

## **Tobacco and the Environment**

### **Extent of tobacco production**

Tobacco is a temperate crop which is grown in more than 100 countries world-wide, mostly in developing countries. China is the world's largest producer, followed by the USA, India, Brazil and Turkey. These five countries produce nearly two-thirds of global output. [1]

### **Pesticides**

Tobacco is a sensitive plant prone to many diseases. Consequently, huge amounts of fertiliser, herbicide and pesticides are used in the growing of tobacco: up to sixteen applications may be made during a three-month growing period. Among the pesticides commonly used are aldicarb and chlorpyrifos, both highly toxic substances. Methyl bromide, an ozone-depleting chemical, is also commonly used to fumigate the soil prior to planting tobacco seedlings. In 1997, over 5.5 million pounds of methyl bromide were applied to tobacco fields worldwide. [2] The effects of these chemicals are not monitored generally but it is known that they leach into the soil and find their way into streams, rivers, and food chains. These substances may indirectly cause the genetic selection of pesticide-resistant mosquitoes or flies, making the control of diseases such as malaria much more difficult. [3]

### **Green Tobacco Sickness**

In addition to the health risks posed by using pesticides, tobacco growers are susceptible to an occupational illness known as green tobacco sickness. This is caused by the absorption of nicotine through the skin from contact with wet tobacco leaves. Symptoms of GTS include nausea, weakness, dizziness and abdominal cramps, and fluctuations in blood pressure and heart rates. It is not known exactly how many tobacco workers are affected by green tobacco sickness but one study of migrant workers in North Carolina suggests that 41% of the workers get the illness at least once during harvest season. [4]

### **Tobacco and deforestation**

After harvesting, tobacco is cured to preserve it for storage, transport and processing. Most tobacco is flue cured which entails passing heated air through the harvested leaves. In many developing countries trees are cut down to provide fuel for the curing process and for the construction of the curing barns. An estimated 200,000 ha of woodlands are removed by tobacco farming each year. Deforestation occurs mainly in developing countries amounting to 1.5% of global net losses of forest cover or 4.6% of total national deforestation. [5] In Malawi, which is heavily dependent on tobacco as an export crop, more than 35,000 tonnes of tobacco leaves are cured annually. About 12 cubic metres of wood are needed for every tonne of tobacco. [6] In one region of Malawi, nearly 80% of the wood cut down is used for tobacco, even though tobacco farmers make up only 3% of the farmers in the area. In semi-arid areas where tobacco thrives, the loss of trees can make land more vulnerable to desertification and unfit for agriculture. For example, in the tobacco growing Aura district of north west Uganda, sheet erosion is now very evident and much of the topsoil has been washed away. [7]

### **Industry response**

Faced with dwindling sources of wood fuel, the tobacco industry has attempted to address the problem by encouraging tobacco farmers to plant trees along with tobacco. However, the plantations set up by BAT in Kenya for example, consist largely of non-native, fast-growing eucalyptus and cypresses which adversely affect biodiversity and can lower the water table. Some farmers are reluctant to use these trees as fuel, preferring instead to sell their trees as building poles while continuing to collect wood from what remains of the natural forest. [8]

The production of tobacco from the planting of the seed to the marketing of the finished product is tightly controlled by the multinational companies. They offer inducements to the farmers in developing countries in the form of financial incentives, technical expertise, supplies, seeds, fertiliser, and a

guaranteed foreign exchange for the tobacco crop after harvest. Although the industry provides employment for many unskilled workers and may help with education and social welfare, dependence on tobacco by the governments of poor countries means that little is done to counter the growing trend in tobacco consumption in these countries. [3](#)

## **Impact on food production and health**

The growing of tobacco means that less land is available for food crops. While some food is grown between crops of tobacco, it has been estimated that 10 to 20 million people could be fed by food crops grown instead of tobacco. [3](#) A cost-benefit analysis of tobacco growing for developing countries has shown that the short-term gain from tobacco is likely to be offset by long-term costs. Many developing countries are entering a phase in which life expectancy after childhood has improved because of the control of infectious diseases but there are now substantial increases in tobacco-related illness. In Pakistan, for example, lung cancer is now the most commonly reported fatal cancer. In India, a six fold increase in mortality from bronchitis and emphysema has been recorded, coinciding with a dramatic increase in cigarette consumption. Tobacco consumption may affect whole families indirectly. A study in Bangladesh found that tobacco expenditure compounds the effects of poverty and cause a serious decline in living standards amongst the poor. [\[9\]](#)

## **Diversification**

In developed countries, a fall in domestic consumption combined with higher labour costs has prompted a move towards diversification into other crops. In Canada, for example, the number of farms producing tobacco decreased from 2916 in 1981 to 1326 in 1992. [\[10\]](#)

## **Pollution**

Burning tobacco is the main source of indoor pollution in the developed world. Tobacco smoke contains about 4,000 chemicals including carcinogens, irritants and toxic gases. The health impact of breathing environmental tobacco smoke is well documented. See Fact sheet no 8, [Passive smoking](#) or the more detailed [Passive smoking brief](#) for further information.

A US study highlighted the damage discarded cigarette ends cause to the marine environment. One living organism tested to determine the level of chemical in the environment was the planktonic animal *Daphnia magna* (Water Flea). The study revealed that chemicals in cigarette butts are highly toxic to water fleas at concentrations above 0.125 cigarette butts per litre of water. [\[11\]](#)

The International Coastal Clean up Day's 2003 worldwide beach, river and streams clean-up found cigarette litter to be the major source of debris, accounting for 29.5 percent of all items found and numbering 1.922 million. [\[12\]](#)

In a survey conducted by Keep Britain Tidy in 2002, cigarette-related litter was found in 77 per cent of all locations across Britain. [\[13\]](#) As part of its reclaim the streets campaign, The Daily Mirror found that cigarette ends, packets and matches were the most commonly found items of rubbish, with 122 tonnes of cigarette related rubbish being dropped every day across the UK. [\[14\]](#)

## **Fire**

Cigarettes and matches are a common cause of fires. Smokers' materials and matches were the most frequent source of ignition causing accidental dwelling fire deaths in 2002. The leading cause of fatal accidental dwelling fires (40% of the total) was careless handling of fire or hot substances (such as the careless disposal of cigarettes). The number of deaths in this category fell slightly, from 147 in 2001 to 141 in 2002. This continues the general downward trend – in 1992 the figure stood at 207. Domestic fires caused by smokers' materials (i.e. lighters, cigarettes, cigars or pipe tobacco) fell by 9% to 4,400.

