not enough wholesale markets or marketing groups. Related to the storage problem, and

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<sup>1</sup> As noted above, simply having a bicycle would greatly alleviate this problem.

<sup>2</sup> This district has almost 100 percent literacy. Though less than one-third the size of Chittagong Hill Tracts, it has more than five times the number of secondary schools.

coupled with institutional rigidities such as collusion among traders, is the issue of price fluctuations. The price of food crops is very volatile. It often happens that when the seeds of a food crop are sown, the market price is high, but once the harvest is ready for sale, the prices have come crashing down. In the words of a crestfallen farmer, “When I began growing potatoes this season, the price was 30 taka per kg, but now when my potatoes are off the field, the price has come down to 5 taka per kg.”

Another reason cited by farmers for not wanting to shift out of tobacco is the excess supply argument, that is, when everybody in the area is growing similar crops such as vegetables, the prices tend to be depressed. With tobacco, the situation is different, since markets almost always exist. Even though tobacco growers are at the mercy of the buyers who establish the grade of the leaf, which in turn determines the price, they do not mind so much. As one of the farmers put it, “getting something is better than seeing your entire harvest lie and rot”. In sum, the uncertainty surrounding the marketing of food crops is a major reason for farmers not to switch out of tobacco growing.

### **Promoting non-tobacco crops: the dormant role of agricultural extension**

Agricultural extension services are very strong for tobacco. These services are provided by the field-level staff of different tobacco companies. From the preparation of the seed bed to the final stage of curing the leaves, these extension workers demonstrate and teach tobacco farmers all the steps involved in each process. They also provide tips to farmers as to how to make the leaves of a higher grade and superior quality. The non-contract growers of tobacco, in turn, learn these steps from the contract growers. This free learning is very beneficial to them and is one of the driving forces to grow tobacco. Detailed knowledge of tobacco growing gives them a sense of confidence, and they feel that nothing can go wrong with the harvest. Such extension services are rare for other crops.

The Department of Agricultural Extension (DAE) of the Government of Bangladesh is the only public agency responsible for rendering extension services to farmers. DAE does not provide any technical assistance to tobacco farmers. DAE has been in Bengal since the British rule, and its offices are spread all over Bangladesh. The basic mode of operation of DAE has been the “extension training and visit” (T&V) system, with changes made in the policy from time to time.<sup>1</sup> In the past, the extension workers were very active and paid regular visits to the field to address the problems of the farmers. Seeds at a concessional rate also used to be available at the DAE branch offices.

The introduction of the New Agriculture Extension Policy in 1996 by the Ministry of Agriculture saw a major shift in the public extension service, as it required DAE to change from a centralized extension service provider, based out of Dhaka, to a decentralized pluralistic extension system, in which extension workers are located

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<sup>1</sup> For the purposes of extension work, 800–900 farm families (depending on the intensity of area activities) are treated as a block, which is the lowest unit for field extension work. The model of message delivery was a two-step one, wherein each block supervisor would directly communicate with some chosen contact farmers to deliver technology packages and the latter, in turn, would deliver the information to the non-contact farmers.

throughout the country and report to local supervisors. But a change in extension policy has brought about little change in the quality of service delivery. The farmers who participated in this study lamented that extension workers rarely if ever visit the fields these days; rather, they themselves have to go to the agriculture office in the event of a problem. The number of extension workers is also far below the requirement.

Recently, NGOs have also embarked on extension activities, marking an important move towards cost-sharing in extension service delivery. Some of the prominent NGOs involved in this work include BRAC, Grameen Bank, Proshika, Swanirvar Bangladesh, Rangpur Dinajpur Rural Service and Unnayan Bikalper Nitinirdharoni Gobeshona (UBINIG), among others. UBINIG, for instance, has launched a *naya krishi andolan*, which literally translates as “movement towards new agriculture”, through which they are propagating organic food cultivation. BRAC has many field workers who go from field to field regularly, advising farmers on different crop issues. However, a clear demarcation of the public and private roles in extension service delivery is lacking, which often gives rise to conflict between the principal extension service provider (DAE) and the private partners. The absence of functional and active participation of local government is also a significant problem in the country’s agriculture extension system. Overall, there remains much room for improvement in providing quality services to farmers to help them grow food crops that would benefit both themselves and the nation.

### **Tobacco cultivation: too harsh on health and the environment**

As discussed above, farmers are often overly optimistic in their estimations of the profitability of growing tobacco. In addition, there are other costs borne directly by farmers, or by the government, from the cultivation (and use) of tobacco. For instance, WHO (9) has conducted research in Bangladesh (revised in 2006) which finds that the cost of tobacco usage to the country outweighs its benefit by 26.1 billion taka per annum (equivalent to US\$ 442 million). In addition to the health costs borne by government and tobacco users are the health costs of tobacco cultivation and use, as borne by individual families. Since far more tobacco is imported than exported, the government also loses precious foreign exchange from tobacco use in Bangladesh (10).

Though most people are aware of the hazards of smoking, far fewer are informed about the hazards of tobacco farming, both in terms of health of the farmer and of the environment. In fact, it has been documented that the seriously damaging health and environmental impacts caused by tobacco farming parallel those caused each time a cigarette is lit (7). Health threats include the large amount of pesticides used on the crop, as well as illnesses relating to the handling of raw tobacco leaves. Continuous exposure to the smell of nicotine emanating from the fields leads to dizziness, nausea and vomiting. Dermal absorption of nicotine while harvesting the wet green leaves leads to an illness called “green tobacco sickness” or GTS.<sup>1</sup>

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<sup>1</sup> The symptoms of GTS include nausea, dizziness, vomiting, headaches, weakness, abdominal cramps and difficulty in breathing, as well as fluctuations in blood pressure and heart rate.

Due to the large quantities of water required to cultivate tobacco, fields (particularly in hilly areas) are mostly located near water bodies. The chemical residue from the large amounts of pesticides used on the tobacco plant flows back to the water bodies when the fields are irrigated. Needless to mention, the contamination spreads when this water is used for domestic purposes. Not only pesticides, but huge amounts of fertilizer are also required during the cultivation of tobacco. Since tobacco rapidly depletes the soil of its nutrients, the soil has to be replenished over time using expensive chemical fertilizers. A survey revealed that, on average, 300 kg or more of chemical fertilizers such as urea, triple superphosphate and zinc are used for cultivating an acre of tobacco (3). In addition to fertilizer costs, the harm tobacco cultivation does to soil fertility is a further cost of tobacco cultivation.

For flue-cured tobacco, large rooms or barns are constructed and these are kept at a constant temperature for about 72 hours, until the leaves acquire the characteristic tobacco taste, aroma and colour. In Kushtia and Chittagong Hill Tracts, where flue-cured tobacco is more popular, wood is primarily used for curing. About six tonnes of wood is required to cure the tobacco grown on just one acre of land. Huge areas of forests in the Chittagong Hill Tract region have disappeared over the past few years, and a substantial portion has been tobacco-related deforestation (see Table 2). In the hilly region, hills are also being cut to create flat land for growing tobacco. Financially, about 30% of the total cost of tobacco production is for curing the leaves.

**Table 2: Rates of deforestation caused by tobacco**

Country	Total annual wood consumption (thousand tonnes)	Total annual deforestation (thousand hectares)	Percentage of total tobacco-related deforestation
South Korea	272.2	13.0	45.0
Uruguay	7.6	0.4	40.6
Bangladesh	128.0	9.0	30.6

Source: (11)

## POTENTIAL FUTURE DIRECTIONS

### Reforming and strengthening the formal agricultural loan system

As mentioned above, loans for tobacco growing are easily available from tobacco companies. However, loan facilities for growing other crops are poorly developed. For generations, farmers in this country, especially small and marginal ones, have suffered from a shortage of capital to invest in agricultural production. Informal moneylenders have a long history of exploiting poor farmers. The operational inefficiency of specialized banks like the BKB leads to a high accumulation of overdue loans. The cooperative credit system has also proved inefficient and ineffective in satisfying the credit needs of Bangladeshi farmers. A special agricultural credit programme launched in

1977 through the nationalized commercial banks helped to increase the supply of credit, but their performance was not satisfactory due to inadequate field supervision, complicated loan-granting procedures, corruption and poor recovery.

NGOs follow a simple procedure for loan disbursement with a low real cost of credit and a high loan recovery rate. Though the quantum of loan disbursement by NGOs is much higher than that of the formal banks, only a small part of NGO credit is allocated for crop production. Thus, the small and marginal farmers are bypassed by both the formal banks and the NGOs, and consequently they have no recourse but to fall victim to local moneylenders.

New policy measures are needed to streamline the credit system for farmers, especially for small and marginal ones. To ensure easy and timely access to credit by small and marginal farmers at low cost, all commercial banks (public and private) should be advised to establish special service windows with customer-service and loan-disbursement targets in their semi-urban and rural branches for handling farmers' credit. The efforts of National Credit and Commerce Bank (NCC Bank) in this regard are worth mentioning<sup>1</sup>. NCC Bank, in collaboration with Doyal Agro Industrial Complex, has introduced a maize production package for the farmers of Patgram *upazila*<sup>2</sup> under Lalmonirhat district, which has a large number of tobacco farmers. And the bank has opened a branch in this area from which farmers can directly access loans. NCC Bank officials determine the price of the produce based on the market price, and the farmers can market their output to the Doyal Agro Industrial Complex. So far about 4000 farmers have become motivated to grow maize. It merits mention here that large quantities of maize are imported every year to meet the local demand. The maize produced here is of a better quality than what is imported, and can save large amounts in foreign exchange.

Farmers who have switched from tobacco to vegetables emphasize the many benefits of the switch. In field visits made to prepare this case study, farmers in various districts explained that for the first two or three years of growing tobacco, the quality of the leaf is high and they thus have the chance to earn a decent income. However, after three years, the quality of the leaf, and thus the profitability of growing, declines significantly. As a result of growing tobacco, they explained, there is a root that appears in the soil that prevents other crops from growing well. They are thus afraid to grow tobacco for more than a couple of years. Even after five years of growing vegetables rather than tobacco, they are still finding the harmful root from tobacco.

Many farmers also explained that a great advantage to growing vegetables is that they can always harvest some vegetables to sell in the market when they suddenly need money, whereas with tobacco, they must wait for the full harvest to come in. While some tobacco farmers appreciate the sudden input of a sizeable quantity of money, on further questioning as to how they survive from day to day, they explain that they must take out loans to meet their basic needs until the harvest. Vegetable farmers do not have this

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<sup>1</sup> It is very unusual for a private bank to operate in an agricultural area. In most of the country, only government banks have branches or operations in rural areas.

<sup>2</sup> *Upazila* is the Bengali term for sub-district.

problem. In addition, the large amount of money coming in at once from tobacco can be, in a sense, a mirage, since the farmers have taken loans for the various inputs, which must be repaid out of the harvest. Finally, vegetable farmers are always ensured of a supply of vegetables to feed their own family.

Farmers described a further benefit to growing vegetables. The wastage from growing vegetables can be used as fertilizer, thereby further enriching the fertility of the land at no cost. In addition, some of the waste can be fed to cattle. Neither of these is the case with tobacco. Thus, while the waste from rice harvest is fed to cows by those who grow vegetables, it is used as a fuel to cure tobacco by tobacco farmers. This helps explain the surprisingly large, healthy cows seen only in primarily vegetable growing areas. Also, there is far less labor involved in growing vegetables than tobacco.

Nevertheless, crop agriculture remains a risky enterprise for farmers. The present situation calls for an in-depth review of the issue in light of past experience and information, and formulation of a viable solution.

Recently the government has taken a laudable decision to launch small capital banks to extend microcredit facilities in villages across the country under the Microcredit Regulatory Authority Act. The government should ensure that the service of this facility is available to small and marginal farmers for crop production purposes.

### **Curtailing tobacco cultivation for improved nutritional status**

Tobacco is a powerful economic temptation to farmers, who have previously grown food crops such as rice, wheat, maize, pulses, oilseeds, fruits and vegetables, on a subsistence basis. In fact, tobacco cultivation and malnutrition seem to go together (see Box 3). Not only does land usage under tobacco directly compete with other crops such as fruits and vegetables, but the tedious farming process leaves no time for growing other food crops. During the harvesting season, when every possible pair of hands available in the household is on the field, there is no time even to cook (see Box 3). In addition, the returns left for the household after paying off all loans is often too meager to afford a balanced diet. During the curing process, when families run out of wood, they sometimes even cut down large fruit-bearing trees in their yard. Tobacco cultivation is spreading so rapidly in some areas that farmers have abandoned growing vegetables in their backyard and have begun to grow tobacco instead.

### **Box 3: “I have no time or energy to cook”**

Sakina, 30, is the mother of three school-going children. For the past five years, they have been growing tobacco. Previously they grew *boro* rice, cauliflower, tomato, brinjal and other seasonal vegetables. Though they were growing food for their own consumption, they would normally be left with some harvest which would be sold in the market. But they can no longer afford such a diverse diet. They do not earn enough money from tobacco to buy sufficient food to feed their family. During the harvesting season, Sakina, her husband and their three children are all working in the field. They do not have the money to hire labour, so during this period their children skip school. Sakina works hard in the field all day long. “I have no time or energy to cook. Last night we had some left-over boiled rice with salt, water and red chilies”.

Malnutrition is a serious problem in Bangladesh. The latest Demographic and Health Survey 2004 (12) reveals that 43% of children below five years of age are stunted, while about 48% are underweight. The survey further reveals that 37% of rural women have a low body mass index, while the figure for urban women is 25%. Moreover, the normal diet of an average Bangladeshi is heavily dominated by rice, with more than 70% of calories coming from rice alone. The consumption of other nutrients such as fats, protein, vitamins and minerals is inadequate. Women and children are especially vulnerable due to their greater nutritional requirements. This dietary imbalance reflects insufficient domestic production of non-cereal foods (vegetables, pulses, oilseeds, fruits, meat, milk and eggs), low incomes, food preferences and lack of nutrition education. Moreover, the general health environment and caring practices compound the problem of inadequate food intake, further contributing to poor nutritional outcomes. Research has also shown that expenditure on tobacco products among the poor may further contribute to malnutrition by diverting money from food (13).

Tobacco does not occupy an important position in the agricultural economy of Bangladesh, accounting for only about 0.4% of total agricultural land. However, this still amounts to more than 75 000 acres of land under tobacco cultivation. If this land could be brought under food crops, a dent could be made in the food security and nutrition situation in the country. Potential alternative crops include soybean, tomato, okra, pumpkin, maize, brinjal, and green chilies. The planting of fruit orchards and floriculture are also possible in areas where tobacco is currently grown (14).

Shifting out of tobacco into other crops requires a broad diversification programme with the help of the government and NGOs. The problems of some vegetable farmers in obtaining seeds suggest another important area of intervention for agricultural extension<sup>1</sup>. In fact, there have been instances of successful transition from tobacco farming to other

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<sup>1</sup> It is worth noting that an increasing reliance on hybrid seed varieties has made it difficult for farmers at times to access seeds, if they either do not have sufficient funds to purchase them or if supplies are lacking. The former practice of collecting seeds from one’s previous harvest for use could well improve the lot of many farmers and reduce their dependence on different corporations, but would require a rethinking of the common practice of promoting hybrid varieties.

crops such as maize, pumpkin and other vegetables. A particularly spectacular success has occurred in Saharbati village.

Tobacco was widely grown in Saharbati village, Meherpur district from 1972 to 1985. In 1983, an artist from the area, after finishing his Masters in Fine Arts from Dhaka University, returned to his village and decided to experiment with growing watermelons. He encouraged the local people not to grow tobacco. People considered him crazy and said that he knew nothing about agriculture. But gradually, as people saw that he was profiting from his experiments, they began imitating him. As a result of his efforts over the years at motivating tobacco farmers to switch to food crops, and the witnessing of the profitability of such a move, tobacco is no longer grown in the area. At present, people are growing cauliflower, cabbage, leafy green vegetables, wheat, corn, sugarcane, mustard seed, potatoes, garlic, onion, bitter gourd and various other local vegetables.

In terms of marketing of the produce, people initially sold their vegetables to brokers, who took them to big cities such as Dhaka and Chittagong. The price was so low that they decided to take the vegetables to market themselves, but again, sometimes the price was so low that they simply dumped them on the roadside and returned to the city, losing money on all their inputs and transport costs. Now they use mobile phones to check on the price of vegetables in markets in different cities, and sell when and where it is profitable.

Observation during fieldwork revealed some key issues in Saharbati. There was a vegetable garden in front of nearly every house, which is now unusual in Bangladesh. There was abundant livestock, such as chickens, ducks, goats and cows, all well fed; in fact, the cows were the healthiest, biggest cows the researchers had ever seen in the country. Most people are literate and many have cultural interests, such as music, art and drama. They claim that there is almost no violence in their area due to the high employment rate, while people still enjoy the free time to be involved in cultural activities. The villagers are proud of the fact that they are materially far wealthier than their neighbors in a tobacco growing area. One man from Saharbati told the researchers, “I married a woman from the neighboring tobacco growing village, but they can’t even feed me properly when I go for a visit, they are so poor.”

Large landowners who rent out their land told the researchers that landless farmers renting land were able to start saving money when they switched from tobacco to vegetables. Farmers switching to vegetables saved money on labor and fertilizer and made more money due to the duration of the harvest, which is about six months for tobacco, but only three months or less for vegetables (2–3 weeks for some leafy vegetables) (see Box 4). Finally, it is possible to multicrop vegetables, growing various ones simultaneously on the same plot. As a result, said the landowners, many formerly poor farmers now have savings and access at any time to 20 000–30 000 taka. While in all areas visited, tobacco farmers rely on loans to grow their crops (suggesting that they are failing to grow wealthy), vegetable farmers did not take loans, explaining that they only need a small quantity of seeds or fertilizers, which they can easily borrow from a neighbor.

Visits to the other areas confirmed similar conditions, but without the advantages of Saharwati, due to problems in marketing their crops. Many tobacco farmers continued growing tobacco for years, since they had heard that their land was no longer good for growing anything else, now that they had used it to grow tobacco. When former tobacco farmers did try growing vegetables, they were happy with the smaller amount of labour required. They also found that vegetables grew well and were surprised at the fertility of their soil. While the first experimenters in alternate crops in any area benefited, their profits declined when other farmers, following their lead, introduced competition, thus leading to a decrease in prices for their produce. Meanwhile, those who realized the problems of growing tobacco for years, in terms of the harm to the soil, were eager to switch to another crop to save the fertility of their soil. That is, the key issue in many areas is not ignorance or lack of desire to switch, but simply problems with the marketing of vegetables.

#### **Box 4: Eggplants prove more profitable than tobacco**

Abdul Salam is a landless farmer who used to grow tobacco, but has since switched to growing vegetables. He rents 40 decimals (there are 100 decimals to the acre) of land, which he uses to grow eggplant. Each season, he spends 12,000 taka (for land rent, seeds, fertilizer, etc.) and earns 1500 taka each week from selling eggplants, or 6,000 taka per month. There are ten members of his family, and he is the only income earner, but is able to provide for the entire family off of the income he earns growing eggplants. When he grew tobacco, he had to take out many loans, his family had to provide an enormous amount of labour, and yet they always faced economic difficulties. Another advantage of growing eggplant is that he can sell them whenever he needs money, and the money comes in frequently during the season, as the eggplants mature. With tobacco, he would have to wait until the end of the season to sell all the tobacco at once. For instance, if he suddenly needs 1000 taka, he can simply go out to his field and pick enough eggplant to sell in the market to raise the money, whereas with tobacco, he would have to take out a loan with interest in order to meet a sudden financial need. Finally, he is able to feed his family some of the eggplants that he does not take to market, ensuring that they consume some vegetables.

Some of the projects run by DAE and targeted specifically at improving nutritional status include agricultural diversification and intensification, development of the existing Horticulture Center at Chittagong Hill Tracts and Cox's Bazar Regions, the Northwest Crop Diversification Project, the Integrated Horticulture and Nutrition Development Project, the Crop Diversification Programme and the Integrated Maize Promotion Project.

Meanwhile during the mid-1980s, homestead gardening was also brought under the purview of DAE. The twin reasons for this were to encourage women to contribute to income generation and to increase food intake through an increase in purchasing power. This project, if implemented effectively, could go a long way towards creating awareness among people to cultivate food rather than tobacco. In general, if a suitable environment is provided, many farmers will be motivated to grow indigenous food crops rather than the back-breaking alien tobacco.

## **Raising awareness about and supporting the cultivation of non-tobacco crops**

The general belief that tobacco is a profitable crop is the principal reason for farmers taking to it. Once they begin, the hardship still does not convince farmers to switch to other crops, due to both a lack of awareness and knowledge of cultivating other crops and to the inability to access loans and other services, including assistance in selling the crop. Through the aggressive activities of the tobacco companies, a farmer is “coaxed” to tobacco farming simply by watching his neighbour “graduate out of poverty” by cultivating this crop. Such a demonstration effect could be achieved for other crops as well. One possibility would be to grow food crops in school gardens and open spaces inside mosques and other public places, which could serve as demonstration plots. The output could be distributed among school children, or even to the destitute, as part of a supplementary feeding programme, thus combining programmes to encourage vegetable cultivation with alleviation of the most extreme poverty.

When considering such an integrated approach to improve livelihood as well as decrease cultivation of tobacco, a further ecosanitation component of teaching farmers to use composting toilets, and thus increase their access to low-cost, safe, non-chemical fertilizers, could be considered (15). More access to fertilizer means higher yields and less expense on fertilizer, which itself is often produced through polluting chemical processes. Many existing institutions and organizations could be mobilized to promote such integrated programmes, thereby simultaneously addressing multiple sources of poverty and ill health, and ensuring that investments in helping poor farmers switch out of tobacco have multiple benefits to the farmers, their families and the community.

## **CONCLUSION AND RECOMMENDATIONS**

Though, presently, tobacco vis-à-vis other food and cash crops does not occupy an important position in the Bangladesh economy, its proliferation in specific districts is assuming alarming proportions. Important factors encouraging the cultivation of tobacco include company patronization, good extension services for growing the crop, easy availability of loans for tobacco, lack of information and services for growing other crops and lack of knowledge about the dangerous impact of tobacco growing on human health.

In order to support a shift towards more growing of food and less growing of tobacco, not only the government, but also NGOs, private organizations and civil society have an important role to play.

The Tobacco Control Act, passed by the Government of Bangladesh in 2005, specifically mentions discouraging the farming of tobacco and providing loans for promoting alternative crops. If farmers are shown alternatives to tobacco production and given technical assistance in making and sustaining the transition, many would likely wish to quit growing tobacco. This was in fact the sentiment expressed by many tobacco farmers during focus group discussions. Loan-taking procedures for alternate crops must be simplified and quick disbursement of loans ensured.

Farmers should have easy access to quality inputs, particularly fertilizer and seeds. Projects should teach people how to make their own fertilizer, using animal and vegetable waste, and also by safely combining sanitation with agriculture through ecosanitation systems. Ecosanitation would reduce fertilizer costs, increase access to fertilizer among poor farmers who otherwise cannot afford it (thereby increasing their crop yields) and reduce diseases caused by poor sanitation. Helping farmers return to traditional systems of harvesting seeds would also save costs, prevent problems caused by lack of access to seeds and further reduce dependence of farmers on commercial enterprises; as such, a switch away from dependence on hybrid seeds is essential.

Further, farmers require assistance with adequate and timely marketing facilities, such as ample facilities for storage of crops, particularly by expanding cold storage facilities. Farmers need easy and cheap modes of transporting goods and accessing markets, particularly in mountainous and more remote areas; encouragement to use and loans to purchase bicycles and rickshaw vans could help in this regard while avoiding reliance on expensive and polluting fuel. Mechanisms to ensure a fair price to farmers (by helping them bypass middlemen or *beparis*) would also improve the ability of farmers to make a living from growing vegetables.

Demonstration plots for food crops and non-tobacco cash crops could go a long way towards encouraging farmers to stop growing tobacco. Such plots could be strategically located in school gardens, beside public places such as mosques, community centres or hospitals. The output from these plots could be distributed among school children or to the destitute, which could also help in alleviating the food insecurity of these people.

In sum, the key issues to be addressed are:

- improved loan services for low-income farmers;
- technical assistance in switching from tobacco to food cultivation;
- assistance in learning to make fertilizer and harvest seeds;
- provision of marketing facilities and expanded cold storage;
- loans to increase access to low-cost, fuel-free transport;
- demonstration plots for technical assistance and to supplement diets of the needy.

While the list may seem long, the anticipated benefits would be well worth it. An increase in the cultivation of food crops is vital to an improvement in the nutritional and health status of our population. Further, the lessons learned through improved agricultural extension and other services as outlined above would have benefits far beyond current tobacco growing areas. Beginning with addressing tobacco cultivation, an overhaul of agricultural practices could lead to the sort of rural reform that would drastically improve the lives of many of the rural poor, thereby enriching not just them and their families, but the entire nation.

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