

TOBACCO | WATER | OCEANS

How tobacco control contributes to achieving Sustainable Development Goals 6 and 14

BACKGROUND

In September 2015, the UN General Assembly formally adopted the Sustainable Development Goals (SDGs). The goals call for all countries to eliminate poverty and hunger worldwide, protect the climate, forests and oceans and improve public health.

Goal three (health) includes the implementation of the WHO Framework Convention on Tobacco Control (FCTC). With good reason, considering the fact that seven million people die each year as a result of consuming addictive tobacco products.¹ This is the leading preventable cause of death through non-communicable diseases (NCDs).

Tobacco control is also relevant for the achievement of other development goals. For example, the reduction of tobacco consumption and production contributes to the improvement of water supply (SDG 6) and to the conservation of the oceans, seas and marine life (SDG 14).

CLEAN WATER AND SANITATION

SDG 6: Ensure availability and sustainable management of water and sanitation for all

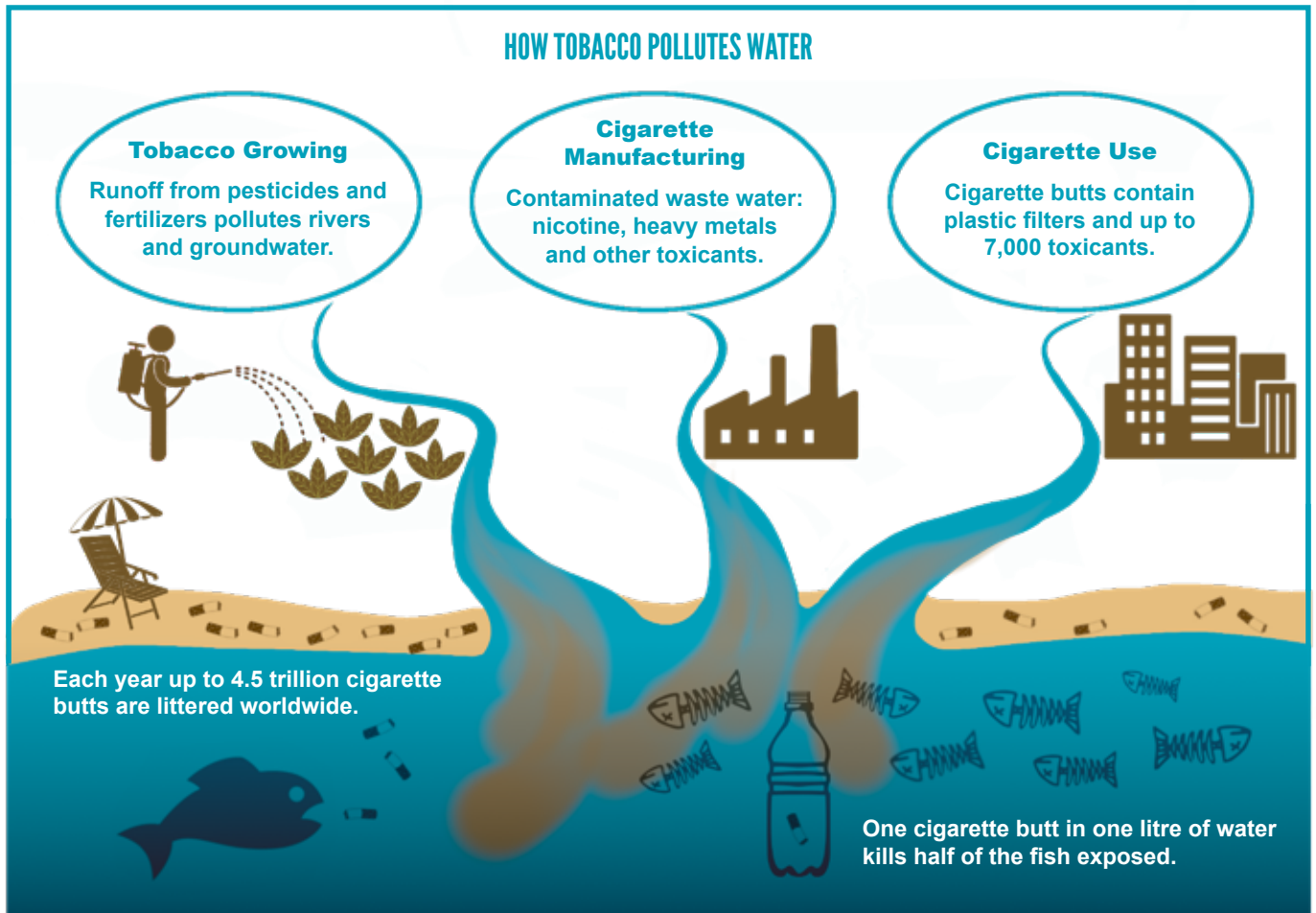
LIFE BELOW WATER

SDG 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

CIGARETTE BUTTS CONTAMINATE WATER

In 2016, one billion smokers consumed 5.7 trillion cigarettes worldwide.² While smoking prevalence has dropped in the past decade, global cigarette consumption is predicted to rise further due to population growth and young people in developing regions taking up smoking.³ Globally, the use and disposal of cigarettes leads to 3.2 million tonnes of solid

waste per year from packaging, plug wraps, and cigarette filters.⁴ After smoking, cigarette butts most commonly are littered, adding up to an estimated 4.5 trillion pieces worldwide polluting the environment every year. In cities they constitute up to 50 % of littered items (SDG 11.6) and during beach cleanups they are the number one picked up item (SDG 14.1).⁵ Cigarette butts are composed of a filter and residue tobacco.



They contain a mixture of over 7,000 toxic substances, notably bioaccumulative heavy metals, polycyclic aromatic compounds, ethyl phenol, and nicotine.⁶ These poisons leach out to the environment. Research on levels of nicotine in urban water showed that one cigarette butt is enough to contaminate 1,000 litres of water with concentrations having toxic effects on water organisms (SDGs 6.3, 6.6).⁷ Another study on the effect of cigarette butt leachate

Additionally, monocropped tobacco intensively depletes the soil of nutrients, exacerbated by the practice of topping and suckering to increase the nicotine concentration in the leaves. Consequently, tobacco farming needs a huge amount of fertilizers.¹²

In Bangladesh's Bandarban and Cox's Bazar districts, tobacco is grown along the fertile floodplain of the Matamuhuri River, a major water source in the area. With tobacco fields occupying a stretch

TOBACCO CONTROL IS PART OF THE DEVELOPMENT GOALS

With **SDG 3**, the United Nations want to “ensure healthy lives and promote well-being for all at all ages“. This includes target 3.a, which aims to strengthen the implementation of the WHO Framework Convention on Tobacco Control (FCTC).

on small fish concluded that half of the fish died at a concentration of one used cigarette butt in one litre of water.⁸ Finding its way through storm sewers and drainages to rivers and oceans, tobacco product waste does not only release toxicants, but also adds to the burden of plastic waste (SDGs 14.1, 14.2). Cigarette filters are made of cellulose acetate, i.e. plastic microfibers. They are not biodegradable, but decompose into microplastic. Fish, birds and marine mammals mistake butts for food. While bigger pieces can contribute to obstructions in the digestive tract of these animals, ingested micro plastic can return to humans through the food chain.⁹

TOBACCO FARMING AFFECTS WATER BODIES

Tobacco is grown in 125 countries using 4 million hectares of arable land, primarily in low- and middle-income countries where 90% of the global tobacco leaf harvest is produced.¹⁰

Tobacco growing is shaped by intensive use of pesticides. Water soluble toxicants used in tobacco growing include for example Aldicarb and Carbofuran. While both are banned in the EU, they still are used in tobacco growing countries like Bangladesh, Brazil or Vietnam.¹¹

of 80 kilometres on both river banks, the runoff from pesticide and fertilizer residues directly pollutes the water and adversely affects fish populations and aquatic life biodiversity (SDGs 3.9, 6.6).¹³ Furthermore, growing tobacco needs a lot of surface as well as underground water for irrigation (SDG 6.4). The water footprint of raw tobacco is 2,925 litre per kilo. This is double the amount needed for maize, five times that of manioc and nearly eight times that of sweet potatoes.¹⁴ Water scarcity, increasingly erratic rains, excessive use of fertilizers, and population growth are major factors for water stress in tobacco growing countries like Bangladesh, Malawi, and Zimbabwe.¹⁵

As well, primary processing of tobacco and cigarette manufacturing involves water use. Globally, these stages of the tobacco chain need around 60 million tonnes of fresh water and produce 55 million tonnes of waste water. In cigarette manufacturing, water resp. steam is used to regulate the moisture of the tobacco blend, to apply additives, and to process tobacco pulp. The resulting wastewater contains a number of toxicants such as ammonia, nicotine, hydrochloric acid, nitrate, chlorine, and lead compounds.¹⁶

WHAT NEEDS TO BE DONE

Tobacco control measures can significantly contribute to Sustainable Development Goals 6 and 14. The reduction of tobacco use (SDG 3.a, FCTC Art. 3) directly translates into less environmental harm caused by the tobacco product chain.

To curb the toxic plastic waste in water bodies and oceans, it is important to raise awareness among users about the effects of littering butts (SDG 12, FCTC Art. 12), e.g. through coastal and city cleanups (SDGs 6, 11, 14). Additionally, the longterm effects of nicotine on water bodies and effective measures to distract nicotine from waste water need research attention (SDGs 6.3, 6.6, FCTC Art. 20-22).

The European Union's upcoming directive to reduce plastic waste suggests to phase out cellulose acetate cigarette filters and substitute them by alternatives (SDGs 6, 14, FCTC Art. 9).¹⁷ Since filters have not proven to make cigarettes safer, the EU should rather consider a ban of filters altogether.¹⁸

In tobacco growing countries, there is an urgent need to reduce the environmental harm to water bodies in tobacco farmers' communities (SDGs 3.9, 6.3, 6.4, FCTC Art. 18). In Bangladesh, for example, legislative action is under way to introduce minimum distances from water bodies for tobacco cultivation.¹⁹ But in the long run, governments should promote sustainable alternative livelihoods for tobacco farmers to substantially reduce the environmental toll of tobacco (SDGs 3.9, 6.3, 6.4, FCTC Art. 17).²⁰

Finally, governments need to mandate systematic and extensive reporting from the tobacco industry on its environmental impacts and hold the industry financially responsible for it, e.g. using the Extended Producer Responsibility principle.²¹

Sources

Bibliography available online:

→www.unfairtobacco.org/en/sdg-facts05

Further information on tobacco & the SDGs:

→www.unfairtobacco.org/en/sdgs

Unfairtobacco
c/o BLUE 21 | Gneisenaustr. 2a | 10961 Berlin | Germany
Phone: +49 - (0)30 - 694 6101 | Email: info@unfairtobacco.org
Website: www.unfairtobacco.org

Author: Sonja von Eichborn
Layout: Michael Tümpfner, www.neungradplus.de

Berlin, September 2017

Unfairtobacco exposes how tobacco industry harms farmers, consumers and the environment.

With financial support from ENGAGEMENT GLOBAL
on behalf of



With the kind support of



The contents of this publication are the sole responsibility of the Berlin Working Group on Environment and Development (BLUE 21 e.V.) and do not reflect the views of Engagement Global gGmbH, the Federal Ministry for Economic Cooperation and Development or the Berlin Senate Department for Economics, Energy and Businesses.

SOURCES

- 1 World Health Organization 2017: WHO report on the global tobacco epidemic, 2017: monitoring tobacco use and prevention policies. Geneva, Switzerland. Online: <http://apps.who.int/iris/bitstream/10665/255874/1/9789241512824-eng.pdf?ua=1>
- 2 J. Drope, N.W. Schluger 2018: The tobacco atlas, 6. Ed. Atlanta, Georgia, USA: American Cancer Society, Vital Strategies. Online: https://s27854.pcdn.co/wp-content/uploads/2018/03/TobaccoAtlas_6thEdition_LoRes_Rev0318.pdf
- 3 World Health Organization 2017: WHO report on the global tobacco epidemic, 2017: monitoring tobacco use and prevention policies. Geneva, Switzerland. Online: <http://apps.who.int/iris/bitstream/10665/255874/1/9789241512824-eng.pdf?ua=1>
M. Zafeiridou, N.S. Hopkinson, N. Voulvoulis 2018: Cigarette Smoking: An Assessment of Tobacco's Global Environmental Footprint Across Its Entire Supply Chain. Environ. Sci. Technol. 52, No. 15: 8087-8094. doi: 10.1021/acs.est.8b01533
- 4 Zafeiridou, Hopkinson, Voulvoulis 2018: Cigarette Smoking: An Assessment of Tobacco's Global Environmental Footprint Across Its Entire Supply Chain.
- 5 T. E. Novotny, E. Slaughter 2014: Tobacco Product Waste: An Environmental Approach to Reduce Tobacco Consumption. Curr. Envir. Health Report. 1: 208-216. doi: 10.1007/s40572-014-0016-x
Ch.G. Healtton, M.K. Cummings, R.J. O'Connor, T. E. Novotny 2011: Butt really? The environmental impact of cigarettes. Tobacco Control 20, Suppl. 1:i1. Online: https://tobaccocontrol.bmj.com/content/20/Suppl_1/i1
Ocean Conservancy 2018: Building a Clean Swell. Report 2018. Washington D.C., USA: Ocean Conservancy. Online: <https://oceanconservancy.org/wp-content/uploads/2018/07/Building-A-Clean-Swell.pdf>
- 6 World Health Organization 2017: Tobacco and its environmental impact: an overview. Geneva, Switzerland. Online: <http://apps.who.int/iris/bitstream/handle/10665/255574/9789241512497-eng.pdf?sequence=1>
A.L. Roder Green, A. Putschew, T. Nehls 2014: Littered cigarette butts as a source of nicotine in urban waters. Journal of Hydrology 519, Part D: 3466-3474. doi: 10.1016/j.jhydrol.2014.05.046
- 7 Roder Green, Putschew, Nehls 2014: Littered cigarette butts as a source of nicotine in urban waters.
- 8 E. Slaughter et al. 2011: Toxicity of cigarette butts, and their chemical components, to marine and freshwater fish. Tobacco Control 20, Suppl. 1:i25-i29. Online: https://tobaccocontrol.bmj.com/content/20/Suppl_1/i25
- 9 Center for Biological Diversity 2018: Ocean Plastics Pollution. A Global Tragedy for Our Oceans and Sea Life. Online: https://www.biologicaldiversity.org/campaigns/ocean_plastics
Plastic Oceans Foundation 2018: Gobsmacking Facts. Online: <http://plasticoceans.uk/wp-content/uploads/2017/09/Gobsmacking-facts.pdf>
- 10 L. Graen 2014: Doppelte Last: Tabak im Globalen Süden. Berlin, Germany: Unfairtobacco / Berliner Landesarbeitsgemeinschaft Umwelt und Entwicklung (Blue 21). Online: <http://www.unfairtobacco.org/doppeltelast>
- 11 UBINIG no date (2013): UBINIG policy brief. Impact of tobacco cultivation on agricultural production in Bangladesh. Online: http://ubinig.org/cpdf/21_52.pdf
UNITAB, FETRATAB 2012: The use of pesticides in tobacco-growing. Assessment of the situation based on independent publicly available information. Paris/Rome: UNITAB/FETRATAB.
Pesticide Action Network 2018: PAN Pesticides Database – Chemicals. Carbofuran. Online: http://www.pesticideinfo.org/Detail_Chemical.jsp?Rec_Id=PC35055
UNEP, FAO, Rotterdam Convention, Chemical Review Committee 2015: UNEP/FAO/RC/CRC.11/6, INF/11-INF/13. Online: <http://www.pic.int/Portals/5/download.aspx?d=UNEP-FAO-RC-CRC.11-CRC-11-3.English.pdf>
Nguyen Thanh Huong, Hoang Van Minh, Kim Bao Giang 2009: Impact of tobacco growing on the livelihood and health of tobacco farmers and the environment: a preliminary study in Vietnam. Bangkok, Thailand: SEATCA. Online: https://seatca.org/dmdocuments/2_impact_of_tobacco_growing_vietnam.pdf
Pesticide Action Network 2018: PAN Pesticides Database – Chemicals. Aldicarb. Online: http://www.pesticideinfo.org/Detail_Chemical.jsp?Rec_Id=PC35144
UNEP, FAO, Rotterdam Convention, Chemical Review Committee 2008: Draft decision guidance document for aldicarb. Online: [http://www.pic.int/Portals/5/INCS/CRC5/m13\)/English/K0842543%20CRC-5-13.pdf](http://www.pic.int/Portals/5/INCS/CRC5/m13)/English/K0842543%20CRC-5-13.pdf)
- 12 N. Lecours 2014: The harsh realities of tobacco farming: A review of socioeconomic, health and environmental impacts. In: Tobacco control and tobacco farming: separating myth from reality. Ed. by W. Leppan, N. Lecours, D. Buckles. London, UK; New York, NY, USA; Ottawa, Canada: Anthem Press; International Development Research Centre. 99-137.
F. Akhter, D. Buckles, R.H. Tito 2014: Breaking the Dependency on Tobacco Production: Transition Strategies for Bangladesh. In: Tobacco control and tobacco farming: separating myth from reality. Ed. by Leppan, Lecours, Buckles: 141-187.
- 13 Akhter, Buckles, Tito 2014: Breaking the Dependency on Tobacco Production: Transition Strategies for Bangladesh.
- 14 The water footprint is the total volume of fresh water necessary to produce a good.
M. Mekonnen, A.Y. Hoekstra 2011: The green, blue and grey water footprint of crops and derived crop products. Hydrol. Earth Syst. Sci., 15: 1577–1600. doi:10.5194/hess-15-1577-2011
- 15 R. Damania et al. 2017: Unchartered Waters. The New Economics of Water Scarcity and Variability. Washington D.C., USA: The World Bank. doi:10.1596/978-1-4648-1179-1
- 16 Zafeiridou, Hopkinson, Voulvoulis 2018: Cigarette Smoking: An Assessment of Tobacco's Global Environmental Footprint Across Its Entire Supply Chain.
T.E. Novotny, F. Zhao 1999: Consumption and production waste: another externality of tobacco use. Tobacco Control 8, no. 1:75-80.
Truth Initiative 2018: Tobacco and the environment. Washington D.C., USA: Truth Initiative. Online: https://truthinitiative.org/sites/default/files/truth_initiative-environment_fact_sheet-FINAL.pdf
- 17 European Parliament, Legislative Observatory 2018: 2018/0172(COD). Reduction of the impact of certain plastic products on the environment. Online: [http://www.europarl.europa.eu/oeil/popups/ficheprocedure.do?lang=en&reference=2018/0172\(COD\)](http://www.europarl.europa.eu/oeil/popups/ficheprocedure.do?lang=en&reference=2018/0172(COD))
- 18 L.T. Kozlowski, R.J. O'Connor 2011: Cigarette filter ventilation is a defective design because of misleading taste, bigger puffs, and blocked vents. Tobacco Control 20, Suppl. 1: i40-i50. Online: https://tobaccocontrol.bmj.com/content/20/suppl_1/i40
M.-A. Song et al. 2017: Cigarette Filter Ventilation and its Relationship to Increasing Rates of Lung Adenocarcinoma. Journal of the National Cancer Institute 109, no. 12: dxj075. doi: 10.1093/jnci/djx075

SOURCES

- 19** S. Parvez 2017: Policy drafted to discourage tobacco farming. The Daily Star. 9 July. Online: <https://www.thedailystar.net/business/policy-drafted-discourage-tobacco-farming-1430332>
- 20** S. von Eichborn, M.-L. Abshagen 2015: Tobacco: Antisocial, Unfair, Harmful to the Environment – Tobacco Production and Consumption as an Example of the Complexity of Sustainable Development Goals (SDGs). Berlin: Bread for the World - Protestant Development Service, Unfairtobacco.org and German NGO Forum on Environment and Development. Online: https://www.unfairtobacco.org/wp-content/uploads/2017/05/tobacco_antisocial_web.pdf
- 21** Zafeiridou, Hopkinson, Voulvoulis 2018: Cigarette Smoking: An Assessment of Tobacco's Global Environmental Footprint Across Its Entire Supply Chain.
- C. Curtis et al. 2014: Extended Producer Responsibility and Product Stewardship for Tobacco Product Waste. International Journal of Waste Resources 4:157. doi:10.4172/2252-5211.1000157