

Cover Story



Before the last one disappears ...

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Butterflies, bees and other insects are essential constituents in sustainable ecosystems. The shadow of butterfly in the picture symbolizes the insects that are endangered by the harmful effects of tobacco cultivation.

With World No Tobacco Day 2017, addressing adverse effects of tobacco on the environment, this is an appropriate time to highlight the hidden threats of tobacco cultivation to our ecosystems (1). Even though the harmful effects of tobacco on human health are widely discussed, its harm on the environment and ecosystems is not considered adequately. As per the wise words of Great Red Indian Chief Seattle (2).



“Whatever befalls the Earth – befalls the sons of the Earth. Man did not weave the web of life – he is merely a strand in it. Whatever he does to the web, he does to himself.”

Therefore, the impact of tobacco on the environment should be considered with the same rigor we consider the impact of tobacco on human health. Sri Lanka cultivates 100% of tobacco leaves for Ceylon Tobacco Company (CTC) to manufacture cigarettes. In 2015, this production was 3,164 tons, cultivated in less than 0.01% of the country’s farmable land (3-4).

Tobacco cultivation is a grave threat to ecosystems as it leads to animal habitat fragmentation leading to the extinction of some species. As tobacco is cultivated as a monocrop, it requires substantial use of pesticides to protect the cultivation. These pesticides include insecticides, herbicides, fungicides, growth regulators and also chemical fertilizers. The evidence from our region comes from Bangladesh, in which commonly used weedicides in tobacco farming was found to cause destruction of aquatic environments and soil degradation (5). Aldicarb, a carbamate insecticide, is one of the commonest pesticide used in tobacco cultivation. It is known to be toxic for birds, honey bees, fish and earthworms. It pollutes the water resources and therefore affecting the living environment of aquatic plants and animals. Further, it causes irreversible reduction of soil fertility leading to a vicious cycle of more fertilizer and agrochemical use. Chlorpyrifos, a crystalline organophosphate, is another pesticide used in

tobacco cultivation which is known to contaminate air, groundwater, rivers, lakes and rainwater, with residues being found up to 25 km from the site of application. *1,3-Dichloropropene (1,3-D)*, commonly known as *Telone II*, is a highly toxic soil fumigant used in tobacco cultivation and has been found in groundwater, drinking water and rainwater in tobacco cultivation areas (5-6).

Pesticides are not the only cause of habitat destruction. Tobacco cultivation itself directly accounts for it in several ways. Deforestation directly affects the natural habitat destruction of different species of animals. Tobacco is cultivated at least in 124 countries. In 2012, approximately 7.5 million tons of tobacco leaf was grown on 4.3 million hectares of agricultural land. China is the leader in tobacco cultivation with a massive production area (6). Tobacco plants absorb more nitrogen, phosphorus and potassium than other food crops leading to reduced soil fertility. In addition, 'topping' and 'de suckering' used in tobacco cultivation also result in reduced soil fertility. As long-term tobacco cultivated lands get degraded, farmers tend to move on to new virgin lands, adding to the overall impact. Even though reforestation has been carried out in some areas, they were not successful and even contributed to the negative impact in some cases with the introduction of species like eucalyptus and cyprus. Another aspect of deforestation by tobacco cultivation is heavy usage of wood for flue curing, a main step of tobacco leaf manufacturing process (5).

In conclusion, as a plant, tobacco causes harm to the environment, especially in the context of highly commercialized cultivation driven by a profit seeking industry. The species affected by tobacco play an important role in our ecosystem. Thus, we have to act promptly for their survival before their last shadow disappears from our planet forever.

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