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The Tobacco Industry and the Environment

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Tobacco companies have significant control over product design and supply chains which are responsible for:

Harms to ocean life.

Environmental toxins leach from cigarette butts throughout their decade-long decomposition,^{1,2} which harms marine life.³

Disruption to the ecosystem.

Tobacco production accounts for 5% of global deforestation⁴ and offers no replenishment to the soil or to other parts of the farm ecosystem.⁵

The Tobacco Industry's Production of Cigarettes Damages the Ecosystem

Tobacco is a major ecosystem disruptor. By continuing to produce and profit from tobacco and by perpetuating the long-lasting harms to the environment,⁶ the tobacco industry undermines efforts toward ecosystem restoration.⁷

1. **Clearing lands**, with the preference of virgin lands for tobacco production, is leading to **deforestation**, negatively impacting forest reserves.⁸
 - Current practices of tobacco farming are not sustainable. Shortened periods of replenishment of forests and soil are endangering the recovery of the woodlands, subsequently causing a topographical change from woodlands to bush, or worse, permanent deforestation.⁹
 - **Cutting and burning** of stalks and plant residue after harvest because they are of no food value to livestock and poultry, thus reducing essential animal resources such as manure.¹⁰

Fast Facts

Tobacco: Deadly to the Environment at Every Stage

Tobacco production causes:

- 5% of global deforestation (up to 30% of deforestation in tobacco growing countries)¹¹
- 200,000 hectares of wood biomass loss annually¹²

Tobacco use leads to:

- 4.5 trillion cigarette butts littered every year globally, generating 1.69 billion pounds of toxic trash each year¹³
- 2 million tons of solid waste from cartons and packaging¹⁴
- Indoor particulate matter concentrations 10 times higher than diesel car exhausts¹⁵
- 19-38% of the total debris collected in ocean clean-ups globally are cigarette butts¹⁶

Lighting up cigarettes would require:

- 9 million trees destroyed every year for producing matches¹⁷

2. **Burning firewood** or fuel wood for days, secured from neighboring forests, to “flue cure”¹⁸ tobacco leaves, causes soil erosion and depletion of wood resources.
 - Cutting trees, including rubber trees and indigenous trees, leads to **deforestation** as well as **transition of local streams** from perennial to seasonal, thereby causing water scarcity.¹⁹
 - Trees are also destroyed in the production of matches that are produced/used to light up the cigarette.²⁰
3. **Use of agrochemicals** is causing **poisoning**²¹ and **water pollution**, as evidenced by agrochemical residues in waterways adjacent to tobacco farming communities, causing severe detrimental impacts on hydrological systems and sediment yield in wetlands, riparian zones and steep slopes.²²
 - Tobacco is among ten (10) crops that require the most fertilizers.²³
 - Chloropicrin, among many pesticides used, is a lung-damaging agent toxic to fish and other organisms.²⁴
4. **Using plastics and chemicals** in cigarette filters adversely affects **marine life and water sanitation, aggravated by the fact that cigarette butts are the most littered item on earth.**²⁵
 - Arsenic, lead and ethyl phenol are leached from cigarette butts into waterways, affecting the aquatic life and drinking water.²⁶
 - Cigarette lighters, mostly disposable, require plastic, metal and butane.²⁷
 - E-cigarettes and devices contain batteries and other hazardous²⁸ and non-biodegradable material.²⁹
5. Designing cigarettes that do not self-extinguish leads to accidental fires.³⁰ Cigarettes are the most common cause of accidental fires, including forest fires. Around 8-10% of fires in the U.S. are caused by cigarettes.³¹

How does the tobacco industry undermine efforts to protect the environment and restore the ecosystem?

Transnational tobacco companies have been named some of the worst polluters in the world³² and yet, they manage to flaunt their pro-environment practices,³³ awards from the business community³⁴ and their supply chain audit or due diligence regimes.³⁵ The tobacco industry employs a public relations strategy that diverts attention from the true impact of environmental harms, obscures genuine solutions, undermines diversification strategies, drowns out voices of stakeholders, shifts the blame to consumers and escapes culpability. In undertaking such so-called corporate social responsibility (CSR) activities, the transnational tobacco companies give the impression that they are joining the rest of the business community in supporting a cause, thereby diverting attention from the fact that tobacco production is not like any other business—tobacco products are unique in that they provide no health or social benefit, kill eight (8) million people annually³⁶ and cost the global economy US \$1.4 trillion every year.³⁷ Publicity of its so-called CSR, in addition to being a violation of many tobacco sponsorship bans around the world, also gives a false impression that the tobacco industry can be relied on to undertake voluntary due diligence practices on its supply chain;³⁸ when the World Health Organization Framework Convention on Tobacco Control (WHO FCTC) provides that the tobacco industry must be strictly regulated by governments and cannot be trusted to provide any form of self-regulation. Consistent with expert recommendations³⁹ and good practices, the WHO FCTC guidance recommends strong government regulation and frameworks, independent research and diversification, that are sustainably financed and protected from tobacco industry interference.⁴⁰

1. Tobacco companies' so-called CSR initiatives divert attention from tobacco's devastating impact on the environment.^{41, 42}

The so-called CSR programs of tobacco companies in the area of the environment such as tree planting, beach clean-ups,⁴³ etc., have been exposed as a means to divert attention from real issues—keeping products flawed, failing to take

responsibility for their products throughout their life cycle, keeping tobacco prices low, denying bargaining powers to workers and encouraging expansion into more fertile soil and use of toxic agrochemicals.⁴⁴ Tobacco audit regimes⁴⁵ are illusive, effectively perpetuating the problem.⁴⁶ They obscure the extent of environmental harm and responsibility⁴⁷ and violate Article 5.3 of the WHO FCTC.

Tobacco companies admit that cigarette butts are the most widely littered product,⁴⁸ with 4-5 trillion of them discarded annually, which take up to 15 years to degrade.⁴⁹ As a response, occasional ocean clean-ups are funded by companies with a reminder that consumers are at fault for littering, without taking responsibility for toxins that continue to be released into the environment during the decomposition of their poorly designed product.⁵⁰ Notably, even their “biodegradable butts” harm aquatic life.⁵¹

While claiming to have complied with environmental regulations in developed countries, tobacco companies have largely shifted manufacturing to low- and middle-income countries where the bulk of tobacco is grown and produced,⁵² to escape accountability and avoid strict environmental regulations.⁵³ Because tobacco accounts for 2 million tons of solid waste annually,⁵⁴ environmental harms are exacerbated in low- and middle-income countries due to poor waste management,⁵⁵ polluted water systems⁵⁶ and deforestation.^{57, 58}

2. The tobacco industry's public relations (PR) strategies around the environment obscure internationally-agreed solutions to address the environmental impact of tobacco production.

The tobacco industry's so-called contributions to the environment, such as promoting “tree planting,” drowns out the true solutions to protect the environment and restore the ecosystem, while publicizing its supposed “sustainable practices.” These efforts fail to support any of the policy options that the international community has agreed on in order to address the environmental impact of tobacco production. It involves synergistically implementing Articles 17 (provision

of support for economically viable alternative activities) and 18 (protection of environment and the health of persons) of the WHO FCTC, primarily calling for **farmer-and worker-driven policies and programs towards diversification that are sustainably financed and protected from tobacco industry interference**.⁵⁹ These are intended to address, among other things, deforestation, land degradation and child labor. For example, practices of shifting from tobacco to tomatoes⁶⁰ or bamboo⁶¹ have promoted positive land use, reduced carbon emissions and increased profitability of the land, while also supporting biodiversity.⁶²

In addition, experts also call for the improvement/enforcement of environmental regulations that may apply to tobacco such as extended producer responsibility schemes, engaging litigation and economic interventions to recover the costs of industry misconduct and environmental damages and elimination of single use plastics/filters.⁶³ The tobacco industry's CSR initiatives are not responsive to these solutions.

3. Tobacco companies shift the blame of environmental harm to consumers.⁶⁴

The tobacco industry's CSR strategy on addressing environmental harm focuses on outwardly flaunting its "tree planting projects" and "clean manufacturing processes" while promoting awareness about the cigarette butt litter problem by providing ash trays and trash bins in public places and contributing to ocean clean-ups. The message conveyed by the tobacco industry is clear: "We have a clean backyard" and "the problem is how smokers throw out the trash, but we are helping with that." This message obscures the fact that littering is due to the cigarette filter itself, which is designed by tobacco companies, and they have a responsibility for such a flawed design of this deadly and addictive product.

Tobacco products are highly addictive and over 70% who smoke want to quit.⁶⁵ Consumers, after having been enticed with a lethal product and burdened with addiction, are being held accountable by the tobacco companies for littering their products. Instead of placing the responsibility on consumers, the responsibility for the product throughout its lifecycle

must be placed on the tobacco manufacturers. This is also called Extended Producer Responsibility (EPR).⁶⁶ Among other things, proponents recommend various measures to enable cost recovery schemes to fund enforcement of environment laws, suggesting that the tobacco companies pay for environmental harms through "polluter pays" schemes.⁶⁷ Other related measures recommended under this concept cover a range of principles embodied in Article 19 and Article 5.3 of the WHO FCTC, such as charging fees to the tobacco industry for clean-ups, litigating for damages and enacting laws to make producers and sellers, and not consumers, ultimately responsible for harms.^{68, 69}

4. Tobacco industry-funded research is self-serving, intended to protect it from liability, not accountability.

Tobacco industry reports severely underestimate the adverse impact of tobacco on the environment.⁷⁰ For instance, tobacco multinationals' estimates of fuel wood consumption used in tobacco production is exceedingly low, estimating a specific fuel consumption (SFC) index of 7.8 kg of wood/kg of tobacco compared with previous estimates of 100 kg to 230 kg of wood/kg of tobacco.⁷¹ Further the annual global impact on deforestation estimated to be 5%, but possibly as high as 30% in some countries, was revealed only in independent studies.⁷²

Notably, the tobacco industry's litter studies claiming excessive smuggling rates are used to aid tobacco companies in countering tax increases, and appears to be a self-preservation technique. Disowning the large amount of cigarette butts by claiming they are illicit also reduces the potential liability of tobacco companies for the damages relating to clean-ups and environmental toxins released in the oceans.

5. The tobacco industry's practice of incentivizing tobacco production and undermining diversification strategies keeps farmers addicted to tobacco farming, which is detrimental to the environment.

As part of its core business and supply chain, tobacco companies provide a false impression that they are supportive of tobacco farming⁷³ and its related communities, hence providing so-called CSR initiatives for technical and financial support

for farming. However, incentivizing tobacco farming goes against diversification, which is a key solution to addressing the health and environmental harms of tobacco.⁷⁴

Financial arrangements contrived by the tobacco industry are structured to keep farmers addicted to tobacco farming.⁷⁵ Some of the incentives provided by tobacco companies, such as loans, are meant to continually lure tobacco farmers and workers into tobacco production and keep them dependent on it,⁷⁶ and ultimately, constantly indebted.⁷⁷ Growing tobacco is up to 10 times more aggressive in causing deforestation than other crops.⁷⁸

6. Tobacco companies' front groups and so-called CSR drown out the voices of farmers and workers impacted by environmental harms.

Global consensus and treaty policy dictates that tobacco companies have no place in policymaking related to agricultural diversification, and that such efforts must be driven by workers/farmers.⁷⁹ However, tobacco farmers and workers directly affected in tobacco production and involved in environmental harms are poorly represented. This is aggravated by the fact that companies have set up and funded front groups like the International Tobacco Growers' Association (ITGA)⁸⁰ to lobby on their behalf,⁸¹ in order to falsely represent farmers' socio-economic arguments⁸²⁻⁸⁵ as basis to challenge tobacco control measures such as tax increases.⁸⁶

Tobacco workers have accused tobacco companies of drowning out their voices with false promises during discussions around the value of the tobacco industry-funded Eliminating Child Labour in Tobacco Growing (ECLT) Foundation.⁸⁷ Furthermore, the tobacco industry took up stakeholder space in discussions on diversification through the Philip Morris-funded Foundation for a Smoke-Free World (FSFW)'s Agriculture Transformation Initiative (ATI),⁸⁸ despite the need to protect agricultural and environmental policies on tobacco from the commercial and vested interests of the tobacco industry, in line with Article 5.3 of the WHO FCTC.





7. Tobacco companies resist paying for environmental harms despite the legal and rational basis to do so.

Tobacco growing leads to ecosystem disruptions and accounts for 5-30% of deforestation,⁵⁷ a leading cause of greenhouse gas emissions.⁵⁸ The production yields 2 million tons of solid waste annually,⁵² leading to polluted water systems,⁵⁶ compounded by poor waste management systems.⁵⁵ The poorly designed cigarette butts cause fires and continuously harm ocean life for decades. Engaging in litigation and economic interventions to recover the costs of industry misconduct and environmental damages is a key solution that experts recommend to address tobacco's environmental harms.⁸⁹ This is consistent with Article 19 of the WHO FCTC to deal with tobacco industry liability including compensation. Yet, the tobacco industry has avoided responsibility for environmental harms by moving its operations into jurisdictions that have less stringent or lax regulations. For example, as a response to complaints of air pollution and calls for stricter regulation of tobacco in Uganda, British American Tobacco (BAT) moved its facilities to Kenya.⁹⁰

Despite the extent of environmental damage assessed, no litigation holding the tobacco company accountable for harms has been filed.⁹¹ Article 6 of the WHO FCTC (price and tax measures to reduce demand for tobacco) takes into account the need to make the tobacco industry pay for negative externalities through increased tobacco taxation. In line with this, a few countries already impose surcharges and fees consistent with the "polluter pays" principle.^{92, 93} The tobacco companies have resisted any form of tobacco tax increase⁹⁴ including those that require earmarking of proceeds to pay for tobacco harms. Tobacco companies have resisted policies that make the tobacco industry pay for clean-up costs,⁹⁵ including those that are under consideration in the European Union,⁹⁶ France,⁹⁷ Ireland,⁹⁸ the United Kingdom⁹⁹ and the United States of America.¹⁰⁰

Annex




How the Tobacco Industry Hinders UN's Sustainable Development Goals (SDGs) Relating To The Environment

SDG	Tobacco companies claim to...	In reality, tobacco companies...
<p>6. Clean water & sanitation</p> 	<p>Promote water recycling, protect watersheds, and promote sustainable water management</p>	<p>Pollute waterways and threaten aquatic life through cigarette filters and pesticides.</p> <ul style="list-style-type: none"> Cigarette butts, which are often dumped into oceans, lakes and other water sources, have toxic substances with implications for the quality of drinking water.
<p>12. Responsible consumption & production</p> 	<p>Reduce the environmental impact of their products, including recycling and litter-prevention programs</p>	<p>Generate 1.69 billion pounds of toxic waste each year releasing thousands of chemicals into the air, water and soil.</p> <ul style="list-style-type: none"> Over 4.5 trillion cigarette butts are not disposed of properly, making them the most littered item on the planet.
<p>13. Climate action</p> 	<p>Mitigate risks of climate change through carbon neutral programs</p>	<p>Shirk responsibility for compensating for the environmental harm caused by its business, including a deforestation rate of 200,000 hectares a year.</p> <ul style="list-style-type: none"> Tobacco companies routinely downplay their environmental harm.
<p>14. Life below water</p> 	<p>Reduce the environmental impact of products, including through litter prevention, and ensure effluents released are within government regulations</p>	<p>Find ways to continue their business practices that harm aquatic systems.</p> <ul style="list-style-type: none"> Tobacco companies provide campaign donations that allow cigarette butts to go unregulated despite being the single most collected trash in beach clean-ups. They also pollute waterways and threaten aquatic life through cigarette filters and pesticides.

Source: Sy D, Castillo C, Trivino D. How tobacco industry interference hinders the UN Sustainable Development Goals. Issue Brief. STOP (September 2020).

Annex

How the Tobacco Industry Hinders UN's Sustainable Development Goals (SDGs) Relating To The Environment

SDG	Tobacco companies claim to...	In reality, tobacco companies...
<p>15. Life on land</p> 	<p>Protect biodiversity, particularly in affected forested areas</p>	<p>Conduct so-called environmental activities to detract attention from liability for environmental harm.</p> <ul style="list-style-type: none"> • Tobacco farming and cultivation causes the irreversible loss of trees and biodiversity. • Clearing land for tobacco growing and cigarette-related forest fires leads to deforestation.
<p>16. Peace, justice & strong institutions</p> 	<p>“Combat illicit trade in tobacco products,”⁷ support the rule of law and transparency</p> <p>Be against the “illegitimate tobacco industry” that can “erode the rule of law and upset peaceful existence by financing the operations of criminal networks”⁸</p>	<p>Lobby and bribe policymakers to favor commercial interests and weaken, delay or completely frustrate implementation of lifesaving measures through litigation against governments or outright circumvention of its provisions.</p> <ul style="list-style-type: none"> • The major tobacco transnationals have been found to be complicit in illicit trade; a vast majority of illicitly trafficked cigarettes are “illicit whites” or legitimately produced products that find their way into illicit markets.
<p>17. Partnerships for the goals</p> 	<p>Be a partner in health, despite conflicts of interest, in order to promote alternative products</p> <p>Partner with governments to fight illicit trade</p>	<p>Influence policymakers to water down life-saving measures (including raising taxes and banning advertising, promotions and sponsorship) in favor of commercial interests in dangerous, addictive products, effectively undermining efforts to achieve the SDGs.</p> <ul style="list-style-type: none"> • The tobacco industry’s CSR activities related to SDGs are designed to enhance its public image and induce tax exemptions. • Tobacco companies cause violation of treaty laws, which disapprove of partnerships with the tobacco industry in general, and especially on efforts to fight illicit trade.

Source: Sy D, Castillo C, Trivino D. How tobacco industry interference hinders the UN Sustainable Development Goals. Issue Brief. STOP (September 2020).

References

1. Although cigarette filters eventually decompose into smaller pieces, their toxic components and plastic pieces may never disappear from water and soil and can continue to leach chemicals for up to 10 years.
See: Thomas E. Novotny & Elli Slaughter. Tobacco Product Waste: An Environmental Approach to Reduce Tobacco Consumption. Current Environment Health Report (2014) 1:208–216 (6 May 2014). Available at: <https://link.springer.com/content/pdf/10.1007/s40572-014-0016-x.pdf>
2. PMI conducted a cigarette butt litter survey in 2020. The survey revealed:
 - i. 25 percent of adult smokers throw cigarette butts to the ground because they think it is normal to dispose a cigarette in this manner. Every one in eight individuals in the survey said they don't think its polluting.
 - ii. Smokers identified in the survey said they smoke 11 cigarettes per day, of which 60% are smoked outdoors, thereby creating ample chances of littering.
 - iii. Only 13% of individuals correctly identified plastic as the main component of cigarette filters.The main constituent of cigarette filters is 'cellulose acetate', a bio-plastic that takes anything from three months to 15 years to decompose. This was also acknowledged in the PMI Integrated Report 2020.
3. Slaughter, Elli et al. "Toxicity of cigarette butts, and their chemical components, to marine and freshwater fish." Tobacco control vol. 20 Suppl 1, Suppl_1 (May 2011):i25-9. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3088407/#:~:text=Background,in%20cigarettes%20prepared%20for%20consumption.>
4. Geist HJ. Global assessment of deforestation related to tobacco farming. Tobacco Control (March 1999); 8:18-28. Available at: <https://tobaccocontrol.bmj.com/content/8/1/18>
5. Lecours N, Almeida GEG, Abdallah JM, et al. Environmental health impacts of tobacco farming: a review of the literature. Tobacco Control (February 2012);21:191-196. Available at: <https://tobaccocontrol.bmj.com/content/21/2/191>
6. In Cambodia, tobacco farmers buy firewood for curing tobacco. They also cut and use fuel wood as well as rubber trees, a useful economic product, for tobacco curing. In Kenya, soil erosion, widespread deforestation, cutting of indigenous trees for curing, water pollution as well as change in flow patterns of local streams have been documented, all due to tobacco plantations. In Brazil, reduced forest land cover, soil depletion as well as abundant agrochemical residues in waterways located close to tobacco cultivating communities were found, severely impacting natural hydrological systems.
See: Lecours N, Almeida GEG, Abdallah JM, et al. Environmental health impacts of tobacco farming: a review of the literature. Tobacco Control (February 2012);21:191-196. Available at: <https://tobaccocontrol.bmj.com/content/21/2/191>
7. "Article 2 of the Convention on Biological Diversity defines an 'ecosystem' as a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit".
See: Convention on Biological Diversity (CBD) (1992). Article 2 Use of Terms. Available at: <https://www.cbd.int/kb/record/article/6872?RecordType=article>
"The term 'ecosystem' can refer to any functioning unit at any scale which is determined by the problem being addressed."
See: Convention on Biological Diversity (CBD). (no date). Description. Available at: <https://www.cbd.int/ecosystem/description.shtml>
"Ecosystem restoration is defined as a process of reversing the degradation of ecosystems, such as landscapes, lakes and oceans to regain their ecological functionality; in other words, to improve the productivity and capacity of ecosystems to meet the needs of society. This can be done by allowing the natural regeneration of overexploited ecosystems or by planting trees and other plants".
See: New UN Decade on Ecosystem Restoration offers unparalleled opportunity for job creation, food security and addressing climate change opportunity. UNEP (2019). Available at: <https://www.unep.org/news-and-stories/press-release/new-un-decade-ecosystem-restoration-offers-unparalleled-opportunity>
"The objective of ecosystem restoration is to contribute to the conservation and sustainable use of biodiversity as well as create social, economic and environmental benefits, whereby healthy and connected ecosystems should contribute to improve food and water security, peoples' livelihoods and to mitigate and adapt to climate change."
See: 'Decision XIII/5. Ecosystem restoration: short-term action plan', in, p. 10. CBD (2019). Available at: <https://www.cbd.int/doc/decisions/cop-13/cop-13-dec-05-en.pdf>
"Ecosystem restoration substantially supports the objectives of international agreements and global objectives, including the Sustainable Development Goals (specifically Target 6, 14, and 15), the Strategic Plan for Biodiversity 2011-2020 (specifically Target 15), the Paris Agreement, the Land Degradation Neutrality goal, the Global Forest Goals, and the Ramsar Convention on Wetlands."
See: What is ecosystem restoration? International Union for Conservation of Nature (no date). Available at: https://www.iucn.org/sites/dev/files/content/documents/what_is_ecosystem_restoration.pdf
8. In low- and middle-income countries, land clearing for tobacco cultivation has depleted forest reserves. In Tanzania, expanding cultivations can only be done by clearing virgin forest lands for their increased yield and disease-free soil. According to Abdallah et al, 69% of tobacco cultivators in Urambo District clear new woodland every season for tobacco farming and only 25% of them grow on the same area for two successive seasons, while only a mere 6% do so for more than two successive seasons. This type of 'shifting cultivation' accounts for 96% of deforestation in the area, making tobacco farming a massive threat to forest biomes.
See: Lecours N, Almeida GEG, Abdallah JM, et al. Environmental health impacts of tobacco farming: a review of the literature. Tobacco Control (February 2012);21:191-196. Available at: <https://tobaccocontrol.bmj.com/content/21/2/191>
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14. Waste generated from cartons and cigarette packaging alone generates 2 million tonnes of solid waste annually. These figures are comparable with 1.83 million tonnes of plastic waste generated annually by plastic water bottles.
See: Novotny, Thomas E et al. "The environmental and health impacts of tobacco agriculture, cigarette manufacture and consumption." *Bulletin of the World Health Organization* vol. 93,12 (December 2015): 877-80. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4669730/>
15. There is increased risk of dying from heart diseases and lung cancer due to exposure from ambient fine particulate matter (PM2.5) caused by air pollution. This risk is higher for smokers because PM 2.5 synergistically combined with smoking increases mortality.
See: Discussion Paper: The WHO Framework Convention on Tobacco Control: An Accelerator for Sustainable Development. United Nations Development Programme (May 2017). Retrieved from <https://www.who.int/fctc/implementation/publications/who-fctc-undp-wntd-2017.pdf>
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17. "Most cigarettes are lit using matches or gas-filled lighters. If, for example, one wooden match is used to light two cigarettes, the six trillion cigarettes smoked globally each year would require the destruction of about nine million trees to produce three trillion matches."
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"As a major factor contributing to crop-specific deforestation, the global mean of flue-cured produce using wood is only about 12%, but increases to a mean 62% in the producer countries with minor-to-serious tobacco-related deforestation."
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25. Ocean Conservatory, International Coastal Cleanup Report 2015.; United Nations Development Programme. Available at: <https://oceanconservancy.org/wp-content/uploads/2017/04/2015-Ocean-Conservancy-ICC-Report.pdf>

26. "In Nueva Segovia department of Nicaragua, where most tobacco farms are close to important rivers, researchers found pesticide contamination in both the superficial aquifer and deep groundwater. Studies in Brazil have found excessive agrochemical residues in waterways near tobacco farming communities."
See: Discussion Paper: The WHO Framework Convention on Tobacco Control: An Accelerator for Sustainable Development. WHO Framework Convention on Tobacco Control and United Nations Development Program (26 May 2017). Available at: <https://www.who.int/ctc/implementation/publications/who-ctc-undp-wntd-2017.pdf>
27. "There are also environmental impacts of manufacturing and disposing of the plastic, metal and butane used in making cigarette lighters."
See: Novotny, Thomas E et al. "The environmental and health impacts of tobacco agriculture, cigarette manufacture and consumption." *Bulletin of the World Health Organization* vol. 93,12 (December 2015): 877-80. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4669730/>
28. The tobacco industry is very much aware of the scope and extent of environmental harms it causes. For example, Philip Morris International (PMI) acknowledged that selling of electronic smoking devices leads to worsening of the water and energy used (PMI, 2016). The Lifecycle Analysis reports by PMI for the so-called reduced risk products (RRRs) clearly showed the impact of product development, manufacturing and distribution on their ecological footprint (PMI, 2017). The tobacco industry has refused to implement practices that could reduce the waste generated from manufacture and disposal of their products. Cigarette filters have been proven to do more harm than good to both health and the environment. They were developed as a consequence of growing fears in consumers regarding health harms of cigarette use and are, in reality, unnecessary appendages to the cigarette. Yet, the industry has done nothing to reduce its ecological impact of cigarette production, use and disposal.
See: Hendlin, Y.H., Bialous, S.A. The environmental externalities of tobacco manufacturing: A review of tobacco industry reporting. *Ambio* 49, 17–34 (January 2020). Available at: <https://link.springer.com/article/10.1007/s13280-019-01148-3#citeas>
See also: "Unlike petrochemical-derived plastic products such as straws and plastic cutlery, cigarette filters do biodegrade, but not quickly enough currently to avoid any short-term littering problems." -BAT, Integrated Report 2020
29. "Electronic cigarettes may contain batteries that require special disposal as well as chemicals, packaging and other non-biodegradable materials. The US Federal Emergency Management Agency (FEMA) has expressed concerns about the flammability and lack of product regulation of electronic cigarettes and their components." See: Novotny, Thomas E et al. The environmental and health impacts of tobacco agriculture, cigarette manufacture and consumption. *Bulletin of the World Health Organization* [online]. 2015, v. 93, n. 12, pp. 877-880. Available from: <https://www.who.int/bulletin/volumes/93/12/15-152744/en/>
30. "Regulations requiring cigarettes to self-extinguish in Canada and the USA were associated with a 30% decline in fire-related deaths from 2003 to 2011."
See: Novotny, Thomas E et al. "The environmental and health impacts of tobacco agriculture, cigarette manufacture and consumption." *Bulletin of the World Health Organization* vol. 93,12 (December 2015): 877-80. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4669730/>
31. "Cigarettes remain an important cause of accidental fires and resulting deaths. In the United States of America, cigarettes have been responsible for 8–10% of all fires over the past 10 years (on average 90000 fires per year); they also remain the single most important cause of deaths related to fires (540 of 2855 total deaths in 2011)." See: Novotny, Thomas E et al. "The environmental and health impacts of tobacco agriculture, cigarette manufacture and consumption." *Bulletin of the World Health Organization* vol. 93,12 (December 2015): 877-80. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4669730/>
32. Rachel Koning Beals. Coca-Cola, PepsiCo and Nestlé top '10 worst plastic polluters' of 2020. *Market Watch* (8 December 2020). Available at: <https://www.marketwatch.com/story/coca-cola-pepsico-and-nestle-top-10-worst-plastic-polluters-of-2020-11607465840>
33. For example: "PMI partners, supports, participates, and is a member of sustainability related initiatives and organizations such as the World Business Council for Sustainable Development (WBCSD), Business for Social Responsibility (BSR), CSR Europe, and the We Mean Business coalition, which harness the power of collaboration to implement solutions at scale." (PMI Integrated Report 2020) "For decades, we have invested in developing and testing products with the aim of replacing cellulose acetate filters alongside our suppliers. We have commissioned more than 20 different projects exploring the potential development of such alternatives. There are strict requirements to be met before we can roll out any alternatives." (BAT Integrated Report 2020) "[Key issues in 2020] Environment: (a) Supporting the TCFD (Task Force on Climate-related Financial Disclosures) and (b) the appropriate use and responsible disposal of materials, including plastics, used in our products and packaging." (JTI Integrated Report 2020) "The tobacco sector has been one of the leaders in promoting sustainability and good agricultural practices (GAP). These subjects are central to the debates, discussions and decision-making processes between ITGA and sectoral bodies such as CORESTA, the international Scientific Research Committee on Tobacco." (ITGA, Environmental Aspects)
34. FTSE 100 – the 5 highest ESG rated companies.
See: Sophie Lund-Yates, Equity Analyst. Hargreaves Lansdown (3 March 2021). Available at: <https://www.hl.co.uk/news/articles/ftse-100-the-5-highest-esg-rated-companies>
See also: Philip Morris International Recognized Among World's Top Sustainable Businesses with "Triple A" Score from CDP. *BusinessWire India* (10 December 2020). Available at: <https://www.businesswireindia.com/philip-morris-international-recognized-among-worlds-top-sustainable-businesses-with-triple-a-score-from-cdp-70732.html>
35. "tobacco industry's efforts to reduce their environmental harms amount to CSR initiatives displaying a lack of transparency and independent verification, that limit objective assessment of the environmental impact of tobacco manufacturing."
See: Hendlin, Y.H., Bialous, S.A. The environmental externalities of tobacco manufacturing: A review of tobacco industry reporting. *Ambio* 49, 17–34 (January 2020). Available at: <https://link.springer.com/article/10.1007/s13280-019-01148-3>
See also: Sustainable supply chain management - Progress in 2019. Philip Morris International. Available at: <https://www.pmi.com/integrated-report-2019/operating-with-excellence/sustainable-supply-chain-management---progress-2019>
See also: Sustainable Tobacco Programme. British American Tobacco. Available at: [https://www.bat.com/group/sites/ukmedMDAZRHPC.pdf?openelement9d9kcy.nsf/vwPagesWebLive/DO9QEGXN/\\$FILE/](https://www.bat.com/group/sites/ukmedMDAZRHPC.pdf?openelement9d9kcy.nsf/vwPagesWebLive/DO9QEGXN/$FILE/)
See also: Sustainability- Respecting Human Rights. Japan Tobacco. Available at: https://www.jt.com/sustainability/human_rights/index.html
36. WHO Report on the Global Tobacco Epidemic, 2019. Geneva: World Health Organization (25 July 2019). Licence: CC BY-NC-SA 3.0 IGO. Available at: <https://www.who.int/teams/health-promotion/tobacco-control/who-report-on-the-global-tobacco-epidemic-2019>

37. "The total economic cost of smoking (from health expenditures and productivity losses together) totalled PPP \$1852 billion (US\$1436 billion) in 2012, equivalent in magnitude to 1.8% of the world's annual gross domestic product (GDP). Almost 40% of this cost occurred in developing countries, highlighting the substantial burden these countries suffer."
See: Goodchild M, Nargis N, Tursan d'Espaignet E. Global economic cost of smoking-attributable diseases. *Tobacco Control* (2018);27:58-64. Available at: <https://tobaccocontrol.bmj.com/content/27/1/58>
38. "tobacco industry's efforts to reduce their environmental harms amount to CSR initiatives displaying a lack of transparency and independent verification, that limit objective assessment of the environmental impact of tobacco manufacturing."
See: Hendlin, Y.H., Bialous, S.A. The environmental externalities of tobacco manufacturing: A review of tobacco industry reporting. *Ambio* 49, 17–34 (January 2020). Available at: <https://link.springer.com/article/10.1007/s13280-019-01148-3>
See also: Sustainable supply chain management - Progress in 2019. Philip Morris International. Available at: <https://www.pmi.com/integrated-report-2019/operating-with-excellence/sustainable-supply-chain-management---progress-2019>
See also: Sustainable Tobacco Programme. British American Tobacco. Available at: [https://www.bat.com/group/sites/ukmedMDAZRHPC.pdf?openelement9d9kcy.nsf/vwPagesWebLive/DO9QEGXN/\\$FILE/](https://www.bat.com/group/sites/ukmedMDAZRHPC.pdf?openelement9d9kcy.nsf/vwPagesWebLive/DO9QEGXN/$FILE/)
See also: Sustainability- Respecting Human Rights. Japan Tobacco. Available at: https://www.jt.com/sustainability/human_rights/index.html
39. Novotny and Thomas et al. propose seven policy recommendations and suitable alternatives to tobacco production which are more environmentally-oriented. First, identify and monitor health effects associated with tobacco production. Second, support farmers and their children in freeing themselves from the unsafe and unfair agricultural practices. Third, tighten tobacco production regulations to prevent further deforestation and land degradation. Fourth, implement extended producer responsibility (EPR) on the tobacco industry to reduce and prevent waste. Fifth, extend tobacco sale regulations to eliminate use of single-use filters, including biodegradable ones, to reduce waste. Sixth, recover the cost of industry misconduct and environmental damages through litigation and economic interventions. Seventh, improve and enforce environmental regulations and agreements that can be applied to tobacco manufacturing, transport and management of post-consumption waste.
See: Novotny, Thomas E et al. "The environmental and health impacts of tobacco agriculture, cigarette manufacture and consumption." *Bulletin of the World Health Organization* vol. 93,12 (December 2015): 877-80. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4669730/>
See also: "Because tobacco's particular harm to human and environmental health, and the non-essential status of the product, mandating data transparency for tobacco manufacturing warrants prioritization. Policies to provide a mechanism for outside accounting could consider tobacco product taxes to account for environmental impact, and then allow independent auditing of the tobacco industry using state funds, creating a financial firewall between industry and CSR assurance agencies."
See: Hendlin, Y.H., Bialous, S.A. The environmental externalities of tobacco manufacturing: A review of tobacco industry reporting. *Ambio* 49, 17–34 (January 2020). Available at: <https://link.springer.com/article/10.1007/s13280-019-01148-3>
40. Policy options and recommendations on economically sustainable alternatives to tobacco growing (in relation to Articles 17 and 18). Conference of the Parties, sixth session and WHO Framework Convention on Tobacco Control decision; FCTC/COP6(11) (2014). Available at: https://www.who.int/fctc/treaty_instruments/Recommendations_Articles_17_18_English.pdf?ua=1%22
41. Forthcoming paper 'Towards Health with Justice 2' by World Health Organization Regional Office for the Eastern Mediterranean.
42. Doubtful Campaign Against Stray Butts. The Plastic Soup Foundation (2015) [unofficial translation]. Available at: <https://www.plasticsoupfoundation.org/2015/05/dubieuze-campagne-tegen-zwerfpeuken/>
See also: Environmental program VARA gives the tobacco lobby a podium. *Tabaknee Netherlands* (23 March 2016) [unofficial translation]. Available at: <https://www.tabaknee.nl/nieuws/item/847-milieuprogramma-vara-geeft-tabakslobby-podium>
43. Keep America Beautiful (KAB) is funded by Philip Morris USA, an Altria company as well as Reynolds American International and Santa Fe Natural Tobacco Company, companies under British American Tobacco; and runs programs such as 'Cigarette Litter Prevention Programme'. KAB has been criticised for being a corporate greenwashing front group. Unsmoke Canada Cleanups is another initiative that organises litter clean-ups. It is funded by Rothmans, Benson & Hedges Inc., a Philip Morris International subsidiary.
See: Greenwashing. *Tobacco Tactics* (21 December 2020). Available at: <https://tobaccotactics.org/wiki/greenwashing/>
See also: KAB funds informational and educational tools on littering. Its Cigarette Litter Prevention Program includes enforcing litter laws, raising awareness, placing ash receptacles at public places and distributing pocket or portable ashtrays.
See: Cigarette Litter Prevention Program by Keep America Beautiful.
44. The tobacco industry's response to such environmental harms was to work with agricultural front groups and partnering with renowned organisations in order to lobby against tobacco control measures. Through these front groups such as ITGA, tobacco companies worked with sympathetic businessmen and politicians. The tobacco companies also encouraged excessive use of hazardous agrochemicals as well as shifting cultivation to virgin fertile lands. Their deceptive CSR programs shift attention away from real issues, such as keeping tobacco prices very low, socio-economic inequalities, child labour, health hazards, undermining the voices of farmers, instead of addressing them.
See: Lecours N, Almeida GEG, Abdallah JM, et al. Environmental health impacts of tobacco farming: a review of the literature. *Tobacco Control* (February 2012);21:191-196. Available at: <https://tobaccocontrol.bmj.com/content/21/2/191>
45. Sustainable supply chain management - Progress in 2019. Philip Morris International. Available at: <https://www.pmi.com/integrated-report-2019/operating-with-excellence/sustainable-supply-chain-management---progress-2019>
Sustainable Tobacco Programme. British American Tobacco. Available at: [https://www.bat.com/group/sites/ukmedMDAZRHPC.pdf?openelement9d9kcy.nsf/vwPagesWebLive/DO9QEGXN/\\$FILE/Sustainability-RespectingHumanRights.JapanTobacco.pdf](https://www.bat.com/group/sites/ukmedMDAZRHPC.pdf?openelement9d9kcy.nsf/vwPagesWebLive/DO9QEGXN/$FILE/Sustainability-RespectingHumanRights.JapanTobacco.pdf)
See also: "tobacco industry's efforts to reduce their environmental harms amount to CSR initiatives displaying a lack of transparency and independent verification, that limit objective assessment of the environmental impact of tobacco manufacturing."
See: Hendlin, Y.H., Bialous, S.A. The environmental externalities of tobacco manufacturing: A review of tobacco industry reporting. *Ambio* 49, 17–34 (January 2020). Available at: <https://link.springer.com/article/10.1007/s13280-019-01148-3>

46. As highlighted in the report by Genevieve et al., auditing as a mechanism of transnational governance is exclusionary and failing. Audit regimes designed to work for corporations have begun to gain acceptance, despite a failure to detect underlying issues that, if addressed, can lead to far more beneficial changes to environmental as well as labour standards. Regulatory authority by governments and NGOs call for ethical audit mechanisms as an effective means of governing global change. However, auditing is helping retailers legitimize and expand their businesses as well as increase their supply chain, while also advancing their social license to operate while maintaining a 'responsible' image. It is also helping retailers monitor over their decentralized system of global production, thus perpetuating the cycle of inequality, corporate power, environmental harms and more; and creates only an illusion of the global supply chain rather than portray its dark reality. While the pressure for an accountable and transparent approach to corporate functioning has been increasing, these audit regimes are being used to preserve the retail business models which focus on cheap labour, cheap goods, low prices and short-term purchase contracts.
See: Genevieve LeBaron, Jane Lister & Peter Dauvergne (2017) Governing Global Supply Chain Sustainability through the Ethical Audit Regime, *Globalizations*, 14:6, 958-975. Available at: <https://www.tandfonline.com/doi/full/10.1080/14747731.2017.1304008>
47. Instead of exhibiting authentic CSR, the tobacco companies use such programs, especially in the production sector, to ward-off tobacco control regulations.
See: The environmental externalities of tobacco manufacturing: A review of tobacco industry reporting. Hendlin, Y.H., Bialous, S.A. *Ambio* 49, 17-34 (2020). Available at: <https://link.springer.com/article/10.1007/s13280-019-01148-3>
48. Ocean Conservancy, International Coastal Cleanup Report 2015.; United Nations Development Programme. Available at: <https://oceanconservancy.org/wp-content/uploads/2017/04/2015-Ocean-Conservancy-ICC-Report.pdf>
Cited in: Discussion Paper: The WHO Framework Convention on Tobacco Control: An Accelerator for Sustainable Development. WHO Framework Convention on Tobacco Control and United Nations Development Program (26 May 2017). Available at: <https://www.who.int/fctc/implementation/publications/who-fctc-undp-wntd-2017.pdf>
49. Slaughter, Elli et al. "Toxicity of cigarette butts, and their chemical components, to marine and freshwater fish." *Tobacco control* vol. 20 Suppl 1, Suppl_1 (2011): i25-9. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3088407/#:~:text=Background,in%20cigarettes%20prepared%20for%20consumption.>
50. Although cigarette filters eventually decompose into smaller pieces, their toxic components and plastic pieces may never disappear from water and soil and can continue to leach chemicals for up to 10 years.
See: Novotny, T.E., Slaughter, E. Tobacco Product Waste: An Environmental Approach to Reduce Tobacco Consumption. *Curr Envir Health Rpt* 1, 208-216 (May 2014). Available at: <https://link.springer.com/article/10.1007/s40572-014-0016-x>
See also: PMI conducted a cigarette butt litter survey in 2020. The survey revealed
i. 25 percent of adult smokers throw cigarette butts to the ground because they think it is normal to dispose a cigarette in this manner. Every one in eight individuals in the survey said they don't think its polluting.
ii. Smokers identified in the survey said they smoke 11 cigarettes per day, of which 60% are smoked outdoors, thereby creating ample chances of littering.
iii. Only 13% of individuals correctly identified plastic as the main component of cigarette filters.
The main constituent of cigarette filters is 'cellulose acetate', a bio-plastic that takes anything from three months to 15 years to decompose. This was also acknowledged on the PMI Integrated Report 2020.
51. "Effects of leachate from cellulose acetate vs cellulose cigarette butts were tested." "Cigarette butt leachate (5 butts L-1) was acutely toxic to freshwater invertebrates." "After 120 h leachate from 1 butt L-1 killed 60% of juvenile B. tentaculate".
"There was a decrease in activity in invertebrates exposed to 1 butt L-1 leachate." "Leachate from biodegradable butts caused the same impact as conventional butts."
See: Dannielle Senga Green, Louise Kregting and Bas Boots. Smoked cigarette butt leachate impacts survival and behaviour of freshwater invertebrates. *Environmental Pollution*, Volume 266, Part 3, 2020, 115286, ISSN 0269-7491 (November 2020). Available at: <https://www.sciencedirect.com/science/article/abs/pii/S0269749120359741>
See also: P. Dilip Venugopal, Shannon K. Hanna, Gregory G. Gagliano and Hoshing W. Chang. No Butts on the Beach: Aquatic Toxicity of Cigarette Butt Leachate Chemicals. *Tobacco Regulatory Science* (Jan 2021); 7(1): 17-30. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7849351/>
52. "With almost 90% of tobacco leaf production and the majority of cigarette consumption now concentrated in the less developed regions, the environmental burden and the many risks associated with tobacco are largely borne by lower-income countries. Thus, for example, while Malawi and Tanzania are among the top 10 tobacco growing countries, they consume less than 5% of the tobacco they produce. At the same time, in the UK, Canada, Portugal, and Austria, with no or very little domestic tobacco leaf or cigarette production, smoking cigarettes, literally means burning other countries' resources."
See: Maria Zafeiridou, Nicholas S Hopkinson and Nikolaos Voulvoulis. Cigarette Smoking: An Assessment of Tobacco's Global Environmental Footprint Across Its Entire Supply Chain. *Environ. Sci. Technol.* 2018, 52, 15, 8087-8094 (3 July 2018). Available at: <https://pubs.acs.org/doi/10.1021/acs.est.8b01533>
53. Hendlin, Y.H., Bialous, S.A. The environmental externalities of tobacco manufacturing: A review of tobacco industry reporting. *Ambio*; 49, 17-34 (2020). Available at: <https://link.springer.com/article/10.1007/s13280-019-01148-3>
54. Waste generated from cartons and cigarette packaging alone generates 2 million tonnes of solid waste annually. These figures are comparable with 1.83 million tonnes of plastic waste generated annually by plastic water bottles.
See: Novotny, Thomas E et al. "The environmental and health impacts of tobacco agriculture, cigarette manufacture and consumption." *Bulletin of the World Health Organization* vol. 93,12 (December 2015): 877-80. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4669730/>
55. Low- and Middle-income countries tend to have higher smoking rates as a result of targeting by the tobacco industry, and suffer from systemic inequities, making it harder for them to access healthcare, educational tools and cessation resources. In addition, they have inequitable waste management, which can worsen from cigarette butt pollution.
See: Tiny but Deadly: Cigarette Butts Are The Most Commonly Polluted Plastic. *The Great Global Cleanup*. Earth Day (28 August 2020). Available at: <https://www.earthday.org/tiny-but-deadly-cigarette-butts-are-the-most-commonly-polluted-plastic/>

56. Tobacco growing takes up a lot of water and disperses toxins to waterways.
See: Slaughter, Elli et al. "Toxicity of cigarette butts, and their chemical components, to marine and freshwater fish." *Tobacco control* vol. 20 Suppl 1, Suppl_1 (2011): i25-9. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3088407/#:~:text=Background,in%20cigarettes%20prepared%20for%20consumption.>
57. Studies have confirmed the serious threat of deforestation and soil erosion as a result of tobacco cultivation.
See: Sauer, Johannes, and Jumanne M. Abdallah. "Forest diversity, tobacco production and resource management in Tanzania." *Forest Policy and Economics* 9.5 (January 2007): 421-439. Available at: <https://www.sciencedirect.com/science/article/abs/pii/S1389934105001255?via%3Dihub>
See also: Mangora, M.M. Ecological impact of tobacco farming in miombo woodlands of Urambo District, Tanzania. *African Journal of Ecology* (December 2005), 43: 385-391. Available at: https://onlinelibrary.wiley.com/doi/full/10.1111/j.1365-2028.2005.00603.x?casa_token=iyzW6vln700AAAAA%3AvLghnncJRYHivkklpq9Ds1LCPFabAQJBTBGRdzWN2Cxn0j-UjelSFZi-jM4omNy1PbsHIBCRICSeZA
See also: Abdallah, J. M., et al. "Impact of flue-cured Virginia on Miombo woodland: a case of small-scale flue-cured Virginia production in Iringa region, Tanzania." *DiscovInnov* 19 (2007): 92-106. Available at: https://www.researchgate.net/profile/Jumanne-Abdallah/publication/289110125_Impact_of_flue-cured_Virginia_on_Miombo_woodland_A_case_of_small-scale_flue-cured_Virginia_production_in_Iringa_region_Tanzania/links/5fa41c3592851cc28696255d/Impact-of-flue-cured-Virginia-on-Miombo-woodland-A-case-of-small-scale-flue-cured-Virginia-production-in-Iringa-region-Tanzania.pdf
See also: Chapman, S. "Tobacco and deforestation in the developing world." *Tobacco Control* vol. 3,3 (September 1994): 191-193. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1759351/pdf/v003p00191.pdf>
See also: Geist HJ. Global assessment of deforestation related to tobacco farming. *Tobacco Control* (March 1999); 8:18-28. Available at: <https://tobaccocontrol.bmj.com/content/8/1/18>
58. "In 2006, 200 climate change experts warned that, each year, deforestation accounts for 25-30 percent of greenhouse gas emissions globally. More recent estimates which show reductions in the percentage of GHG [green house gases] contributions from deforestation can be misleading, in part because total emissions from all sources including fossil fuels (i.e. the denominator) have risen" Deforestation causes global warming. Key role for developing countries in fighting greenhouse gas emissions. Food and Agriculture Organisation of the United Nations (September 2006). Available at: <http://www.fao.org/newsroom/en/news/2006/1000385/index.html>; Doug Boucher. 10% of Greenhouse Gas Emissions Come from Deforestation. Union of Concerned Scientists (December 2013). Available at: <http://blog.ucsusa.org/doug-boucher/ten-percent-of-greenhouse-gas-emissions-come-from-deforestation-342>
Citing in: Discussion Paper: The WHO Framework Convention on Tobacco Control: An Accelerator for Sustainable Development. WHO Framework Convention on Tobacco Control and United Nations Development Program (26 May 2017). Available at: <https://www.who.int/fctc/implementation/publications/who-fctc-undp-wntd-2017.pdf>
59. Policy options and recommendations on economically sustainable alternatives to tobacco growing (in relation to Articles 17 and 18). Conference of the Parties, sixth session and WHO Framework Convention on Tobacco Control decision; FCTC/COP6(11) (2014). Available at: https://www.who.int/fctc/treaty_instruments/Recommendations_Articles_17_18_English.pdf?ua=1%22
60. In Tanzania, the Global Environment Facility and United Nations Development Programme (UNDP) have helped farmers shift from tobacco farming to growing tomatoes.
See: T. Lee. Country practices in the implementation of Article 17 (Economically sustainable alternatives to tobacco growing) of the WHO Framework Convention on Tobacco Control. WHO FCTC (December 2019). Available at: <https://www.who.int/fctc/implementation/publications/country-practices-implementation-article-17-WHO-FCTC.PDF>
61. In Kenya, International Bamboo and Rattan Organisation (INBAR) has helped farmers switch to bamboo plantations, which has created a positive impact on the land and livelihood of the farmers.
See: Bamboo as an Alternative to Tobacco. Inbar News (June 2017). Available at: <https://www.inbar.int/bambootobaccoalternative/>
62. Discussion Paper: The WHO Framework Convention on Tobacco Control: An Accelerator for Sustainable Development. WHO Framework Convention on Tobacco Control and United Nations Development Program (26 May 2017). Available at: <https://www.who.int/fctc/implementation/publications/who-fctc-undp-wntd-2017.pdf>
63. Novotny, T.E. et al. propose seven policy recommendations and suitable alternatives to tobacco production which are more environmentally-oriented. First, identify and monitor health effects associated with tobacco production. Second, support farmers and their children in freeing themselves from the unsafe and unfair agricultural practices. Third, tighten tobacco production regulations to prevent further deforestation and land degradation. Fourth, implement extended producer responsibility (EPR) on the tobacco industry to reduce and prevent waste. Fifth, extend tobacco sale regulations to eliminate use of single-use filters, including biodegradable ones, to reduce waste. Sixth, recover the cost of industry misconduct and environmental damages through litigation and economic interventions. Seventh, improve and enforce environmental regulations and agreements that can be applied to tobacco manufacturing, transport and management of post-consumption waste.
See: Novotny, T.E. et al. "The environmental and health impacts of tobacco agriculture, cigarette manufacture and consumption." *Bulletin of the World Health Organization* vol. 93,12 (December 2015): 877-80. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4669730/>
64. "British American Tobacco, whose brands include Lucky Strike and Rothmans, said in a statement it would work with the government to educate smokers, and distribute pocket ashtrays. But it rejected new taxes. It is not up to companies, smokers or citizens to pay, via additional taxes, for the cost linked to the clean-up of cigarette butts," BAT public affairs director Eric Sensi-Minautier said. Imperial Brands, which sells the French Gauloises and Gitanes brands, said it encouraged smokers to dispose of butts responsibly. It said it had no plans to alter its filters to make them less polluting."
See: France orders tobacco industry: stub out cigarette butt pollution. Geert De Clercq. Reuters (14 June 2018) Available at: <https://www.reuters.com/article/instant-article/idINKBN1JA257> Also available at: <https://www.egypttoday.com/Article/1/52148/France-orders-tobacco-industry-stub-out-cigarette-butt-pollution>
See also: Saabira Chaudhuri. The World's Most Littered Item Comes Under Fire. *The Wall Street Journal* (31 July 2019). Available at: <https://www.wsj.com/articles/the-worlds-most-littered-item-comes-under-fire-11564580324>
See also: PMI Launches "Our World Is Not an Ashtray" Initiative and Aims to Halve Plastic Litter from Products by 2025. (16 July 2020).
See also: PMI: We can reduce littering: Three inspiring campaigns that prove change is possible (14 Jul 2020)
65. WHO Report on the Global Tobacco Epidemic, 2019. Geneva: World Health Organization (25 July 2019). Licence: CC BY-NC-SA 3.0 IGO. Available at: <https://www.who.int/teams/health-promotion/tobacco-control/who-report-on-the-global-tobacco-epidemic-2019>

66. Curtis, C. et al. "Extended Producer Responsibility and Product Stewardship for Tobacco Product Waste." *International journal of waste resources* vol. 4,3(2014): 157. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4597783/>
67. "Environmental principles underlying the Model Tobacco Waste Act: EPR is a policy principle that promotes environmental protection by extending the responsibilities of the producer across the product's entire life cycle. As set out by Lindhqvist, EPR addresses three core tenets:
1. Internalise the environmental cost of products into their retail price.
2. Shift the economic burden of managing toxicity and other environmental harm associated with postconsumer waste from local governments and taxpayers, to producers. Provide incentives to producers to incorporate environmental considerations into the design of their products."
See: Clifton C., Novotny T.E., Lee K., Freiberg M. and McLaughlin I. Tobacco industry responsibility for butts: A Model Tobacco Waste Act. *TobaccoControl* (2017); 26:113-117. Available at: <https://tobaccocontrol.bmj.com/content/26/1/113>
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69. Novotny and Thomas et al. propose seven policy recommendations and suitable alternatives to tobacco production which are more environmentally-oriented. First, identify and monitor health effects associated with tobacco production. Second, support farmers and their children in freeing themselves from the unsafe and unfair agricultural practices. Third, tighten tobacco production regulations to prevent further deforestation and land degradation. Fourth, implement extended producer responsibility (EPR) on the tobacco industry to reduce and prevent waste. Fifth, extend tobacco sale regulations to eliminate use of single-use filters, including biodegradable ones, to reduce waste. Sixth, recover the cost of industry misconduct and environmental damages through litigation and economic interventions. Seventh, improve and enforce environmental regulations and agreements that can be applied to tobacco manufacturing, transport and management of post-consumption waste.
See: Novotny, Thomas E et al. "The environmental and health impacts of tobacco agriculture, cigarette manufacture and consumption." *Bulletin of the World Health Organization* vol. 93,12 (December 2015): 877-80. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4669730/>
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See: Lecours N, Almeida GEG, Abdallah JM, et al. Environmental health impacts of tobacco farming: a review of the literature. *Tobacco Control* 2012;21:191-196. Available at: <https://tobaccocontrol.bmj.com/content/21/2/191>
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87. "Our voices are being drowned out by false promises of economic prosperity from cigarette makers and leaf buying companies. Smallholder and tenant farmers in Malawi do not share the same views as the tobacco industry when it comes to our future. In the short term, tobacco companies are interested in profit and the addiction to smoking by our people is in direct opposition to the long-term goal of ensuring safe, resilient livelihoods for smallholder and tenant farmers, as well as the vast majority of the people of Malawi."
See: Tobacco Tenants and Allied Workers Union Of Malawi (TOAWUM)'s letter to the President of the Republic of Malawi (10 October 2014).
88. Agricultural Transformation Initiative (ATI), Foundation for a Smoke-Free World.
89. Novotny, T.E. et al. propose seven policy recommendations and suitable alternatives to tobacco production which are more environmentally-oriented. First, identify and monitor health effects associated with tobacco production. Second, support farmers and their children in freeing themselves from the unsafe and unfair agricultural practices. Third, tighten tobacco production regulations to prevent further deforestation and land degradation. Fourth, implement extended producer responsibility (EPR) on the tobacco industry to reduce and prevent waste. Fifth, extend tobacco sale regulations to eliminate use of single-use filters, including biodegradable ones, to reduce waste. Sixth, recover the cost of industry misconduct and environmental damages through litigation and economic interventions. Seventh, improve and enforce environmental regulations and agreements that can be applied to tobacco manufacturing, transport and management of post-consumption waste. See: Novotny, Thomas E et al. "The environmental and health impacts of tobacco agriculture, cigarette manufacture and consumption." Bulletin of the World Health Organization vol. 93,12 (December 2015): 877-80. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4669730/>
90. In 2013, local leaders in Uganda complained of fouled air near the British American Tobacco (BAT) Ugandan plant, and the Parliament called for stricter regulations of production and sale of tobacco in the country. Soon after, BAT moved its facilities from Uganda to Kenya. In such cases, to preempt government regulation and cost-effective measures, the tobacco industry cloaks its actions in the garb of selflessness and environmental concerns, whereas they are the results of public pressure.
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96. "Member states would have to ensure that tobacco companies cover the costs of waste collection for those products, including transport, treatment and litter collection." See: Plastic Oceans: MEPs back EU ban on throwaway plastics by 2021. *European Parliament News/ Press Release* (24 October 2018). Available at: <https://www.europarl.europa.eu/news/en/press-room/20181018IPR16524/plastic-oceans-meps-back-eu-ban-on-throwaway-plastics-by-2021>
97. Geert De Clercq. France orders tobacco industry: stub out cigarette butt pollution. *Reuters* (14 June 2018) Available at: <https://www.reuters.com/article/instant-article/idINKBN1JA257>
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See also: On December 2013, in order to comply with WHO FCTC, Department for Environment, Food and Rural Affairs (DEFRA) cut all links with Keep Britain Tidy, an environmental campaign group co-founded by Imperial Tobacco.
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Please note: Waste 360 article promotes 2 tobacco industry linked clean-up efforts. *Keep America Beautiful* and *Keep Britain Tidy* (the latter has cut ties with TI in 2013). There have been massive cleanup efforts around the globe, but mostly done locally by volunteers, and or at a cumulative expense of billions of dollars to cities and counties. Some regions have pushed for policy around cigarette litter; just this year, three U.S. states tried to move legislation to address the problem. And the European Union is working to pass the costly clean-up tab onto tobacco manufacturers.



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