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The phenomenon of smoking in countries and societies and its health, environmental and economic risks: A review

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Abstract

The history of smoking goes back to long periods of time, dating back to the late fifteenth century. However, its transmission to our Islamic world took place in the early twentieth century and at the advent of Colonialism to Islamic countries. Cigarette smoke contains many chemicals, such as nicotine, Tar, carbon dioxide, carbon monoxide, nitrogen oxides, and polonium and caustic ammonia, and these substances varied in their health effects, some of which lead to cancer various types such as lung, stomach, esophageal, pancreatic, lip, and colon cancer, including what causes cancer. It leads to damage to the respiratory and digestive system, in addition to this, addiction, which is difficult to obtain. As a result of him quitting smoking where It is the presence of nicotine in the blood that causes addiction. The reasons for falling into smoking are bad friends, the main reason, followed by people's ignorance of the harms Smoking. Therefore, this information came to shed light on the severe harms of smoking, which is really The plague of the age may contribute to a number of people quitting smoking.

Keywords: Smoking, cigarette, smoke components, and environment

Introduction

Smoking has been known for hundreds of years, and the first to discover smoking was Christopher Colombo. It is cultivated by the Native Americans in the late fifteenth century AD, and it entered Europe in 951 AD, when it was imported by the French sailor (Nicot te), and therefore it was called the main substance in smoking. With nicotine, and in the year 989 AD, cigarette rolling machines and matchboxes were invented, which facilitated the spread of these. Usually, in the seventeenth century the governments of Denmark, Sweden and the Netherlands issued laws prohibiting smoking. In average, to date 47.5% of men and 10.3% of women are current smokers. Tobacco continues to be the second major cause of death in the world. By 2030, if current trends continue, smoking will kill 9 million people annually^[1].

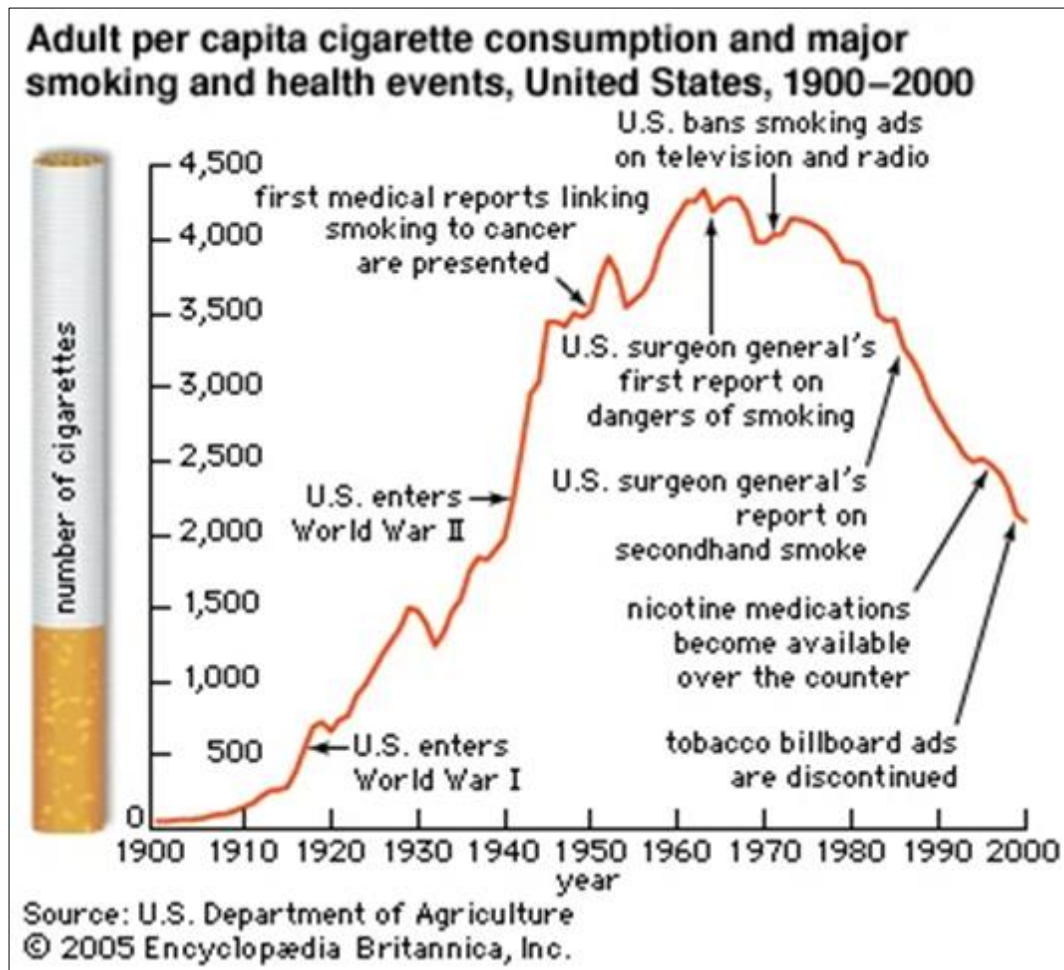
Smoking is a global practice in which substances, most commonly tobacco, are burned and the smoke is inhaled and exhaled. In Bangladesh, the common form of smoking is cigarettes, *bidi* (small, thin, hand-rolled cigarettes) and marijuana smoking. An e-cigarette is an electronic device that simulates tobacco smoking. It consists of an atomizer, power source (battery), and a container (cartridge or tank). Instead of smoke, the user inhales vapor^[2].

Smoking is one of the bad habits in our society that has been known since ancient times. Despite its various risks to the health of the individual and to society in all social, cultural, and economic aspects; it is placing a great financial burden on the state, but the number of smoking cases is constantly increasing. In this article, we will talk about smoking and its impact on society^[3]. Smoking is the burning process of a narcotic substance such as tobacco, which is inhaled or ingested through the mouth, and is absorbed through the lungs, and this smoke is often nicotine, and the goal is to; Recreation, considered part of religious rituals in some religions, results in a state of spiritual enlightenment and slumber. There are many ways to smoke, including; Industrial. Or hand-rolled cigarettes, hookah, bongs, pipes, cannabis smoking, and opium^[4]. The goal of study was to know of effect of smoking of lif.

Smoking throughout history: Smoking dates back to 5000 BC; many ancient civilizations emerged; it was taken as a manifestation of giving priests the opportunity to change their minds in matters of divination and spiritual enlightenment, and as rituals of purification, and to please the gods by offering those sacrifices.

Smoking appeared in a number of civilizations such as Babylonian, Indian, Chinese, and Christian and Catholic churches, which were represented by burning incense as a type of religious ritual for them [5]. Harmful usage of

tobacco is a public health problem of global concern and, in many countries, the main risk factor for non-communicable diseases [6].



Smoke components: Tobacco The tobacco plant is used to prepare products that deliver nicotine to the body, and nicotine is the main and effective ingredient in tobacco products. To a family of nightshade called nicotine, the leaves of this plant are used for smoking, chewing, and smelling if they are powdered. Tobacco smoke contains more than 7000 chemicals; At least 250 of them are harmful to health, cigarettes are composed of tobacco and some chemical additives, filters, and paperbacks. It is worth noting that cigarettes are the main cause of the vast majority of smoking diseases and deaths in the United States of America [7]. Smokers inhale the smoke of a large number of chemicals that cause harm to health, emphasizing that the amount of these chemicals varies. Depending on the quality of cigarettes, they may contain hundreds of chemical additives for the following reasons: To improve the flavor. Enhance the effect of nicotine. Keep tobacco moist and extend its shelf life. Cigarette smoke also contains pesticide residues that are used when growing tobacco, in addition to new substances that are produced when these pesticides are burned and interact with other chemicals. So far, 69 carcinogens have been identified in cigarette smoke [8]. Cylindrical cigar rolls consist mainly of tobacco, as it consists of a filter surrounded by loose leaves surrounded in turn by a paper sleeve wrapped in a spiral around a group of tobacco leaves. It is worth noting that the most expensive

tobacco leaves are used in the manufacture of cigars; it is flexible, soft and has good combustion properties

Hookah or hookah: The hookah is in the form of a tube of water used to smoke a special tobacco substance that comes with different flavors, and it should be noted that a large number of its users believe that it is less harmful than other types of smoking, but in fact it causes great health damage [9].

Smoke consists of chemicals that directly harm health: -9 nicotine, -2 tar, -3 carbon monoxide gas and carbon dioxide gas, -4 oxides of nitrogen, -5 ammonia gas, -6 polonium, -7 other highly toxic substances,

Nicotine: Nicotine is a highly addictive chemical compound present in a tobacco plant. All tobacco products contain nicotine, including cigarettes, non-combusted cigarettes (commonly referred to as “heat-not-burn tobacco products” or “heated tobacco products”), cigars, smokeless tobacco (such as dip, snuff, snus, and chewing tobacco), hookah tobacco, and most e-cigarettes [10]. It is a toxic chemical, and it is one of the alkaloids, due to which most of the effects that befall the smoker” [11]. Nicotine can cross the placenta when a pregnant person uses tobacco products. This can negatively impact the baby, including, but not limited to: premature labor; low birth weight; respiratory failure at birth; and even sudden infant death syndrome (SIDS) [10].

Tar: A sticky substance similar in shape to tar, which is used in paving streets, and tar is produced from the burning of tobacco and lead to obstruction of the airways, this sticky form is a resinous substance, which is "hydrogen". "Charcoal" This substance is used mainly in explosives and paint materials, and this substance causes cancer Because of the substance in it, which is "benzo pyrene" ^[12]. The tar in cigarette smoke builds up inside the lungs as it is inhaled. Over time, healthy pink lung tissue turns grey and eventually becomes black as more tar accumulates. The primary effect is that the tar paralyzes and can eventually kill cilia in the airways. Cilia are tiny, hair-like structures that line the trachea. They help trap pollutants, but when they're damaged, the toxins in tar can travel deeper into the lungs.

The tar does not just affect your lungs, though. From there, the toxins can be carried into the bloodstream and begin moving to other parts of your body. Because smoke is drawn directly through the mouth, the tar can contribute to oral cancer as well ^[13].

Carbon dioxide gas: Carbon monoxide (CO) is produced from incomplete combustion of hydrocarbons and is a by-product of tobacco smoking. Chronic cigarette smokers often have carboxy hemoglobin (CO Hb) concentrations as high as 10%. We report a case of severely elevated CO Hb and polycythemia because of tobacco smoking and provide a review of the literature regarding elevated CO Hb in smokers. It is caused by burning tobacco as well as paper rolled with cigarettes, which is very harmful. It reduces transfer the oxygen that carries red blood cells to the body tissues, especially the heart muscle, and irritates the membrane Oral mucosa, bronchi, bronchi and alveoli ^[14].

Nitrogen Oxides: Nitric oxide is both a critical biological toxin and an important messenger molecule, signalling events as diverse as nerve transmission and smooth muscle relaxation. Fresh cigarette smoke contains from 300 to 500 ppm nitric oxide. It Lead to increased secretions of the mucous membrane of the bronchi, which causes the lymph nodes to swell in the bronchi ^[15].

Caustic Ammonia Gas: Ammonia is a chemical additive found in tobacco filler. It increases nicotine dependence in cigarette smokers and has been included in the non-exhaustive priority list of 39 tobacco contents and emissions of cigarette by the World Health Organization (WHO) Study Group on Tobacco Product Regulation. The effects of ammonia present in tobacco filler on cigarette smoke, such as increasing its alkalinity, which in turn increases the amount of protonated nicotine in cigarette smoke, have been examined extensively ^[16]. A stinging substance that leads to the formation of the yellow layer on the surface of the teeth. It harms the taste and taste glands located on the tongue. It increases saliva secretion, irritates coughing, and exposes humans to recurrence Cold and inflammation of the mouth, throat and pharynx ^[17].

Polonium: Although polonium may not be the primary carcinogen in cigarette smoke, it may nonetheless cause thousands of deaths a year in the U.S. alone. And what sets polonium apart is that these deaths could be avoided with simple measures. The tobacco industry has known about polonium in cigarettes for nearly 50 years. By searching

through internal tobacco industry documents, I have discovered that manufacturers even devised processes that would dramatically cut down the isotope's concentrations in cigarette smoke. But Big Tobacco consciously decided to do nothing and to keep its research secret. In consequence, cigarettes still contain as much polonium today as they did half a century ago ^[18].

Smoking and addiction: The definition of addiction has continued to evolve over time. Initially it meant simply strong, usually passionate liking for something. More recently it has become understood as liking for something of which society disapproves, and possibly having strong, recurrent desires that the person might at times wish he or she did not have ^[19]. Anyone who starts using tobacco can become addicted to nicotine. Studies show that smoking is most likely to become a habit during the teen years. The younger you are when you begin to smoke, the more likely you are to become addicted to nicotine ^[20].

Smoking is considered a form of addiction, as medical research has proven that smoking tobacco is addictive. Like all drugs, only 96% of alcoholic drinkers become addicted by the time you reach puberty. The percentage of people who are addicted to smoking is 85% and the reason for addiction is that the nicotine in the cigarette enters the blood Which feeds the arteries of the brain, and soon the brain and nervous system get used to the presence of nicotine, so it gets used to it He demands it constantly, and the habit turns into an addiction, and smoking is a wide gateway to the world of drugs ^[19].

Smoking is directly related to the incidence of allergies and infections of the respiratory tissues, which include Nose, sinuses, bronchi, in addition to other harmful effects on the respiratory system include: Chronic bronchitis, emphysema, enlarged lymph nodes in the chest and infections recurrent viral ^[21]. Smoking has a direct relationship to atherosclerosis and the formation of blood clots, which may lead to angina pectoris, coronary artery insufficiency, damage to heart tissue, heart attack and stroke ^[22]. Smoking may lead to harmful effects on the digestive system, including defects in the taste glands Tongue, indigestion, stomach ulcers, which predispose to gastric and duodenal cancer. And pancreatic cancer, and health statistics confirm that smokers have stomach ulcers. The duodenum is 3 times that of non-smokers, and scientific research confirms that the stomach. The smoker excretes acids more than the normal rate by about twice ^[23].

Smoking by a pregnant mother severely affects the fetus and pregnancy, as a result of the effect of nicotine and monoxide Carbon, which leads to a lack of oxygenation of the placenta and the fetus's body, medical studies indicate The placenta separates early from the uterine wall, as well as an increase in the secretion of the hormone (oxytocin) which causes uterine contraction. These combined effects lead to premature birth, low birth weights Female smokers (less than 16% of normal weight), spontaneous abortion and weak immunity have a normal newborn. Smoking causes memory disorders and has a devastating effect on human vitality and sexual abilities ^[24].

Smoking harms the vitality and integrity of the gums, in addition to the deposition of toxic substances on the gums and teeth, causing Tooth loss, gum disease and bad breath characteristic of smokers. Nicotine affects nerve fibers and capillaries in the retina of the eyes, causing damage.

Increased vision, in addition to eye irritation and increased rates of allergic diseases, as it causes Carbon monoxide and toxic cyanides in visual atrophy [25].

Smoking represents unlimited harm and danger to diabetics, as nicotine leads to Constriction of the blood vessels in the skin, which reduces the absorption of injected insulin, and the effect of monoxide Carbon on red blood cells increases the complications of diabetes in the heart, and arteries and the retina [26].

Passive smoking: The painful scientific fact confirms that the smoker inhales only about 95% of the contents of a cigarette While 85% of its burnt end is blown into the air to be inhaled by others, or what is called smoking The negative, and thus the harm and danger are transmitted to innocent others, and medical statistics indicate that Children of smoking parents have a 4-fold increase in the incidence of acute bronchitis their peers, and their rates of chest allergies increase to 5 times the normal rates. Passive smoking increases the risk for exposed people to develop cardiovascular diseases. Environmental tobacco smoke (ETS) is defined as tobacco smoke produced by an active smoker which is inhaled by nonsmokers [27].

The effects of smoking on the environment: Smoking causes air pollution, the presence of a large number of toxic substances in it, that is, approximately four thousand harmful and harmful substances. Non-smokers are exposed to tobacco smoke through polluted air, which affects their health. It spoils the beauty of the environment, and contributes to its pollution by leaving cigarette butts, empty

cans, and matches. It ruins and spoils the furnishings requires large sums of money. Because it needs a ventilation system, maintenance, and special filters to purify the air from tobacco smoke. It causes a lot of fires [28].

Effects of smoking on humans: Tobacco has been around for centuries, but what we know about the health damage from smoking is much newer. For example, smokers tend to die more than 10 years earlier than people who don't smoke. You can improve your health by choosing to quit smoking. It causes the spread of various diseases; such as cirrhosis of the liver, and cancers; as lung cancer because it contains asbestos dust. The appearance of the teeth is distorted by the appearance of yellow spots on them. It gives the smoker an unpleasant breath that repels people from him because smoking helps the growth of a large number of bacteria in the mouth, which produces an unpleasant smell. It causes gum disease and tooth loss. Slows wound healing. Decreases the sense of taste [29]. It causes cancer of the mouth and throat. It causes birth defects in fetuses. It causes inflammation in the joints and bones. Increases the incidence of heart disease; Such as angina pectoris, clots, and blockage of the arteries. Increases the incidence of eye allergies. It causes headache. It leads to infections of the ear, throat, and larynx. It causes respiratory infections; Asthma, especially among children. It reduces the role of the immune system in the human body, making it more susceptible to the spread of diseases. Increases the mortality rate; the death rate due to smoking is approximately five million people annually. Negatively affects women's health and fertility, and irregular menstruation [30].

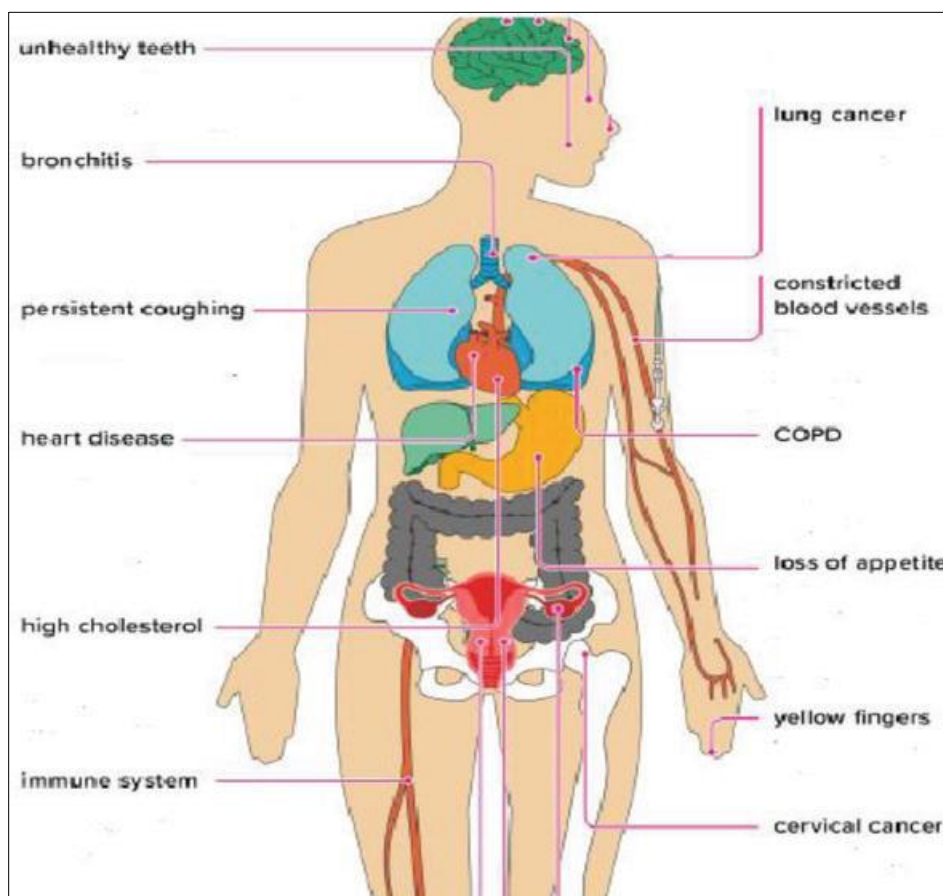


Fig 1: Smoking effects on human body [4].

Toxicity

Research shows that cellulose acetate-based cigarette filters do not biodegrade under most circumstances because of their compressed make up and the presence of acetyl molecules^[31, 32]. However, under specific circumstances (with sunlight and moisture), the cigarette filters may break into smaller plastic pieces containing and eventually leaching out some of the 7000 chemicals contained in a cigarette. Many of these chemicals are themselves environmentally toxic, and at least 50 are known human carcinogens^[33]. Studies have also shown that harmful chemicals such as nicotine, arsenic, polycyclic aromatic hydrocarbons (PAHs) and heavy metals leach from discarded tobacco product waste, and can be acutely toxic to aquatic organisms such as fish^[34, 35]. One recent study used the USA's Environmental Protection Agency standard toxicity assessment protocols to show that cigarette butts soaked in either fresh or salt water for 96 hours have a lethal concentration that killed half the exposed test fish^[36]. These chemicals come from across the tobacco production process, including pesticides and fertilizers, additives, the cellulose acetate filter, and combustion products generated by smoking cigarettes^[37].

Economic Effects: Many workers in the field of statistical studies are unable to write accurately about the economic effects that countries and individuals lose in the world of smoking. These losses are not limited to the purchase of cigarettes, which amounts to one billion dollars, in some countries whose budget does not exceed five billion dollars, and global consumption is estimated at three hundred thousand million dollars, half of them are from the third world^[38].

This means that these billions that are burned with cigarettes, two hundred thousand billion are spent on them to treat their effects, and half of them are burned inside the Third World, which is full of poverty, health problems, ignorance and backwardness. One study revealed that people affected by smoking miss work and employment by up to three times more than others who do not smoke, and therefore we can imagine the losses incurred by government and private enterprises due to the absence of employees affected by smoking diseases, and what countries lose from a lack of revenue, as well as disruption of public interests. And do not forget the losses caused by the smoker, and reflected on his wife and children^[39]. Continued smoking after cancer diagnosis has also been found to be a strong predictor of cancer-specific and overall mortality in several types of cancer. Current evidence suggests several potential explanations for how continued smoking can compromise survival including an increased risk for second primary cancer, increased risk for postoperative complications, higher risk for non-cancer-related deaths, and a detrimental effect on both radiotherapy and systemic therapy. Results from several site-specific cancer meta-analyses indicate that smoking during radiotherapy has a negative impact on treatment efficacy and is associated with increased toxicity. However, pooled evidence on the impact of smoking on radiotherapy as treatment modality per se irrespective of the type of cancer is lacking^[40]. All forms of tobacco are harmful, and there is no safe level of exposure to tobacco. Cigarette smoking is the most common form of tobacco use worldwide. Other tobacco products include water pipe tobacco, various smokeless tobacco products, cigars,

cigarillos, roll-your-own tobacco, pipe tobacco, bidi and creeks^[41]. Smoking can cause lung disease by damaging your airways and the small air sacs (alveoli) found in your lungs, Smoking also increases the risk of dying from cancer and other diseases in cancer patients and survivors^[42].

Types of environmental costs

Some of the highest environmental costs of one tobacco product alone – cigarettes – result from the large amounts of energy, water and other resources used in its manufacture, and the waste generated by this process (a lack of data means information on the environmental costs of smokeless tobacco and e-cigarettes is not available). While not an exhaustive list, these costs include:

- Chemicals used e.g. in the preparation and treatment of the tobacco leaf;
- Metals involved in the manufacture and shipping of cigarette-making machines;
- Energy used for manufacturing and distributing tobacco products (coal, gas, etc.);
- Wood pulp and effluent left over from cigarette paper and packaging manufacture;
- Energy required for, and effluent created by, extraction, extrusion and processing of cellulose acetate filters;
- All effluent from the cigarette-making process;
- Thousands of chemical additives, including flavouring and pH modifiers such as ammonia; and
- Energy used in the manufacture and fuelling of trucks, ships and planes to transport tobacco products from production plants to retailers^[43].

Product waste

Tobacco product waste is the end point of the life cycle for tobacco products, and cigarette butts are by far the largest single type of litter by count^[44]. Since the 1980s cigarette butts have consistently comprised 30-40% of all items picked up in annual international coastal and urban clean-ups. Given that the weight of 20 cigarette filters is 3.4 g, the estimated discarded waste from global cigarette consumption in 2014 could be anywhere between 340-680 million kg. This does not include the weight of remnant tobacco and other byproducts of the discarded waste. In addition to tobacco product waste, there are other waste products associated with tobacco use such as the 2 million tonnes of paper, ink, cellophane, foil and glue that are used in tobacco product packaging. This waste ends up everywhere, including on our streets, and in our drains, rivers and other aquatic environments. In most areas, the responsibility for cleaning up tobacco product waste falls to citizen advocacy groups, local communities and governments using taxpayer funding^[45].

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