



The role of tobacco growing in rural livelihoods

Rethinking the debate around tobacco supply reduction



Welcome

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DD International has been commissioned by British American Tobacco to carry out this study in order to contribute to the discussion raised by the World Health Organisation's (WHO) Framework Convention on Tobacco Control (FCTC) Study Group (now Working Group) tasked with developing Guidelines to support countries to interpret their obligations under Articles 17 and 18 of the FCTC in relation to economically sustainable alternatives to tobacco growing.

A report of this Working Group alleges that tobacco growing leads to certain social effects, environmental impacts and occupational health and safety (OHS) risks. The aims of our study are (i) to provide an independent assessment of the literature about the impacts of tobacco growing and (ii) to contribute to the evidence base on the impact of tobacco cultivation on farmer livelihoods through case study research in three countries.

DD International (known previously as NR International) is an independent international development consultancy company dedicated to improving the wellbeing of resource-poor communities in the developing world. The company has amassed experience in over 80 countries, primarily in Africa, South Asia and Latin America, working in partnership with poor communities, local, national and international organisations, donors, policy makers and service providers from the private, government and voluntary sectors. Its mission is to be an intelligent provider of poverty focused sustainable development.

The authors have approached this work with an interest in poverty, the role of markets in supporting livelihoods and sustainable agriculture. It is hoped that this report adds valuable insight and evidence for policy makers, supporting appropriate policy decisions that are well informed and consider the needs of the poor.



**MORE DETAILS ABOUT THE UNDERLYING
RESEARCH, INCLUDING THE CASE STUDIES, AT**
www.ddinternational.org.uk

Executive summary

The FCTC Working Group on economically sustainable alternatives to tobacco growing (in relation to Articles 17 and 18 of the FCTC) has claimed that tobacco cultivation has negative environmental and social effects. An independent study, funded by British American Tobacco, to critically review the evidence base for these claims has been undertaken and this report summarises its findings.

The first part of the study reviewed over 300 published sources on the subject and concluded that the existing research base was both limited and lacked contextual understanding. No clear evidence to support a causal link between tobacco cultivation and poverty or that tobacco growing necessarily leads to adverse labour or employment outcomes could be found. The literature on environmental risks was equally problematic although the evidence on deforestation is more convincing but site specific.

The second part of the study consisted of an empirical investigation in three contrasting tobacco growing countries – Bangladesh, Brazil and Uganda – investigating whether tobacco cultivation poses a greater hazard to the welfare of poor people in comparison with the cultivation of other available crop alternatives. The study, a small (about 40 case households per country) purposively selected sample, reports farmers' views on the role, costs and benefits of tobacco cultivation, comparing tobacco growers with non-growers. As case studies, the evidence cannot be generalised but can be used to challenge generalisations. The case studies are specific to the location in which they were undertaken and mostly the operations of one tobacco company (British American Tobacco) working with specific tobacco varieties. The conclusions cannot be applied to tobacco cultivation in general in any one country or the market structures surrounding other varieties of tobacco, which may be subject to different demands, rules and practices.

The case studies show that the claims for a direct causal link between tobacco cultivation and poverty do not hold true as a generalisation. Tobacco is grown as part of a cropping system and contributes to a diverse income portfolio; it is also seen to be an important and reliable income source that enhances food security rather than reducing it and has contributed to increasing farmers' welfare. It is recognised that growing tobacco is demanding and carries risks; the risk environment is probably greater in Uganda than in Bangladesh or Brazil; the willingness of farmers to take on the risk of cultivation is specific to households but the ability of households to move in and out of tobacco cultivation does not support a picture of entrapment. There is no evidence to suggest that tobacco cultivation poses a greater hazard to the welfare of poor farmers in comparison with other available crop alternatives.

The evidence also suggests that where vertically integrated markets support production and sale of tobacco, such as the farmer contract system provided by British American Tobacco and some other large tobacco companies, this acts to reduce the risks associated with tobacco cultivation. This market support, combined with the income that tobacco cultivation can generate for farmers, sets the standards to which other 'alternative crops' must aspire if they are to provide 'alternative livelihoods' to tobacco cultivation.

Context plays a key role in defining levels of risk at global, national and district levels and 'one size fits all' policies should be avoided.



Introduction

Background

In 2008 the Framework Convention on Tobacco Control Study Group (now Working Group)¹ on economically sustainable alternatives to tobacco growing published a report² in relation to Articles 17 and 18 of the Convention. The report makes a number of claims that tobacco cultivation has negative environmental and social effects and that a strategy of both demand and supply reduction for tobacco is required.

The claims are categorised in terms of:

Social effects – exacerbation of poverty by tobacco farming; bonded labour and child labour; food security and malnutrition

Environmental impacts – deforestation; water pollution; soil degradation; biodiversity losses

Occupational health and safety risks – green tobacco sickness; pesticide intoxication; respiratory disorders; dermatological disorders; cancer³

In the words of the report tobacco cultivation leads to:

“exacerbation of poverty ... in particular two issues related to social disruption: bonded labour and child labour ... contractual arrangements trap farmers in a vicious cycle of debt, leaving them with few opportunities and little time for healthy practices” (para 16, page 4)

It summarises as follows:

“Tobacco growing entails a number of irreversible costs to farmers, which not only seriously damage their living standards but also erode their long-term prospects. Health risks, working conditions, contractual arrangements, the use of children in tobacco growing, and the environmental practices of tobacco growing have negative impacts on human capital and land, the two crucial assets in rural livelihoods.” (para 18, page 4)

The conclusion that the report draws is that supply reduction must take place through the development of ‘substitute crops’ for tobacco and ‘alternative livelihoods’.

THE FRAMEWORK CONVENTION ON TOBACCO CONTROL (FCTC)

The FCTC is the first international treaty negotiated under the auspices of the World Health Organisation (WHO). It was unanimously adopted by all 192 WHO member countries at the 56th World Health Assembly on 21 May 2003 and entered into force on 27 February 2005.

The FCTC is an example of international law, that is, an agreement between governments which is binding only on those governments who have ratified it (Parties). The obligations on Parties under this treaty almost invariably do not apply within a country automatically – governments need to pass national legislation to implement their FCTC obligations into their own national law.

As of June 2011 there were 174 Parties to the FCTC.

FCTC: Articles 17 and 18 and Guiding Principle Article 4 (6)

Article 17 “Provision of support for economically viable alternative activities” states:

“Parties shall, in cooperation with each other and with competent international and regional intergovernmental organisations, promote, as appropriate, economically viable alternatives for tobacco workers, growers and, as the case may be, individual sellers.”

Article 18: Protection of the environment and the health of persons:

“In carrying out their obligations under this Convention, the Parties agree to have due regard to the protection of the environment and the health of persons in relation to the environment in respect of tobacco cultivation and manufacture within their respective territories.”

Guiding Principles: Article 4 (6)

“The importance of technical and financial assistance to aid the economic transition of tobacco growers and workers whose livelihoods are seriously affected as a consequence of tobacco control programmes in developing country Parties as well as Parties with economies in transition should be recognised and addressed in the context of nationally developed strategies for sustainable development.”

1 Referred to throughout this report as the FCTC Working Group.

2 FCTC/COP/3/11, 4 September 2008, referred to throughout this report as the FCTC Working Group Report.

3 This research report does not address the allegation of cancer being one of the ‘occupational risks related to tobacco growing’ as this is outside the remit of this report and DD International’s specialist expertise.

Rationale for the research

This report is a summary of research undertaken to add to the debate on tobacco supply reduction strategies. It had two main components. The first, a review of the literature to build up a body of knowledge about the existing evidence in relation to the claims made in the FCTC Working Group Report and about the tobacco industry as a whole; the second, case study research, to start to build an independent body of evidence about the role of tobacco growing on rural livelihoods, including alternative crops. The design of the case studies was defined by the findings of the literature review and has a greater focus on social impacts.

The literature review identified that much of the research behind claims made about links between tobacco cultivation and social impacts is methodologically weak. Poverty is poorly described, the specifics of context are not considered, and the counterfactual (comparison of poverty and labour practices with non-tobacco growers for example) are not investigated.

The terms 'alternative crops' and 'alternative livelihoods' are often treated as synonymous. They are not, and if alternative crops to tobacco are to be considered there is a need to take on a wider livelihood perspective that includes not only the income provision from a crop but also the institutional environment (eg market support) around the gaining of that income. Tobacco cultivation takes place in many contexts where both the capacity of the state may be limited and markets are poorly regulated, requiring the poor to use informal means to gain welfare, and the extent to which market support is provided and market risk reduced is a critical criterion to 'alternative livelihoods'. Assessment of alternative livelihoods based simply on income potential is not enough.

The case study research aimed to address these issues with the research question framed as: **does tobacco cultivation pose a greater hazard to the welfare of poor farmers than other available crop alternatives?**



Research methods

The key lines of enquiry pursued in seeking to answer this question include assessment of who cultivates tobacco, the role of tobacco in household income and how tobacco is regarded as an income source in relation to other potential sources.

To address the issues of context specificity three contrasting case study countries were selected:

Brazil – a middle income country rising to be a global economic player.

Bangladesh – with a relatively strong role played by the state but with deep levels of poverty.

Uganda – with ongoing conflict, where the state is often absent from rural areas and deep levels of poverty and high levels of child labour are evident.

Where possible, poorer tobacco districts in each country were selected, but with a focus only on those districts in which British American Tobacco has a large number of contract farmers. Households from each of these regions were purposively sampled to provide a selection of contrasting households⁴. It should be noted that British American Tobacco was found to be operating in better off parts of the case study countries. There is a need for further research on the conditions of cultivation in poorer areas.

The case studies are specific to three contrasting countries; they are also specific to the location in which they were undertaken and the operations of mostly one tobacco company (British American Tobacco) working with specific tobacco varieties. As such, they can provide no comment on tobacco cultivation in general in any one country or the market structures surrounding other varieties of tobacco cultivated in each country, which may be subject to different demands, rules and practices.

As a modest qualitative study, limited in scope and scale, it cannot establish the 'truth' behind the effects of tobacco cultivation but as selected case studies the evidence can robustly question the extent to which the claims made in the FCTC Working Group Report can be seen as universally applicable.

⁴ For more information on the research methodology please see the additional material on the DD International website www.ddinternational.org.uk

Before presenting our findings we would like to provide some conceptual clarity around risks, vulnerability and hazards.

The existence of risk should not be confused with its realisation

The concept of 'risk' implies that there is a chance of something with potentially negative effects taking place. The extent to which one can attach a probabilistic assessment of that risk is variable and in the case of environmental risks it is difficult. The fact that there is a risk does not mean the risk is realised, since mitigation procedures can reduce or even remove the chance of occurrence. There are many sources of risk and those that poor households face are multiple. There are both covariant risks (a risk event that may affect a large number of people or assets at the same time) and idiosyncratic risks (household-specific risks such as a death or illness). The risk of price shifts in the market affects different people in different ways according to their income portfolios and assets. Risk thus becomes more of a relative than an absolute measure and has to be seen in relation to all the other risks that a household might be exposed to and the capacity of a particular household to manage that risk.

Symptoms of poverty should not be confused with causes

The Working Group Report talks of the social effects of tobacco growing in terms of exacerbation of poverty and social disruption as if there is a direct and deterministic causal relation between cultivation and social effects. This is not true as the case study evidence discussed below shows: many of the tobacco cultivators

report that they have prospered through tobacco cultivation. Tobacco cultivation, according to the findings of this research, does not necessarily lead to poverty effects.

It is more useful to talk of the hazards rather than risks that might be associated with the cultivation of tobacco. These hazards are linked with the acknowledged relatively high costs of production, labour demands, price risk and so forth, all of which are features that the tobacco crop shares with major cash crops being traded in liberalised markets. While all cultivators are exposed to these hazards, whether or not these hazards lead to poverty effects is dependent on two factors:

- The first is the pre-existing vulnerability (to specific factors eg price falls) and capacity of poor farmers to handle the exposure to the hazard. That vulnerability is driven by deeper factors associated with the causation of poverty and not with the tobacco crop per se. The various statistics on poverty dimensions (income levels, child labour, etc) indicate that existing levels of poverty are high in many tobacco-cultivating countries. Accordingly, any claims about the poverty effects of tobacco cultivation have to clearly distinguish between whether the poverty of tobacco cultivating farmers reflects a causal role of growing tobacco or if it is simply that tobacco cultivation is more a symptom of pre-existing poverty, or even a farmer response to move out of poverty.
- The second variable to consider is the extent to which the hazards around tobacco cultivation, management requirements and price can be mitigated by production systems and market support.



Literature review

Introduction

The literature review used a wide range of published web-based sources and examined over 300 different reports. The papers were analysed using a common approach for assessing quality with judgements being made on the degree to which a peer review process was applied and which would scrutinise theory, methods, analysis and interpretation. Given the time and resources available, we do not claim that the review examined every single piece of research relating to these issues. However, we do believe that our review covers the main body of readily available evidence that has been used to justify the principal arguments advanced in relation to the social effects, environmental impacts and occupational health and safety (OHS) risks arising from tobacco cultivation.

The existing research base is limited and lacks context

The percentage of the literature reviewed that shows any peer review or quality assurance process is rather limited, with over half having no evident peer review process. This restricts the evidence base that policy makers can work with. There is also a strong division between the two interest groups to the debate – those for and against tobacco – and the middle ground is rather empty, in part because there has been limited independently funded research in this area, as acknowledged by the World Health Organisation⁵. Accordingly, a comment that appears repeatedly in these reviews is that there is insufficient evidence or the evidence is too weak to draw firm conclusions.

One factor that appears poorly addressed is the significance of context in assessing whether or not the risks associated with tobacco cultivation are realised. As the review on environmental risks notes, the specificity of management system and the nature of the production system – the role of tobacco in the cropping system, for example – may have a significant effect in mitigating risks. Indeed, it is difficult not to feel at times in reading the literature that the meaning of the concept of ‘risk’ has been lost. Risk is the chance of something happening and not, as some of the literature seems to imply, the inevitability that it will or does happen.

But context also matters in terms of comparing the regulatory regimes across and within countries. Markets and the State behave in different ways and tobacco markets are subject to national conditions and not separate from them. The nature and meaning of poverty – its dimensions, levels and causes – vary from country to country. Thus, even if an evidence-based argument could be built that tobacco cultivation can be associated with income poverty in one context, that does not mean this is necessarily the case elsewhere. Similarly, assessing the extent of child labour has to take account of the underlying drivers of the existence of child labour and why, for example, intrinsic levels of child labour are higher in Malawi than they are in Brazil, and what this might mean for building evidence about tobacco cultivation and child labour use in any one country.





Summary findings of the literature review

Tobacco cultivation and social effects

No clear evidence to support a causal link between tobacco cultivation and poverty

The limits of the methodological approach of most studies, combined with small sample populations, means that there is no robust evidence to support a causal relation between **tobacco cultivation and poverty**. There is some evidence, although much of it is anecdotal, to suggest that there can be a correlation between engagement in tobacco cultivation and poverty but it is equally plausible to interpret it as that some people who are poor are also growing tobacco. In both India and Bangladesh the evidence is contradictory and often does not clearly distinguish between tobacco grown under contract to companies and tobacco grown independently, or the different tobacco markets. Some of the evidence from India and Bangladesh points to the profitability of the crop, while other literature suggests a lack of profitability. Evidence on farmer debt brought about through tobacco cultivation is anecdotal.

In Malawi, where there is a more robust data set drawn from a poverty assessment national panel, data indicates that it is wealthier farmers with larger land holdings who grow tobacco. There is also an estate sector which plays a significant role in the cash crop economy. More location-specific surveys indicate that small farmers have moved in and out of tobacco cultivation for reasons of food security and for the risks associated with the marketing structure for tobacco. However, the way the tobacco market works in Malawi

has been described as ‘fraught with monopolistic and rent seeking practices and conflicts of interest’⁶. In our view, this does not reflect the behaviour of all international tobacco companies.

The literature from other countries also provides a mixed picture. Evidence from Mozambique, for example, points to positive income effects from growing tobacco while that from Kenya is more negative in its assessment.

Minimal evidence of tobacco cultivation contributing to food insecurity

The literature on the links between **tobacco cultivation and food security** is very limited and comes mainly from Kenya. The hypothesised causal link appears to be based on tobacco displacing food crops and/or absorbing labour to the detriment of labour being allocated to food crop cultivation. However, there is no data on farm crop composition or household income portfolios to support these claimed effects. The one piece of evidence that does raise questions about links between tobacco cultivation and poverty comes from the national poverty survey in Malawi. It finds that in the central districts, with lower poverty levels and higher levels of tobacco cultivation, there are higher levels of child malnutrition even though there is higher food or calorific availability in comparison with other regions. This paradox, as they put it, of rising income and food availability not being matched with falling levels of malnutrition, is not understood but it should be pointed out that there is national-level data from India that points to exactly the same effects of rising income and levels of malnutrition not shifting. The role of tobacco cultivation in causing this effect in Malawi is unclear.

⁶ Government of Malawi and World Bank, 2006.

Child labour is no more prevalent in tobacco cultivation than other crops

Tobacco is a labour intensive crop and is grown predominantly by smallholders. A major review of **child labour in tobacco production** in Africa⁷ concluded that there was no evidence to say that child labour was any higher or lower than the use of child labour in other sectors. There is strong evidence of the widespread use of child labour in agriculture throughout the world. But there is little evidence that supports tobacco cultivation being a causative factor. There is also considerable evidence of labour being used in many aspects of agriculture under poor conditions and unfair conditions of employment both in western and southern Africa. The key issue particularly in low-income countries is that much of the labour market is informal and outside the regulation of the state, and this applies particularly within agriculture.

Tobacco cultivation and environmental risks

Deforestation impacts are site specific but can be mitigated

The literature on **deforestation** indicates that this may be the single most negative impact of tobacco cultivation on the environment. From a review of the evidence it is concluded that the claim by the FCTC Working Group that deforestation from tobacco production does have a significant negative effect is possibly accurate but may be site specific. There is evidence in certain locations within countries that this is an issue but on a global scale this cannot be verified. A number of well researched reviews on the topic indicate the globally significant pattern of estimated tobacco cultivation related environmental damage due to deforestation ought to be included in international research agendas on global environmental change. This would help with empirical validation. Future research would need to be country and site specific to accommodate the variability in the rate of deforestation as a result of tobacco production and the mitigating measures taken to counter the detrimental effects on the environment.

Levels of water pollution and soil degradation are highly dependent on context and husbandry practices

The review of the evidence on **water pollution** highlights the importance of differentiating between pesticide and fertiliser use on the tobacco crop as there are differing risks associated with the use of each on water pollution. The evidence associated with the alleged detrimental effect of the application of pesticides seems to suggest

that in some tobacco producing countries/areas (for example, Malawi and Zimbabwe) the use of pesticides is high in comparison to other crops grown in the same agro-ecological areas. Without proper crop husbandry management practices and integrated pest management this could pollute the water, especially if production areas are close to water systems. However, other literature would suggest the opposite – that pesticides used on tobacco are no more of a pollutant than those used on other crops, such as cotton.

As regards the use of fertiliser on tobacco, the nutrient application rate overall is no higher than for a number of other field crops when nutrient usage is compared globally⁸. Critically, for the use of agrochemicals on tobacco, it is vital to take into consideration the place that the crop has within the overall cropping system in a particular agro-ecological area, where for the most part the tobacco crop occupies only a very small proportion of the production system. Based on our review of the literature, the available information offers little, if any, compelling evidence that tobacco cultivation is a major contributor to water pollution and more comprehensive empirical data is required to resolve this environmental impact issue.

Soil degradation is a generic issue that affects the agricultural sector generally

The amount of quality literature on **soil degradation** was found to be limited. From an evaluation of what was available it can be concluded that: (a) soil degradation is an issue facing the agricultural sector in general and is not specific to tobacco cultivation, as land is required to be made more productive to meet increasing demands for agricultural commodities; (b) sustainable management of soils is a key building block to the establishment of effective models of sustainable agriculture – again a generic issue; and (c) a number of the larger tobacco companies with leaf operations work with their contracted farmers and third party leaf suppliers aiming to ensure that appropriate practices are used in soil management. However, for the industry as a whole it is difficult to get a true picture of the scale and scope of these mitigating measures. Again, more empirical, independent research needs to be undertaken to provide definitive information on this issue.

There is a shortage of robust research that focuses on biodiversity losses specifically from tobacco cultivation. Evidence on **biodiversity losses** in agriculture is quite well documented, and suggests that current production practices used in tobacco cultivation and post harvest operations pose a risk to biodiversity, comparable to other intensively grown agricultural crops. The main risks to biodiversity stem from direct and indirect loss or degradation of natural habitats due to deforestation and the degradation of associated aquatic habitats. However, quantifying these risks is currently difficult as little research providing evidence-based proof has been conducted that links tobacco cultivation specifically with biodiversity change. This is difficult as tobacco typically is just one part of a multiple cropping system.

The environmental risks associated with tobacco cultivation are no greater than those posed by other commercial agricultural commodities. The review of the evidence comparing environmental risks of tobacco cultivation with other international agricultural commodities suggests that as far as environmental risk is concerned, tobacco growing would seem to pose no greater threat than any other commodity, especially when compared to crops like cotton and sugar cane, which have high requirements for agrochemicals and where land management practices can have significant negative



⁷ Eldring et al (2000).

⁸ Source: FAO.

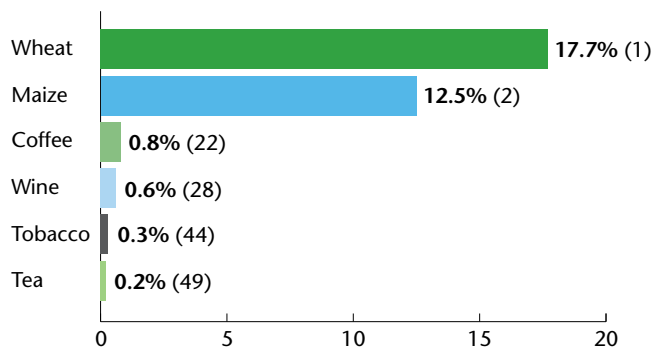


impacts on ecosystems. Where tobacco production differs from the rest is its requirement, in at least some regions/countries, for fuel wood for curing and timber for barn construction. Unless this is managed properly it could impact negatively on the environment through deforestation. Apart from this, one of the most striking facts identified is the small area of land that is globally planted to tobacco as demonstrated in the chart below.

Global crop production

% of total global crop production land dedicated to different crops.

(Numbers in brackets refer to global ranking for area to production.)



Source: FAO Statistics 2009 (based on 154 crops; excludes land put to livestock).

Tobacco cultivation and occupational health and safety risks

Evidence suggests that use of pesticides on tobacco is no greater, more toxic, or more persistent than other crops

The use of pesticides often present potential hazards to health whatever the crop. While most of these hazards are not unique to tobacco growing, tobacco cultivation has often been referred to as heavily pesticide-dependent. Particular concerns expressed about tobacco cultivation include: the nature of chemicals used (toxicity, persistence etc); their dose and frequency of application; mode and target sites of application; human exposure both during and after application; and, in particular, the vulnerability of groups of agricultural workers involved in tobacco cultivation and harvesting. While it is recognised that the regulation of pesticide use in middle- and low-income countries can be poor, no comprehensive evidence has been found indicating that the use of pesticides on tobacco is

greater, more toxic or persistent than in other comparable agricultural commodities such as cotton or vegetables (in particular, brassicas).

Green tobacco sickness (GTS) is an occupational health risk among tobacco farmers and those who have direct skin contact with tobacco plants that are wet with rain or morning dew (such as during hand harvesting). The cause of GTS is nicotine poisoning resulting from dermal absorption of dissolved nicotine from the surface of wet tobacco.

There is convincing evidence that green tobacco sickness (GTS) is a distinct hazard associated with tobacco cultivation and that children may be particularly susceptible to it. There are credible reports of GTS being experienced by tobacco workers. However, there is no credible evidence to indicate that GTS can have long-term effects and appropriate farming practices, including the use of protective clothing and avoiding contact with the tobacco plant when it is wet, can effectively manage the risk.

There are alleged dermatological risks associated with tobacco cultivation but they are not widely reported or significant in their effects. Literature on dermatoses related to handling tobacco suggests that cases are infrequent. The majority of risks relate to handling dry tobacco products, especially in cigar manufacture, which could probably easily be avoided by use of gloves or other protective clothing. Cases associated with growing the crop are particularly rare and at least some of these relate to pesticide use.

We conclude that there is probably not a significant dermatological concern when growing tobacco, especially when compared with other crops that are more frequently implicated as causes of phytodermatitis such as hot peppers, citrus and cashew.

Respiratory problems have rarely been reported from growing tobacco. However, reductions in lung function have been detected from curing, storage and production operations. It is not clear if these reports relate to hypersensitivity pneumonitis, which has been termed 'tobacco worker's lung' and has been attributed to inhalation of dust fragments or spores of storage fungi.

Plant-borne allergenic respiratory conditions often known as 'farmer's lung' are common during processing of a wide range of crops or agricultural products, including grains, soybeans, coffee and cotton, and can be elicited both by plant products themselves, or from contaminating micro-organisms or their products.

Bangladesh

KEY DATA

Human Development Index ⁹	0.469
Life expectancy at birth	66.9
Gross National Income (GNI) per capita US\$ (PPP 2008) PPP = Purchasing Power Parity	\$1,587
% population below Income Poverty Line (PPP \$1.25 a day)	49.6%
Employed people living on less than \$1.25 a day (% of total employment)	56.9%
% child labour (all 5–14 year olds)	13%
1,000 tonnes (million kg) of tobacco produced	149
% of country tobacco production grown for British American Tobacco	39%
% of world tobacco production	0.56%
% of British American Tobacco's global tobacco procurement	5%

9 A composite index measuring average achievement in three basic dimensions of human development – a long and healthy life, knowledge and a decent standard of living. Source: 1–6 UNDP 2010; 7–10 British American Tobacco 2009.



Forty two farmers from Kushtia district, in western Bangladesh, were interviewed across a range of farm sizes and farmer types, including tobacco growers, non-tobacco growers and those who had recently started or stopped growing tobacco. Kushtia district was selected due to its importance for British American Tobacco as a growing area. Daulatpur and Mirpur upazilas (sub-districts) were selected as they have the lowest rates of literacy in Kushtia. As a small case study these findings do not claim to describe tobacco farming in Bangladesh but help to draw a picture of the role tobacco farming does and can play in farmer livelihoods in that country.

Key findings

The evidence from this sample of tobacco and non-tobacco growing farmers, located in one of the more affluent areas of Bangladesh where British American Tobacco has a large number of contracted farmers, suggests a positive role for tobacco in household income and employment.

- Tobacco tends to be grown by farmers with larger farm sizes
- The proportion of land dedicated to tobacco cultivation is the same across smaller and larger farms
- Tobacco cultivation constitutes only one component of a diverse income portfolio but is often the primary and most reliable source of income
- There is a high dependence on tobacco crop income
- Overall welfare of tobacco farmers is improving
- Tobacco crop incomes can improve household food security
- There is no evidence that tobacco cultivation leads to adverse labour or employment outcomes
- There are no reported incidences of ill health as a direct result of tobacco cultivation
- There is little to no deforestation as a result of tobacco cultivation
- The majority of farmers reported no impact on soil fertility and erosion, and the potential for water pollution from tobacco cultivation is limited with few farmers having water courses running through their farms

Context and sample

In Bangladesh, tobacco cultivation occupies only 0.40%¹⁰ of the total cultivable land. It is grown in specific locations, in contrast to other crops such as paddy that are cultivated throughout the country. Farmers in the northern district of greater Rangpur have grown air cured (native dark air cured and Burley) tobaccos for centuries in the sandy alluvial belt of Bangladesh. Flue cured Virginia (FCV) tobacco cultivation was started by British American Tobacco Bangladesh in Kushtia (south west) and Chittagong (south east) in the early 1970s. Air cured (Burley) cultivation also started in Manikgong (central Bangladesh) in the last decade to help meet export demand. British American Tobacco's Kushtia Leaf Division consists of four Leaf Regions which cover six administrative districts. Tobacco cultivation in Bangladesh is a fully supervised crop through a contract growing system. Registered farmers get quality seeds, inputs at cost price and technical advice to help them improve yield and quality of tobacco from the tobacco company with which they work. They then sell their produce to their respective tobacco companies.

Given British American Tobacco's interest primarily in FCV and the concentration of FCV in Kushtia district, this district was selected for study. The focus of the research was the two sub-districts of Daulatpur and Mirpur, which have intensive tobacco cultivation. These sub-districts have some of the lowest literacy rates in Kushtia. Table B1 provides summary details on the 42 households that were interviewed. These were purposively selected to capture different levels of engagement with tobacco production.

10 FAOSTAT 2010, <http://faostat.fao.org/>.

CASE STUDY | BANGLADESH CONTINUED

Table B1: Sample frame for Bangladesh growers by grower status and farm size

Category	Grower status	Farm size (acres)					Total respondents
		0	>=0.6 <1.8	>=1.8 <3.7	>=3.7 <6.1	>=6.1	
1	British American Tobacco grower for >5 years		1	7	4	4	16
2	British American Tobacco grower for <2 years				1		1
3	Ex-British American Tobacco grower for <2 years			5	2		7
4	Non-British American Tobacco tobacco grower			4	3		7
5	Non-tobacco grower for >5 years		1	4	1	1	7
6	Tobacco labourer	4					4
	Total	4	2	20	11	5	42



A total of 24 households reported that they grew tobacco, 17 of whom were under contract with British American Tobacco. Seven households said that they had grown tobacco for British American Tobacco previously but now did not, and seven said that they had not grown tobacco. Four of the households stated that they worked as labourers in tobacco, one of whom also sharecropped land. The findings presented represent the views of these farmers and not those of DD International or British American Tobacco.

Findings – the role of tobacco in the sample household economies

Tobacco tends to be grown by farmers with larger farm sizes

Table B1 shows that it is the middle and larger land owners in the sample who grow tobacco and the number of tobacco growers falls as farm size declines. Ranking tobacco growing status by decreasing farm size confirms this (table B2). In the top quartile of farm size 90% of the quartile grew tobacco and these comprised 37.5% of all tobacco growers interviewed. In the bottom quartile just under 20% of the quartile grew tobacco. Thus, tobacco cultivation is not concentrated among those with least land who are likely to be the poorest.

Table B2: Distribution of tobacco growers by farm size (including farm labourers)

Quartiles of sample	Farm size range (acres)	No of tobacco growers	No of non-tobacco growers	No of non-tobacco growers who recently stopped
Top 25%	4–10 acres	9	1	0
Next 25%	3–4 acres	7	4	3
Next 25%	2–3 acres	6	5	3
Bottom 25%	0–2 acres	2	8	1

CASE STUDY | BANGLADESH CONTINUED

Table B3: Distribution of area allocated to tobacco by farm size

Quartiles of sample	Farm size range (acres)	No of tobacco growers	Proportion of farm to tobacco during growing season	Median value
Top 25%	4–10 acres	9	25–50%	40%
Next 25%	3–4 acres	7	30–50%	33%
Next 25%	2–3 acres	6	25–50%	33%
Bottom 25%	0–2 acres	2	40–50%	NA

The proportion of land dedicated to tobacco growing is the same across smaller and larger farms

Identifying the significance that tobacco cultivation makes to the economy of these tobacco growing households can be examined in two ways. First, in terms of the proportion of land that is allocated to tobacco cultivation and, second, in terms of the contribution that tobacco crop income makes to overall household income. The data suggests that the proportion of land allocated to tobacco cultivation remains the same across farm size with the actual amount of land allocated to tobacco cultivation falling as farm sizes decrease. In simple terms, based on this sample, the intensity of tobacco cultivation is not greater among farmers with less land.

Tobacco growing constitutes only one component of a diverse income portfolio

What the crop data also makes clear is that the crop portfolio of farmers is diverse and tobacco farmers can equally be described as paddy or wheat farmers who also grow tobacco. All farmers reported growing rice or wheat; for 20 of the 24 tobacco growing households (83%) the area of paddy and wheat was equivalent to or greater than the area allocated to tobacco growing. In addition to growing tobacco 14 (58%) of the tobacco growers also grew jute as a cash crop.

Although tobacco growing is only a part of a broad income portfolio it is often the primary source of income

Of the tobacco growers interviewed, tobacco cultivation is their primary source of income and only one tobacco grower placed tobacco crop income as the second most important source of income. However, for over half of the tobacco growers, revenue from other cash crops (primarily jute but also rice) ranked as the second most important source of income, with livestock and non-farm sources also contributing. For the non-tobacco growers, income from other crops (jute, rice, garlic and bananas for example) was the primary source of income, although three of these non-growers (21%) derived their primary income source from non-farm enterprises. For the four landless labourers, three derived most of their income from farm labour including tobacco cultivation and a fourth's major source of income was from a tea shop.

There is a high dependence on tobacco crop income

The contribution of tobacco growing income to household income also varies. For the tobacco growers, a quarter (six from all farm sizes) reported that it contributed 80–100% of their income, indicating a high dependence on tobacco growing income. Another nine reported that it was a major income source (60–80%) but that a significant part of their income came from other sources. A further quarter reported that it contributed between 40 and 60% of their income, suggesting the existence of other major sources of income to these households, while three households indicated that it actually provided less than 40% of their income. For three of the four labourers, tobacco growing provided 40–80% of household income.

Tobacco growing is the most reliable source of income

The reliability and the long-term trend of tobacco growing's contribution to household income are also important. All 24 tobacco growers reported that tobacco growing was their most reliable income source and for 23 of the 24 (96%), income from tobacco cultivation had either increased or significantly increased over time. This may explain why three households reported it as their most important income source even though it did not provide the majority of their income. The farm labourers also said tobacco growing was their most important income source. Of the non-tobacco growers six stated rice as their most reliable income (43%) and one jute. A further five (36% of non-tobacco growers) reported a business or other employment as the most reliable source.

Tobacco growing incomes improve household food security

The positive view about the contribution of tobacco cultivation to household income is also reflected in the views of tobacco growers about the relation between tobacco cultivation and household food security. For the tobacco growers, 19 of them are food secure from on-farm production and the remaining five produce between 9 and 12 months of their basic food supplies. Twenty two of these households (92%) also reported that, in their view, tobacco cultivation either improved or significantly improved food security with only two considering that it made no difference. The tobacco labourers made it very clear that working on tobacco cultivation had improved their position, high levels of income having helped to increase household food security.

Overall welfare of tobacco farmers is improving

The effects of tobacco cultivation on household income and food security need to be placed within the context of how households perceive the overall changes in their welfare in comparison with the past and what changes they anticipate for the future. Of the total of 42 households interviewed, 40 expected their position in life to remain the same or improve in the next five years. Thirty eight households stated that their welfare had improved compared to five years ago. The perceptions of negative changes in their circumstances are entirely confined to grower Category 3 – those who left cultivation of tobacco largely because they could not secure a contract to grow it. The reasons that they gave are cited in Box B1, which compares the responses with others from the same sample group (those who have left tobacco cultivation) who considered themselves to be better off in comparison with the past.

Box B1: reasons given by those who stopped growing tobacco for changes in their circumstances

Sample group – those who have stopped growing tobacco

Reasons people gave for being worse off in comparison with the past

"The reasons for changes in my household circumstances are producing other cash crops."

"When I produced tobacco my family condition was good but after stopping the tobacco cultivation my family condition getting worse."

"Farming other crops."

"Cannot cultivate tobacco."

Reasons people gave for being better off in comparison with the past

"My income has risen by farming. I have a job which also helped me to change my situation."

"Because of increase in income, reduction in expense."

"Farming of other cash crops are the reason for change of household circumstances."

All those who reported never having cultivated tobacco (Category 5) stated that they were better off than before and anticipated improving their circumstances. Of the six that provided explanations for this, three made reference to the importance of employment or business income, one was leasing out land to a tenant to cultivate tobacco, and two reported improved income from other cash crops.

The largely positive view about the benefits of tobacco cultivation was reflected in the fact that no tobacco grower reported any disadvantages in growing the crop but they all listed advantages, mostly related to financial profitability, timely payment, good market price and access to inputs (seed, credit, fertiliser etc) and technical support.

There is no evidence that tobacco growing leads to adverse labour or employment outcomes

Households were asked to identify their use of labour by crop and in particular the use of child labour. The responses on the use and source of labour do not support a picture of adverse employment outcomes as a result of growing tobacco. Both households that cultivate tobacco and non-tobacco growers all use hired labour and as the earlier quote noted, tobacco labourers see working in tobacco growing as a positive source of income. One household reported children working¹¹ on their tobacco crop, although this child also worked on other agricultural crops and was reported to be at school.

There are no reported incidences of ill health as a direct result of tobacco production

No reports of any illnesses occurring as a result of tobacco production were recorded, including green tobacco sickness, and respiratory and dermatological disorders. Only two of the farmers interviewed knew what green tobacco sickness is. Fourteen out of 16 British American Tobacco contracted farmers interviewed stated that they wore protective clothing provided by British American Tobacco.

There is little to no deforestation as a result of tobacco production

None of the tobacco farmers interviewed used wood for curing tobacco and only four out of 24 tobacco farms used any wood to build curing barns.

The majority of farmers reported no impact on soil fertility and erosion, and the potential for water pollution from tobacco production is limited with few farmers having water courses running through their farms

While no scientific study on soil quality or water pollution around tobacco farms has been undertaken as part of this research farmers were asked for their perceptions of these issues. Thirty three of the 38 farmers that answered the question felt that tobacco did not cause a loss of soil fertility; of the five that did, three were non-tobacco farmers, one a farmer that had recently stopped growing tobacco, and one a tobacco grower for another company (not British American Tobacco). The majority of farmers interviewed do not have a water course running through their farm, which limits the direct impact on water pollution.

In summary, the evidence from this sample of tobacco growing farmers, in one of the better-off areas of Bangladesh, suggests a positive role for tobacco growing in household income and employment with minimal environmental or occupational health side effects.

¹¹ There is a distinction to be made between Children Working and Child Labour. According to the International Labour Organisation (ILO) "Children's or adolescents' participation in work that does not affect their health and personal development or interfere with their schooling, is generally regarded as being something positive... The term 'child labour' is often defined as work that deprives children of their childhood, their potential and their dignity, and that is harmful to physical and mental development." This research does not aim to distinguish between the two in our case studies; we simply indicate reported labour use.

Case studies

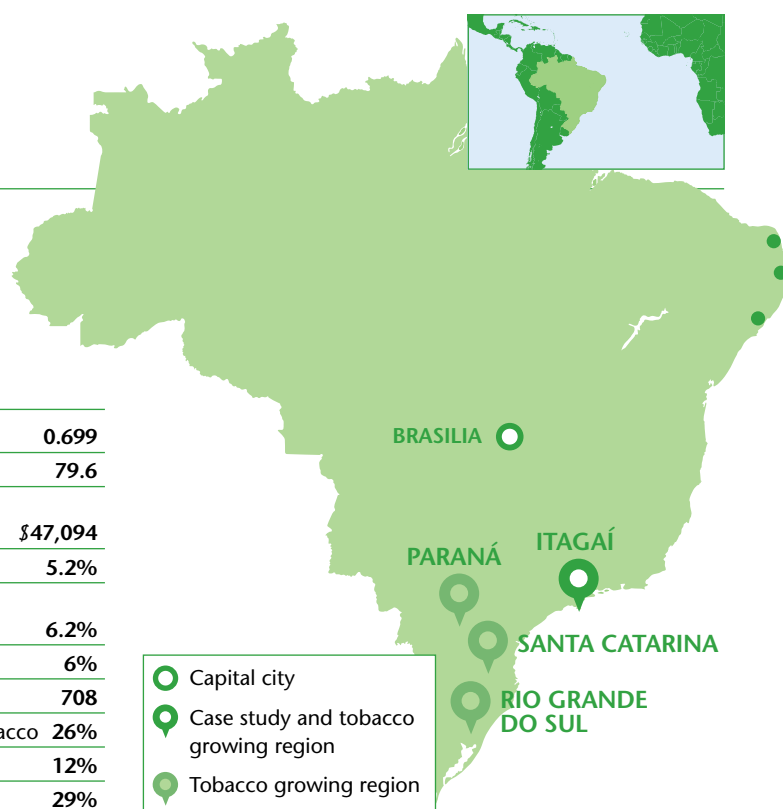
CASE STUDY BRAZIL

Brazil

KEY DATA

Human Development Index ¹²	0.699
Life expectancy at birth	79.6
Gross National Income (GNI) per capita US\$ (PPP 2008) PPP = Purchasing Power Parity	\$47,094
% population below Income Poverty Line (PPP \$1.25 a day)	5.2%
Employed people living on less than \$1.25 a day (% of total employment)	6.2%
% child labour (all 5–14 year olds)	6%
1,000 tonnes (million kg) of tobacco produced	708
% of country tobacco production grown for British American Tobacco	26%
% of world tobacco production	12%
% of British American Tobacco's global tobacco procurement	29%

12 A composite index measuring average achievement in three basic dimensions of human development – a long and healthy life, knowledge and a decent standard of living. Source: 1–6 UNDP 2010; 7–10 British American Tobacco 2009.



Forty one farmers from Itagá in the richer southern states of Brazil, where British American Tobacco sources its tobacco, were interviewed. Respondents were purposively selected across a range of farm sizes and farmer types, including tobacco growers, non-tobacco growers and those who had recently started or stopped growing tobacco. Tobacco farming in the richer southern states, predominantly tobacco for cigarettes grown under contract to international tobacco companies, is distinctly different from the poorer northeast where black tobacco and tobacco leaf for cigar wrapping is cultivated.

Key findings

- Tobacco cultivation occupies only a relatively small proportion of the crop area
- Tobacco is only one component of the cropping systems but a major source of income
- Tobacco cultivation is a reliable source of income for those without non-farm income sources
- Tobacco growing income is reliable but long-term trends are mixed
- Tobacco cultivation is seen to promote food security and income generation takes priority over meeting subsistence needs through agriculture
- There are positive perceptions of welfare changes
- There are costs and benefits of growing tobacco
- Households have debts but they reflect loans given by banks to make investments
- There is no evidence that tobacco cultivation leads to adverse labour or employment outcomes
- There are cases of reported health effects from tobacco cultivation and other agricultural crops
- There may be some environmental effects from tobacco cultivation
- Market support of tobacco cultivation is viewed positively

Context and sample

Brazil has had a long history of tobacco cultivation and is the largest exporter of tobacco in the world; however the crop only occupies about 0.75% of the cultivated area. Tobacco is grown mainly in two regions – in the poorer northeast region which specialises in black tobacco and tobacco leaf for cigar wrapping and in the richer south which grows tobacco leaf for cigarettes. Three main types of tobacco are produced: *Comum* (Common), Virginia and Burley. The *Comum* is sold mainly to domestic markets. Virginia and Burley are high quality varieties for both domestic and foreign markets. Other types of tobacco are produced for various other tobacco products such as cigars and cigarillos. Flue cured Virginia is dried in curing barns with indirect heat exposure and Burley is cured in air curing barns. An Integrated Tobacco Production System (ITPS) is in place to address sustainability concerns and security of quality supply, and is applied through an annual contract with the growers. Souza Cruz, British American Tobacco's subsidiary in Brazil, has operations concentrated in the southern states of Paraná, Santa Catarina and Rio Grande do Sul. The three states have equivalent socio-economic indicators, and the region of Itagá which crosses Santa Catarina and Paraná was selected as the case study area due to its good mix of farmer types, with both a high degree of tobacco cultivation and other cash crops.

Table BZ1 provides summary details on the 41 households that were interviewed. These were purposively selected to capture different levels of engagement with tobacco cultivation. The findings presented represent the views of these farmers and not those of DD International or British American Tobacco.

CASE STUDY | BRAZIL CONTINUED

Table BZ1: Sample frame for Brazil growers by grower status and land size class (acres)

Category	Grower status	Land size class (acres)				Total respondents
		<3.7	>= 3.7 <14.8	>=14.8 <29.6	>= 29.6	
1	Souza Cruz grower for >5 years		4	1	4	9
2	Souza Cruz grower for <2 years		1	3	2	6
3	Ex-Souza Cruz grower for < 2 years		1	3	2	6
4	Tobacco grower for other manufacturer		2	2	2	6
5	Non-tobacco grower for >5 years		3	3	1	7
6	Tobacco labourer	7				7
	Total	7	11	12	11	41

Twenty five households of the sample reported that they were tobacco growers; 15 of these were tobacco farmers currently under contract with Souza Cruz; of the six tobacco growers who had stopped cultivating for Souza Cruz, three now had contracts with other tobacco companies while the other three had left tobacco cultivation altogether. In addition, there were six tobacco growers who had long-term contracts with tobacco companies other than Souza Cruz. One of the tobacco labourers also rented land for tobacco cultivation and reported he sold tobacco leaf on the open market.

Findings: the role of tobacco cultivation in the sample household economies

Tobacco cultivation occupies only a relatively small proportion of the crop area

There is no evidence that tobacco growing is concentrated either in large or in smaller farms. Rather, as table BZ2 shows, tobacco cultivation was distributed across all the land size classes, although farm sizes are large (median value 15 acres). Further, one of the major advantages of growing cited by the tobacco growers was the relatively small amount of land that it occupied. This is consistent with other sources¹³ that report tobacco cultivation occupies on average 15% of the total area of farmers' land.

Table BZ2: Distribution of tobacco growers by farm size (including farm labourers)

Quartiles of sample	Farm size range (acres)	No of tobacco growers	No of non-tobacco growers	No of non-tobacco growers who recently stopped
Top 25%	37.1–123.5	9	1	1
Next 25%	17.3–29.6	5	5	3
Next 25%	4.9–16.1	8	2	1
Bottom 25%	0–4.4	3	8	1



13 FAO (2003) Issues in the global tobacco economy: selected case studies – Brazil.

Tobacco is only one component of the cropping system but a major source of income

Despite the fact that tobacco cultivation was reported as not taking up much land (in relation to overall farm size) it was for most of the tobacco growers the most important source of income. Twenty two of the 25 growers reported that this was the case and five of the farm labourers reported that working on tobacco farms was their major source of income. All the households reported a range of other crops that they cultivated: most reported the cultivation of soya bean and corn and for four of the households pasture linked to livestock and milk production was their major source of income. Accordingly, although these are tobacco farmers and tobacco cultivation is an important income source, it is only part of the overall farming system. The relative contribution of tobacco growing to household income is variable. Although for the majority (19) of all tobacco growers (of which there are 25 in the sample) tobacco growing contributes more than 60% of income, for the remaining growers the income from other sources is of equivalent or greater importance.

Tobacco cultivation is a reliable source of income for those with only on-farm income sources

For those households whose income was solely from on-farm sources of the agricultural labourers, income from tobacco cultivation was reported to be the most reliable source of farm-based income. For the households that had left tobacco cultivation with Souza Cruz and had not taken up contracts with other tobacco companies, age may have been a factor since all three reported remittance or pension payments as their major income source. However, data on respondents' age was not collected. For a number of households with non-farm income sources, such as waged employment or pensions, tobacco cultivation could not compete in terms of reliability.

Tobacco growing income is reliable but long-term trends are mixed

Although tobacco growing was reported as the most reliable income source, there was a more mixed picture in terms of the long-term trends in tobacco growing as a source of income. While eight of the tobacco growers reported that income had increased (and three noted that this increase had come from expanding area of cultivation), seven felt that income from tobacco cultivation had remained the same and a further six stated that it had declined or was variable.

Tobacco cultivation is seen to be food security promoting, with income generation taking priority over meeting subsistence needs through agriculture

Fifteen of those households with land, including one tobacco labourer with land, reported that they produced more than enough food to feed their family for a year. A further 12 produced between 9–12 months of food from their land while a small but significant number, eight (including one labourer), produced less than nine months' food from their land and two of these eight produced less than three months of food. Yet, they all saw income from tobacco cultivation as improving or significantly improving their food security. Given the size of landholdings it might seem odd that all those households with land are not fully self-sufficient in terms of food from their own land. However, the example of the household that grows less than three months' supply of its food explains why.

This is a household with more than 44 acres of land and is a farm that has moved completely into commercial agriculture and uses the income from its cash crops to buy its food. A common explanation for the food security promoting effects of tobacco cultivation was that it enhanced purchasing power and guaranteed income to purchase food. Thus, the cultivation of tobacco evidences a shift by these farmers to focus more on income-generating objectives than meeting subsistence needs directly from their land.

There are positive perceptions of welfare changes

Households reported on their perceptions of changes in their circumstances over the last 5–10 years and their expectations for the future. Most had positive expectations for the future although the picture was more mixed in relation to the past. For the tobacco growers under contract with Souza Cruz the comparison with the past and expectations in terms of the future were positive, for reasons of increased income from tobacco cultivation, the fact that they had acquired assets (land, a new house or car), and that they could now get access to credit. Of the growers who do not grow for Souza Cruz and who had more negative views on their circumstances, one related it specifically to his negative experience of growing tobacco. Others related it more specifically to health problems and age or increasing family size. For the non-tobacco growers positive expectations with respect to the future were related to a reduction in consumption requirements in the household with children having completed education and starting work.

There are costs and benefits of growing tobacco

While the cultivation of tobacco can be seen as an indicator of the commercialisation of agriculture, it is also recognised as a crop that carries risks and demands with it. For all but one of the tobacco growers it was seen to be the most profitable crop, with soya bean ranking second (non-tobacco growers viewed either milk production or soya bean as their most profitable enterprise). Tobacco growing was also seen by a small number (three) of tobacco cultivators as their most risky crop. All but five of the tobacco growers listed at least one disadvantage of growing it. This included multiple responses on the labour intensiveness of the crop; the costs of production; the use of chemicals; and, in two cases, the health issues associated with its cultivation. Balanced against these disadvantages were the advantages that were reported and all growers listed one or more of these. They included the guaranteed market, the profit margins and at least six cited the relatively small area that it occupied. Two labourers drew attention to the demand that it created for their labour.

The reasons for not growing tobacco were stated as being lack of land or labour and poor health. The reasons for stopping tobacco cultivation again related to lack of labour although one grower with Souza Cruz also cited sickness from growing tobacco and a second considered that the contract conditions were unfair, though his contract with Souza Cruz has not been renewed. The reasons why three growers moved to growing tobacco under contract with other companies may relate to perceptions of better terms and conditions. However, the reasons given for moving out of tobacco cultivation are also the reasons given for moving into tobacco cultivation by the six households and relate to the income benefits, previous experience of cultivation and satisfaction with the terms and conditions offered by Souza Cruz.

Households have debts but they reflect loans given by banks to make investments

Twenty six of the households have debts. Of the 15 tobacco growers under contract to Souza Cruz, 14 have debts. However, 12 of these debts were related to the purchase of farm machinery including tractors or cars. In only two cases were they linked to poor returns or failure of their crop. Thus, for the majority of the contracted tobacco growers, the income from tobacco cultivation has given them credit worthiness and 11 had taken loans from the bank to finance their capital investments. These debts cannot be seen as arising from poverty; rather they can be seen as indicators of rising prosperity and an ability to take on loans and invest. Tobacco cultivation sourced income was reported as the means of paying off these loans.

There is no evidence that tobacco cultivation leads to adverse labour or employment outcomes

Households were asked to identify their use of labour by crop and, in particular, the use of child labour, and reported if it was provided by the household or by hired labour. One case of child working was reported on maize cultivation though tobacco was also grown on the farm.

There are cases of reported health effects from tobacco cultivation and other agricultural crops

As noted above, health effects from the cultivation of tobacco were reported in a number of cases and given as reasons for moving out of, or staying out of, tobacco cultivation. Nearly all the health effects recorded were related to pesticide intoxication and were also reported by non-tobacco growers. One case of GTS was recorded from 1992 but was not considered serious by the farmer.

There may be some environmental effects from tobacco cultivation

There are reports of some land clearance and use of firewood from fuel dealers but most use their own wood from their plantations. Farmers are taking steps to reduce soil erosion and most have a riparian strip on their land, with the majority of respondents (19 out of 25) having 'significantly' changed their behaviour based on information provided mostly from tobacco companies including Souza Cruz, though also from government, farmers unions and the media.

Market support to tobacco cultivation is viewed positively

The technical support provided by Souza Cruz is viewed positively and accessed regularly. The conditions for credit, inputs, safety equipment, crop insurance, transport and contractual terms are viewed positively and while growers were aware of contractual conditions and penalties for default, these were seen to be negotiable and flexible.

In summary the evidence from this sample of tobacco farmers paints a picture of tobacco growing on a small proportion of land on increasingly commercial farms, with tobacco cultivation playing a positive role in terms of income and employment. Environmental and health risks are evident, but support provided by tobacco companies is mitigating these risks.



Uganda

KEY DATA

Human Development Index ¹⁴	0.442
Life expectancy at birth	54.1
Gross National Income (GNI) per capita US\$ (PPP 2008) PPP = Purchasing Power Parity	\$1,224
% population below Income Poverty Line (PPP \$1.25 a day)	51.5%
Employed people living on less than \$1.25 a day (% of total employment)	55.7%
% child labour (all 5–14 year olds)	36%
1,000 tonnes (million kg) of tobacco produced	19.5
% of country tobacco production grown for British American Tobacco	76%
% of world tobacco production	0.26%
% of British American Tobacco's global tobacco procurement	3%

14 A composite index measuring average achievement in three basic dimensions of human development – a long and healthy life, knowledge and a decent standard of living. Source: 1–6 UNDP 2010; 7–10 British American Tobacco 2009.



Forty eight farmers from the Arua district of Uganda were interviewed across a range of farm sizes and farmer types, including tobacco growers, non-tobacco growers and those who had recently started or stopped growing tobacco. Arua district was selected due to its importance for British American Tobacco as a growing area, with sample villages selected based on identifying locations with a good mix of farmer types for comparison purposes. As a small case study these findings do not claim to describe tobacco farming in Uganda but help to draw a picture of the role tobacco farming does and can play in farmer livelihoods.

Key findings

Tobacco cultivation is seen by farmers to have both disadvantages and advantages and the balance of how these are assessed depends on household circumstances. Households in general are exposed to multiple hazards of which crop failure is but one. However, the ability of households to move in and out of tobacco cultivation suggests that farmers are making informed and positive choices to improve their incomes and manage risks.

- Tobacco tends to be grown by farmers with large land holdings and not poorer farmers
- The level of tobacco cultivation tends to be proportional to farm size
- Tobacco cultivation is only one part of a diverse income portfolio and cropping system, but a primary income source
- Tobacco cultivation provides a significant (40–80%) proportion of household income and is the most reliable source of income for the majority of tobacco growers
- Those that grow tobacco tend to be neutral to positive about its role in household food security, while those who do not grow tobacco consider it can reduce food security
- Tobacco growing has disadvantages and advantages – it is a demanding crop with high labour, input and management costs, but is felt to have a good market and high income potential in comparison to other crops. For those willing to take on the risks the advantages outweigh the disadvantages
- Extension services and market support for tobacco exceeds that of all other crops
- Farmers are free to move in and out of tobacco production based on their own assessments of the risks and opportunities. There is little evidence of coercion, enforcement or entrapment of farmers in tobacco cultivation
- Shocks both external (drought) and household (death and illness) can have damaging welfare and food security effects on farmers. These were the same for both tobacco and non-tobacco farmers, with tobacco farmers being no more or less vulnerable
- There is evidence of child labour in tobacco growing but no evidence that this is any greater than on other crops. Several tobacco growers reported that their children have completed school or gone on for further studies, while others use tobacco income to pay for school fees. So, even if there are short-term absences from school, this does not necessarily mean that children are permanently absent
- There are few reported incidences of ill health as a direct result of tobacco production
- Wood is used for curing tobacco. The sustainability of source, and thus impact on deforestation, is dependent on the tobacco company
- Soil erosion and water pollution are hazards to tobacco cultivation; effective extension support provided by British American Tobacco to its contracted growers is helping to mitigate these risks

CASE STUDY | UGANDA CONTINUED

Table U1: Sample frame for Uganda tobacco growers by grower status and farm size

Category	Grower status	Farm size (acres)				Total growers
		>=0.6 <1.8	>=1.8 <2.4	>=2.4 <6.1	>=6.1	
1	British American Tobacco grower for >5 years		1	8	2	11
2	British American Tobacco grower for <2 years		2	7	1	10
3	Ex British American Tobacco grower for <2 years	1	1	6		8
4	Non-British American Tobacco tobacco grower		1	3		4
5	Non-tobacco grower for >5 years	2	0	4	1	7
6	Tobacco labourer	1	3	4		8
	Total	4	8	32	4	48

Context and sample

Commercial tobacco growing in Uganda began in 1927 and currently the crop is grown in four regions in Bunyoro in mid-Western Uganda, West Nile in the North West of the country (Arua, Koboko, Yumbe and Maracha districts), North Kigezi in South Western Uganda and the Middle North of the country. Tobacco production occupies 0.32% of total arable land in Uganda¹⁵. There are three commercially grown tobacco types; including Flue cured Virginia (FCV), Burley (air-cured), and Dark fire cured tobacco (DFC). British American Tobacco Uganda does not contract production of DFC tobacco. The tobacco crop is one of the most regulated crops in the country and the Tobacco Act governs the industry. Areas for production are regulated, as are the inputs to be used or prohibited, leaf buying regulations and the tobacco types. Small-scale farmers who are registered contract with one of the five tobacco companies in Uganda, who provide seedlings, inputs and training for their contracted farmers.

Arua district was chosen because it is known to be the most important tobacco growing district in Uganda and it is where British American Tobacco has a major presence. Within Arua the districts of Chillio and Obo were selected as they present a good range of farmer types. Table U1 provides summary details on the sample of 48 households that were interviewed. As with the Bangladesh and Brazil samples, these were purposively selected.

The sample included 21 tobacco growers with British American Tobacco contracts and four who grow tobacco but not under contract with British American Tobacco. Eight sample households work as labourers on tobacco growing but also cultivate small amounts of tobacco. There are 15 households in the sample who do not grow tobacco and eight of these had previously grown tobacco under contract with British American Tobacco but had not done so for the last two years. The findings presented represent the views of these farmers and not those of DD International or British American Tobacco.

Table U2: Distribution of tobacco growers by farm size (including farm labourers)

Quartiles of sample	Farm size (acres)	No of tobacco growers	No of non-tobacco growers	No of non-tobacco growers who recently stopped
Top 25%	4.5–12	9	3	1
Next 25%	3.0–4.5	7	5	2
Next 25%	2.5–3	5	7	3
Bottom 25%	1–2.2	4	8	2

Table U3: Distribution of tobacco growers by farm size and quantity grown

Quartiles of sample	Farm size (acres)	No of tobacco growers	Range and median values for tobacco contracted (kg)
Top 25%	4.5–12	9	300–1,100 (900)
Next 25%	3.0–4.5	7	300–800 (600)
Next 25%	2.5–3	5	300–400 (300)
Bottom 25%	1–2.2	4	200–800 (200)

¹⁵ Source: FAOSTAT.

Findings – the role of tobacco cultivation in the sample household economies

Tobacco tends to be grown by farmers with larger land holdings, and not poorer farmers

The data in table U1 shows that tobacco is grown, in this sample, mainly by those in the middle farm size class. Ranking tobacco growing status by decreasing farm size makes this clearer (table U2). Over three quarters of the farmers that are in the top two quartiles of farm size grow tobacco, while in the bottom two quartiles of land size only 33% do so. If farm size is used as a proxy for poverty status, then this indicates that tobacco in the sample tends to be cultivated by better-off farmers.

The level of tobacco cultivation tends to be proportional to farm size

Farmers are contracted to grow different quantities of tobacco and the quantity of tobacco that is contracted appears to fall in line with farm size. There is an outlier in the bottom quartile with one farmer with two acres who recently started tobacco cultivation reporting a British American Tobacco contract for 800kg; this seems high in comparison with the other contracts.

Tobacco cultivation is only one part of a diverse income portfolio and cropping system, but a primary income source

For all farmers who grow tobacco the crop is only part of their cropping system and income portfolio. All farmers grow a combination of crops including cassava, beans, maize and groundnuts, the relative proportion of which is likely to be highly variable between farmers and seasons. For farmers who grow tobacco, tobacco is their primary income source and for two of the labourers, tobacco-related labour is their most important income source. However, tobacco labourers also obtain income from livestock, off-farm labour and remittances and cash for work and other sources. Non-tobacco growers gain income from crops but also livestock and rural businesses.

Tobacco cultivation provides a significant (40–80%) proportion of household income and is the most reliable source of income for the majority of farmers

The contribution of tobacco cultivation to household income is also variable. For only one tobacco grower does it provide more than 80% of total income but for almost all other tobacco growers tobacco income was reported to provide between 40 and 80% of income. Not all tobacco growers and labourers saw tobacco growing as their most reliable income source but most did (26 out of 33). They also reported changes taking place in the level of income provided by tobacco cultivation. Of the 20 British American Tobacco contracted growers who responded to the question, 13 said that the income level was the same or had increased but seven said that it was variable or had decreased.

Tobacco growers tend to be neutral to positive about its role in household food security, while those who do not grow tobacco consider it can reduce food security

One critique of tobacco growing is that it creates food insecurity. To address this, farmers' perceptions on this issue were collected.

Of the total sample, 29 reported that they produced enough food to feed their families for 12 months or more, with a further 10 producing sufficient to provide for 9 to 12 months. Twenty four households considered that tobacco growing either had no effect or improved food security. However, 16 of the respondents (there were eight non-respondents) suggested that tobacco cultivation could reduce or significantly reduce food security although there was no explanation as to how it generated these effects. Seven of these 16 were non-tobacco producers.

For those willing to take the risks, the advantages of tobacco growing outweigh the disadvantages

Tobacco cultivation is seen to carry more risk in terms of production and income than other crops. Most tobacco growers (24 of the 25) saw it as the most profitable crop to grow with cassava ranking second. But tobacco cultivators were very clear as to the challenges that tobacco cultivation posed. Of the 42 households (growers and non-growers) that responded most listed at least three disadvantages of the crop. These were seen to be associated with the labour and time demands of crop production, the costs of inputs, susceptibility to the vagaries of climate (eg drought), environmental effects (soil exhaustion and fuel for processing), food security effects and the demand for child labour during the cropping season.

All but two of the respondents (a former tobacco grower and labourer) listed one or more advantages of tobacco cultivation. These were the available market, the size of income generated, the lump sum payment and the support provided by British American Tobacco (input provision, credit and transport). In the view of tobacco growers, the credit, access to farm inputs, technical support and transport to market support that they get is better than all other cash crops. In this sense, the market support for tobacco exceeds that of all other crops. Those who worked as tobacco labourers (Category 6) were positive about the employment and income generated from working on tobacco.

Farmers are free to move in and out of tobacco production based on their own assessments of the risks and opportunities; there is little evidence of coercion, enforcement or entrapment of farmers in tobacco cultivation

Tobacco cultivation is clearly seen to have advantages and disadvantages and how these play out depends on household circumstances. Nothing shows this more clearly than the motivations given by different households for moving into tobacco cultivation, for moving out of it or for staying out of it altogether. The reasons for moving into cultivation are the need to raise household income (particularly for schooling costs) and because tobacco was seen as the best, if not the only, cash crop available. The reasons for staying out relate to the ability of the household to resource the production of tobacco – to provide labour, input costs, sufficient land and returns to the resources allocated. The knowledge of the management costs were reasons given for not even trying to cultivate the crop and unwillingness to take on the risks. All these comments are personal judgements on the opportunities and costs associated with tobacco production. The point is that they underpin the decision to move in, to move out or stay out and there is little evidence of coercion, enforcement or entrapment of farmers in tobacco cultivation.

The comments by farm labourers on the advantages of tobacco cultivation are not supportive of employment in tobacco growing causing entrapment. The labourers note the benefits they get through having employment: as one put it, “As a labourer I don’t lose anything even if the crop fails because I would have been paid my money”.

Shocks both external (eg drought) and household (eg death and illness) can have damaging welfare and food security effects on farmers. These were the same for both tobacco and non-tobacco farmers, with tobacco farmers being no more or less vulnerable.

The hazards around tobacco cultivation must be put in context. Households were asked to report on actual shocks they had experienced in the recent past and the effects of these on household welfare. Forty five of the 48 households reported that they had experienced specific shocks that had affected their welfare. The significance of each shock (and the cumulative effects of multiple shocks) is specific to household circumstances. Two broad groups of shocks were identified. First, there are those that are caused by climate – eg drought, which can lead to crop failure whether you are a tobacco grower or not. The second are sickness or death within the household.

Direct outcomes of the shocks on crop production and household income have food security effects. These were widespread but not exclusive to tobacco producers. Non-tobacco producers also experienced crop failure (eg of cassava) creating food insecurity. Household responses to the effects of shocks common across all categories of growers were: food rationing, taking children out of school, the sale of assets (including livestock), income diversification and, in some cases, crop changes. The latter include shifting from cassava to sweet potatoes but two tobacco growers responded by either taking up or expanding existing tobacco cultivation. In summary, there is little evidence to support a picture of tobacco producers either being more or less vulnerable compared to non-tobacco producers to effects of climate hazards or health events.

There is evidence of child labour in tobacco cultivation but no evidence that this is any greater than for any other crop. Several tobacco growers reported that their children have completed school or gone on to further studies.

The issue in relation to children working on the farm is complicated as it does have effects in relation to schooling. As one informant stated “It affects education of children because when tobacco work is a lot, children cannot go to school.” At the same time, 10 tobacco farmers said they use tobacco growing income to pay for school fees. Children are clearly working in tobacco cultivation but does it mean that they do not go to school? From what was reported there is no evidence that children are not going to school or that tobacco cultivation, in particular, draws in more child labour than other crops. Indeed, the use of child labour by the respondent households was not specific to tobacco but was found across all households whether they were cultivating tobacco or not. Over the long term, several tobacco growers reported that their children have now completed school or gone on for further studies so, even if there are short-term effects of absence from school, this does not necessarily mean there are long-term ones.

There are few reported incidences of ill health as a direct result of tobacco production

While no medical research was done, farmers were asked their perceptions around the health hazards associated with tobacco cultivation. None of the farmers knew what green tobacco sickness was though two reported wearing their own protective clothing. No symptoms or illnesses other than the following were highlighted. One farmer had suffered skin disease but did not know if this was related to tobacco cultivation. Ten of the 41 farmers who responded, reported having suffered respiratory illness of some sort; of these, six said they did not know if it had any relationship to tobacco cultivation while four suggested it was related to curing, sorting and grading.

The impact of tobacco cultivation on deforestation is dependent on where wood is sourced

Wood is used for curing tobacco and barn construction. All the British American Tobacco contracted farmers interviewed used wood provided by British American Tobacco or from their own plantation. Tobacco farmers for other companies in Uganda used a range of different sources for wood supply.

Soil erosion and water pollution are hazards to tobacco cultivation; effective extension support provided by British American Tobacco can help to mitigate these risks.

While no scientific study on soil quality or water pollution around tobacco farms has been undertaken as part of this research, farmers were asked for their perceptions. The majority of farmers felt that tobacco farming can cause loss in soil fertility more than other crops, but most farmers had information on how to reduce this and in all but two cases reported having changed their farming practice as a result of this information. Likewise, for water pollution approximately half of all farmers have a water course running through their farm. Sixty per cent of them have at least a partial riparian strip and half have changed their farming practice based on extension material from British American Tobacco and other sources. British American Tobacco provides extension services to all their contracted farmers with all their contract farmers interviewed receiving regular support.

In summary, tobacco cultivation is seen to have both disadvantages and advantages for farmers and the balance of how these are assessed depends on household circumstances. Households in general are exposed to multiple hazards of which crop failure is but one. However, the ability of households to move in and out of tobacco cultivation suggests that there is an element of choice in what they do within the general constraints, given the restricted range of options available to them. Suitable extension support can help mitigate environmental impacts of tobacco cultivation.

Conclusions and implications



There are both similarities and differences between the different country case studies and the role of tobacco cultivation in rural livelihoods. The following points are noted with respect to the similarities and common features across the country case studies:

- Tobacco cultivation is part of a cropping system and is not the only source of income or the only crop grown; it is always part of a diverse income and crop portfolio;
- Nevertheless for those farmers with income from tobacco cultivation it was seen to be the most significant and the most reliable income source of those available and for many farmers that income has been increasing;
- Income from tobacco cultivation is mostly seen to increase rather than threaten or reduce food security and in all contexts farmers, whether tobacco growers or not, reported that their welfare had been improving;
- There is movement in and out of cultivation of tobacco suggesting a degree of choice; this movement does not support any picture of entrapment in cultivation through debt;
- Tobacco is seen to be a demanding crop in terms of labour and costs and the risks of cultivation are recognised; but there is choice as to whether to cultivate or not and that partly depends on individual household circumstances and resources;
- There is no evidence of tobacco cultivation leading to adverse labour or employment outcomes;
- The market support for tobacco cultivation is comparable or better than that which is available for other cash crops;
- There is some limited evidence of negative health and environmental effects from tobacco growing.

The following differences between the case study countries are noted:

- In the Bangladesh and Uganda case study households, tobacco tends to be grown by farmers with more land and the level of production is proportional to farm size; however the Brazil case study households had larger land holdings (median value 16 acres) than in Bangladesh or Uganda (median value three acres) and the tobacco crop occupies a small proportion of the farm and there is no correlation with farm size;
- The case households in Uganda see tobacco cultivation as more risky than those in Bangladesh and Brazil but this appears to reflect a more risky climatic and institutional environment; households in general appear more food secure in Brazil and Bangladesh than Uganda, possibly reflecting greater levels of irrigation and reliability of double cropping in Bangladesh and greater farm size in Brazil;
- Reflecting the rise of Brazil's economy, most of the case study households in Brazil could be classified as commercial rather than subsistence farmers seeking to maximise farm income and securing food from the market; tobacco farmers in Bangladesh and particularly in Uganda derive a greater portion of their food security from on-farm production;
- Case households in Bangladesh and Brazil appear to have a wider portfolio of potential cash crops eg jute and soya bean respectively in comparison with Uganda, and many of the households also draw income from these;
- More case households in Bangladesh use hired labour in tobacco cultivation than in Uganda or Brazil probably reflecting higher levels of landlessness in Bangladesh;
- The level of use of child labour is greater in Uganda than Bangladesh or Brazil reflecting higher national levels of child labour reported there; child labour is also reported in the cultivation of other crops and not specific to tobacco growing;
- The level of wood use in Uganda and Brazil is higher than in Bangladesh where cultivated woody species (eg jute) are used more for curing.



In summary, and notwithstanding the limitations of the case study research discussed in the introduction, the evidence that is specific to the three case study locations shows:

- That the claim of there being a direct causal link between tobacco cultivation and poverty does not hold true as a generalisation;
- That tobacco is grown as part of a cropping system and contributes to a diverse income portfolio; it is seen to be an important and reliable income source that enhances food security rather than reducing it and has contributed to increasing farmers' welfare;
- That tobacco is recognised as a demanding crop that carries risks; the risk environment is probably greater in Uganda than in Bangladesh or Brazil and reflects the risk of growing a cash crop for the market. The willingness of farmers to take on the risk of cultivation is specific to households but the ability of households to move in and out of tobacco cultivation does not support a picture of entrapment;
- The Ugandan case study provides evidence of children working in tobacco cultivation but the levels of child labour in agriculture are greater in general in Uganda than elsewhere and farmers who do not grow tobacco also use child labour. Farm labourers in all case studies saw employment in tobacco as an important source of rural income and no evidence of bonded labour was found.

In conclusion there is no evidence in these case studies to suggest that tobacco cultivation poses a greater hazard to the welfare of poor farmers in comparison with other available crop alternatives. There clearly are both health and environmental risks associated with the cultivation of tobacco but the evidence does not support widespread health and environmental impacts of tobacco cultivation. There are management practices in place to reduce the risk, with evidence of comprehensive support provided by British American Tobacco to its contract farmers.

The evidence points to the need to carefully specify and understand context when investigating the role of tobacco cultivation in rural livelihoods and to contrast tobacco growers with non-tobacco growers. Policy makers need to ensure that context is taken into account, avoiding a 'one size fits all' approach.

The evidence also suggests that where vertically integrated markets support production and sale of tobacco, such as the farmer contract system provided by British American Tobacco and some other large tobacco companies, this acts to reduce the risks associated with tobacco cultivation. This can be achieved through both extension support advising on better farm management practices and by stabilising input and output markets. This market support, combined with the income that tobacco cultivation can generate for farmers, sets the standards to which other 'alternative crops' must aspire if they are to provide 'alternative livelihoods' to tobacco cultivation.

Expert panel

Role

The panel's role has been to ensure that outputs from this research project are rigorous, balanced and that the conclusions drawn are consistent with the evidence presented to us. In addition to providing our comments (below) on this report, we have scrutinised and provided feedback on the literature review and the approach used to undertake the three case studies. In carrying out this work we have drawn upon our professional and personal experience of the subject matter and of research methodologies in general.

Observations: literature review

The literature review examined a wide range of research papers and other documents relating to the social, environmental and occupational health and safety (OHS) impacts of tobacco growing. The methodology used to assess the merits of the material was, in our opinion, appropriate and the analysis conducted systematically and professionally. The results are fairly presented though, at times, we felt that the authors could have been more forceful in their judgments.

The review highlighted the importance of geographic context which, we believe, is vital in understanding the impact of tobacco growing and, indeed, the impact of cultivating other crops on rural environments, communities and livelihoods.

Observations: case studies

While providing interesting insights, case studies of the type undertaken as part of this research – which draw directly on the views of farmers – cannot, in isolation, provide definitive proof that tobacco growing is better or worse than other crops at safeguarding the welfare of rural communities. Equally, they cannot provide detailed and robust assessments of, for example, the environmental or OHS impacts of tobacco growing. The fact that the report is explicit about the limitations of the approach adopted is to be commended. At the same time, the report does highlight a number of very important issues that should, we hope, help to improve the quality of discussion around this important topic.

The first is that, based on the responses of the sample, tobacco growing can contribute to reducing poverty in rural communities in many geographic contexts, especially where it is integrated into the farming system and where it is one – albeit a significant element – of a portfolio of income sources.

Secondly, the level of support provided by tobacco companies is valued by the respondents. This appears, to some degree, to play an important part in convincing farmers of the benefits of tobacco growing – notwithstanding the disadvantages alluded to in the case studies, such as the high labour, input and management costs. However, the challenge for tobacco companies may well be that as other commercial purchasers of agricultural produce begin to offer comparable levels of support, so where tobacco growing currently has advantages due to this support, that comparative advantage may be reduced.

Thirdly, and related to the previous point, tobacco companies are well-placed – through their extension services – to help contribute to improving farming practices and setting standards in relation to minimising soil degradation, water pollution and biodiversity losses.

Conclusions

The overall conclusions, outlined in this report, accord with the analysis of the information contained within the literature review and case studies. The latter are, of course, subject to the inherent limitations of using surveys based on the opinions of the sample. Within these limitations, the results of the survey are presented fairly. It would have been useful if the authors had identified specific practices that might yield further improvements in the sustainability of tobacco cultivation.

Further research

While tobacco growing clearly has environmental impacts we believe that the challenge now and in the future is less likely to be about its relative impact – that is, is tobacco growing having a greater or smaller impact on the environment than other intensively farmed crops – and more about how to lower the absolute impact of tobacco growing. Consequently, we believe that much more detailed research is required on how tobacco growing impacts the environment and how these impacts can be reduced in their totality. As we say above, tobacco companies will be valuable sources of information for this type of research and, potentially, provide research platforms, given their extension services.

In terms of the social impacts of tobacco growing, there is a clear need for large-scale quantitative studies that examine how competing causal factors contribute to poverty or improve prosperity. Such research should be preceded by a well-developed meta-analysis of the existing literature on the subject. Likewise, it would be interesting to compare and contrast how other sectors are attempting to extend support to farmers and whether these models are more or less effective than those offered by tobacco companies.

Finally, we believe that there should be more research into the allegations relating to child labour and the medical conditions allegedly associated with tobacco cultivation.

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Independent Assurance Statement to British American Tobacco Management

The Development Delivery International (DDI) report 'The role of tobacco growing in rural livelihoods – Rethinking the debate around tobacco supply reduction' (the Report) has been commissioned by British American Tobacco and reviewed by an external panel of experts. Our responsibility, in accordance with British American Tobacco management's instructions, is to provide conclusions on the Report, based on the outputs of the research conducted by DDI. We do not accept or assume any responsibility for any other purpose or to any other person or organisation. Any reliance any such third party may place on the information regarding British American Tobacco's Report is entirely at its own risk.

What we did to form our conclusions

The Report was evaluated against the following criteria:

1. Materiality

Whether the disclosures made in the Report address the key issues identified through the DDI research process.

2. Completeness

Whether the disclosures made in the Report draw on findings from each of the research steps completed by DDI.

3. Accuracy

Whether the quantitative data in the Report has been accurately transposed from DDI's researched information.

Whether the qualitative data collected through DDI's research has been accurately represented in the Report.

In order to form our conclusions we undertook the steps outlined below:

1. **Interview with a representative from DDI responsible for collating and managing the research** to understand the key issues identified and the process for reflecting them in the Report.
2. **Interview with a member of the expert panel** to understand key issues raised through the feedback process, how DDI responded to that feedback and resulting changes to the Report.
3. **Desk-based assessment of the outputs from the literature review and case study research** to conduct a materiality analysis of issues identified and challenge the presentation of these within the Report.
4. **Review the disclosures contained within the Report for materiality, completeness and accuracy**, with conclusions from the work steps undertaken.

Level of assurance

Our evidence gathering procedures were designed to obtain a limited level of assurance (as set out in ISAE3000¹⁶) on which to base our conclusions. The extent of evidence gathering procedures performed is less than that of a reasonable assurance engagement (such as a financial audit) and therefore a lower level of assurance is provided.

The limitations of our review

We have not provided any conclusions on the methodology used by DDI to conduct the work.

We did not repeat any of the research carried out by DDI and can therefore not provide conclusions on the Report findings or recommendations.

Our conclusions

Based on the scope of our assurance our conclusions are outlined below:

Materiality

Does the Report address the key issues identified through the DDI research process?

- With the exception of the subject areas listed below, we are not aware of any key issues identified in the research that have been excluded from the Report.
- We consider that the scope of the Report could have covered the following subject areas in more depth:
 - A more detailed discussion of the impacts caused by intensive crop production both generally and of tobacco growing specifically, particularly related to the environment, and disclosure of measures applied to mitigate these impacts.

Completeness

Does the Report draw on findings from each of the research steps completed by DDI?

- We are not aware of any aspects of the DDI research process that has been omitted from the Report.

Accuracy

Has the data and qualitative statements in the Report been correctly transposed from DDI's literature review and case study research?

- Nothing has come to our attention that causes us to believe that the data and qualitative statements have not been accurately transposed from DDI's researched information.

Our independence

We confirm annually to British American Tobacco whether there have been any events including the provision of prohibited services that could impair our independence or objectivity. There have been no such events or services in 2011.

Our assurance team

Our assurance team has been drawn from our global environment and sustainability network, which undertakes engagements similar to this with a number of significant UK and international businesses. The work has been led by a Lead Sustainability Assurance Practitioner.

Ernst & Young LLP, London

26 January 2012



This research, commissioned by British American Tobacco, was undertaken and written by Adam Pain, Ian Hancock and Bryony Everett under contract to DD International and with support from in-country research teams in Bangladesh, Brazil and Uganda.

Photos courtesy of British American Tobacco and DD International.



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