



**Investment Case for
Tobacco Control in**

ESWATINI

**The case for scaling up
WHO FCTC implementation**



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The Case for Investing in WHO FCTC Implementation in Eswatini

Prepared by
Ministry of Health Eswatini
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World Health Organization

April 2021



More than **600** Eswatini die every year due to tobacco-related illness, accounting for nearly **6%** of all deaths in the country.

Tobacco costs Eswatini

SZL 684 million

every year, equivalent to

1.1% of its GDP

in 2017.



Investing now in seven tobacco control measures will prevent more than

3,300 deaths

and avert

SZL 2.7 billion

in health costs and economic losses by 2034.



For every **Swazi lilangeni** invested in the seven tobacco control measures today, Eswatini will receive **SZL 6** in averted costs and economic losses by 2024 and **SZL 15** by 2034.



Acknowledgements

This report was completed through collaborative efforts of the Eswatini Ministry of Health, the United Nations Development Programme, the Secretariat of the WHO Framework Convention on Tobacco Control, the World Health Organization and Research Triangle Institute International.

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April 2021

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This report recommends actionable steps, in addition to the modeled WHO Framework Convention on Tobacco Control provisions, that the Government of Eswatini can take to strengthen a whole-of-government approach to tobacco and its development consequences. Through the FCTC 2030 Project, the Secretariat of the WHO FCTC, UNDP and WHO stand ready to support the Government of Eswatini to reduce the social, economic, and environmental burdens that tobacco continues to place on its country.



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1. Executive summary

Overview

Tobacco is a health and sustainable development issue. Tobacco consumption and production causes early death and disease, results in high health costs and economic losses, widens socioeconomic inequalities, and impedes progress across the Sustainable Development Goals.

This report presents the findings of the case for investing in tobacco control in Eswatini. In line with the WHO Framework Convention on Tobacco Control (WHO FCTC) Global Strategy to Accelerate Tobacco Control and according to the stated priorities of the Government of Eswatini, it measures the costs and benefits—in health and economic terms—of implementing seven priority tobacco control measures. The seven measures are:

- 1 Increase cigarette taxation to reduce the affordability of tobacco products.**
(WHO FCTC Article 6)
- 2 Implement bans on smoking in public places to protect people from tobacco smoke.**
(WHO FCTC Article 8)
- 3 Mandate that large graphic health warnings cover at least 50 percent of tobacco product packaging.** *(WHO FCTC Article 11)*
- 4 Implement plain packaging.**
(WHO FCTC Article 11: Guidelines, and Article 13)
- 5 Promote and strengthen public awareness about tobacco control issues and the harms of tobacco use through mass media information campaigns.**
(WHO FCTC Article 12)
- 6 Expand and enforce a comprehensive ban on all forms of tobacco advertising, promotion, and sponsorship.**
(WHO FCTC Article 13)
- 7 Support reducing tobacco dependence and cessation by training health professionals to provide brief advice to quit smoking.**
(WHO FCTC Article 14)

Main findings

In 2017, tobacco use cost the Eswatini economy SZL 684 million, equivalent to 1.1 percent of its GDP. These annual costs include (a) SZL 64 million in healthcare expenditures, and (b) SZL 620 million in lost productive capacities due to premature mortality and disability as well as workplace smoking breaks. The productivity losses from current tobacco use in Eswatini—91 percent of all tobacco-related costs—indicate that tobacco use impedes development in Eswatini beyond health; multisectoral engagement is required for effective tobacco control, and other sectors benefit substantially from supporting tobacco control investments, through a healthier and more productive labour force.

Every year, tobacco use kills more than 600 Emaswati, with 66 percent of these deaths among individuals under age 70 (i.e. premature death). Nearly a quarter (24 percent) of lives lost from tobacco use are due to exposure to secondhand smoke.

By acting now, the Government of Eswatini can reduce the national burden from tobacco use. The investment case findings demonstrate that enacting and enforcing seven proven WHO FCTC tobacco control measures would, over the next 15 years:

Avert SZL 2.7 billion in economic losses. Of this total, SZL 2.5 billion is restored economic output. The tobacco-control measures stimulate economic growth by ensuring that fewer people 1) drop out of the workforce due to premature mortality, 2) miss days of work due to disability or sickness, and 3) work at a reduced capacity due to smoking breaks or tobacco-related health issues.

Lead to an additional SZL 252 million in savings through avoidance of tobacco-attributable healthcare expenditures. Of this, the Government would save SZL 116 million in healthcare expenditures, citizens would save SZL 29 million in out-of-pocket healthcare costs, and SZL 107 million would be saved from other sources of healthcare expenditures.

Save 3,300 lives and reduce the incidence of disease. The recommended WHO FCTC tobacco control measures would contribute to Eswatini's efforts to achieve SDG Target 3.4 to reduce by one-third premature mortality (under age 70) from non-communicable diseases (NCDs) by 2030. Enacting the WHO FCTC measures would prevent nearly 900 premature deaths from the four main NCDs by 2030, the equivalent of about 9 percent of the needed reduction in premature mortality to achieve SDG Target 3.4.

Provide economic benefits (SZL 2.7 billion) that significantly outweigh the costs of implementing the seven WHO FCTC measures (SZL 183 million). Mandating large graphic health warnings has the highest return on investment (51:1), followed by implementing and enforcing bans on smoking in public places (38:1), increasing cigarette taxes (35:1), expanding and enforcing bans on tobacco advertising, promotion, and sponsorship (33:1), mass media campaigns (32:1), implementing plain packaging of tobacco products (17:1), and cessation by training health professionals to provide brief advice to quit smoking (2:1).

Strengthening tobacco control in Eswatini will confer benefits to all, but particularly to the poor. For example, in response to price increases from higher cigarette taxes, lower-income earners cease smoking at a higher rate than wealthier individuals, helping them to avoid illness, catastrophic healthcare expenditures and further impoverishment. Lower-income earners cease smoking at a higher rate in response to price increases than wealthier individuals, helping them to avoid illness, catastrophic healthcare expenditures and further impoverishment. **In Eswatini, 48 percent of the deaths averted from increasing cigarette taxes would be among the poorest two income quintiles (i.e. the bottom 40 percent).** Cigarette tax increases would further benefit the poor if the resulting government tax revenue were reinvested in national development priorities to improve conditions for the poor.

Recommendations

Eswatini has the lowest smoking rate in southern Africa. Still, tobacco use is imposing enormous costs, and current smoking rates are not guaranteed to remain low in the face of extensive resources that tobacco companies are devoting to market expansion in sub-Saharan Africa. To ensure that the next generation is not a generation of smokers, and to alleviate the current health and economic burden caused by tobacco, Eswatini should invest now in tobacco control measures.

This report recommends actionable steps, in addition to the modeled WHO FCTC provisions, that the Government of Eswatini can take to strengthen a whole-of-government approach to tobacco and its development consequences. Through the FCTC 2030 Project, the Secretariat of the WHO FCTC, UNDP and WHO stand ready to support the Government of Eswatini to reduce the social, economic, and environmental burdens that tobacco continues to place on its country.

- 1 Utilise the ongoing national coordination mechanism (NCM) process to strengthen tobacco control coordination and strategy.** A workable strategy, supported by a wide range of government stakeholders and a realistic budget, can be highly effective in promoting sustained engagement among NCM members. The strategy may build on the completed WHO FCTC needs assessments, Global Youth Tobacco Surveys and STEPwise approach to surveillance surveys which collectively highlight existing gaps and best practices.
- 2 Take action to shield policymaking from tobacco industry interference, in line with WHO FCTC Article 5.3.** Effective tobacco control policies will be met with industry opposition, but Eswatini can protect progress and the policy-making process from industry interference by adopting low-cost measures such as developing nationally-adapted guidelines, or establishing a code of conduct for NCM members.
- 3 Build capacity in implementation of tobacco control regulations.** State capacity on monitoring and implementation must increase, including to ensure implementation of additional legislation. Compliance should be effectively monitored. Eswatini can take advantage of the technical support offered by UN-system partners and higher education institutions to support policy implementation and monitoring.
- 4 Increase taxes on tobacco products to at least 75 percent of the retail price, to curb consumption, increase state revenue and fund tobacco control activities.** The investment case demonstrates an 11:1 return on investment in the short-term and a 35:1 return on investment in the longer-term for raising cigarette taxes to these levels. Poor Emaswati would disproportionately benefit from the higher taxes in terms of their health and well-being as well as income available to improve their lives and opportunities.

Table ES1. Summary of the main results of the investment case for tobacco control in Eswatini

Every year, tobacco use causes...	Over 15 years, strengthening tobacco control in Eswatini would...
More than 600 deaths	Prevent nearly 3,300 deaths
SZL 64 million in healthcare expenditures	Save SZL 252 million in healthcare expenditures
SZL 620 million in indirect economic losses	Prevent SZL 2.7 billion in economic losses
Economic losses equivalent to 1.1% of GDP	Generate economic benefits (2.7 billion) that greatly outweigh the costs (183 million) of implementation and enforcement – a 15:1 return on investment



2. Introduction

Tobacco is one of the world's leading health threats, and a main risk factor for non-communicable diseases (NCDs) including cancers, diabetes, chronic respiratory disease and cardiovascular disease. In Eswatini, around 56,000 people currently use some form of tobacco product [1], leading to an estimated 661 deaths every year [2]. Sixty-six percent of those deaths occur among those under age 70 [2].

Alongside the cost to health, tobacco imposes a substantial economic burden. In 2012, worldwide, healthcare expenditures to treat diseases and injuries caused by tobacco use totaled nearly six percent of global health expenditure [3]. Further, tobacco use can reduce productivity by permanently or temporarily removing individuals from the labor market due to poor health [4]. When individuals die prematurely, the labor output that they would have produced in their remaining years is lost. In addition, individuals with poor health are more likely to miss days of work (absenteeism) or to work at a reduced capacity while at work (presenteeism) [5, 6].

Tobacco use may displace household expenditure that would otherwise go to fulfilling basic needs, including food and education [7-9], contributing to pushing some families into poverty and hunger [10, 11]. It imposes health and socio-economic challenges on the poor, women, youth and other vulnerable populations [12]. Meanwhile, tobacco production causes environmental damage including soil degradation, water pollution and deforestation [13-15]. Given the far-reaching development impacts of tobacco, and the multisectoral nature of the needed interventions, effective tobacco control requires the engagement of non-health sectors within the context of a whole-of-government approach.

Current tobacco use trends, in Eswatini and around the world, are incompatible with sustainable development. Through Sustainable Development Goal (SDG) Target 3.4, the Agenda 2030 for Sustainable Development commits Member States to achieve a one-third reduction in premature mortality from NCDs (i.e. deaths between 30 and 70) by 2030. Accelerating progress on NCDs requires strengthened implementation of the WHO Framework Convention on Tobacco Control (WHO FCTC; SDG Target 3.a). Tobacco control is not just a primary means to improve population health, but also a proven approach to reduce poverty and inequalities, grow the economy and advance sustainable development broadly. Tobacco control is an SDG accelerator as it can contribute to multiple goals simultaneously across the economic, social and environmental spheres. However, more work must be done to reverse the tobacco epidemic including by accelerating implementation of the WHO FCTC.

Eswatini signed the WHO FCTC in 2004 and ratified it in 2006 [16]. Since then, Eswatini has made significant progress in tobacco control, passing the Tobacco Products Control Act of 2013, which contains provisions regulating smoking in public places; tobacco advertising, promotion, and sponsorship (TAPS); and packaging and labeling of tobacco products [17]. By legislating and funding these important measures, Eswatini is helping to curb the tobacco epidemic. Intensifying existing policies and implementing new measures can reduce tobacco use prevalence and generate additional health and economic gains. For example, there are opportunities to raise taxes on tobacco products and implement plain packaging laws. Realizing the full benefits of such measures depends on concerted and coordinated efforts from multiple sectors of government as well as high-level leadership and an informed public. It also requires attention to protecting against tobacco industry interference in policymaking.

In 2020, the Secretariat of the WHO FCTC, UNDP, and WHO undertook a joint mission to initiate, with national partners, an investment case as part of the FCTC 2030 Project. The FCTC 2030 Project is a global initiative funded by the governments of the UK, Norway and Australia to support countries to strengthen WHO FCTC implementation to achieve the SDGs. Eswatini is one of 24 countries worldwide receiving dedicated FCTC 2030 project support.

An investment case analyzes the health and economic costs of tobacco use as well as the potential gains from scaled-up implementation of WHO FCTC measures. It identifies which WHO FCTC demand-reduction measures can produce the largest health and economic returns for Eswatini (the return on investment; ROI). In consultation with the Government of Eswatini, the following seven key WHO FCTC provisions were selected to be modeled within the investment case:

- 1** **Increase cigarette taxation to reduce the affordability of tobacco products.**
(WHO FCTC Article 6)
- 2** **Implement and enforce bans on smoking in all public places to protect people from tobacco smoke.** (WHO FCTC Article 8)
- 3** **Mandate that large graphic health warnings cover at least 50 percent of tobacco product packaging.** (WHO FCTC Article 11)
- 4** **Implement plain packaging.**¹
(WHO FCTC Article 11: Guidelines for implementation, and Article 13)
- 5** **Institute mass media campaigns against tobacco use.**
(WHO FCTC Article 12)
- 6** **Expand and enforce a comprehensive ban on all forms of tobacco advertising, promotion, and sponsorship.**
(WHO FCTC Article 13)
- 7** **Support reducing tobacco dependence and cessation by training health professionals to provide brief advice to quit smoking.**
(WHO FCTC Article 14)

Section 3 of this report provides an overview of tobacco control in Eswatini, including tobacco use prevalence as well as challenges and opportunities. **Section 4** summarizes the methodology of the investment case (see *Annex* and *Technical Appendix*² for more detail). **Section 5** reports the main findings of the economic analysis. The report concludes under **Section 6** with recommendations.

1 Involves the prohibition on the use of logos, colors, brand images, and promotional information on packaging other than brand names and product names displayed in a standard color and font style.

2 Available upon request.

3. Tobacco control in Eswatini: status and context

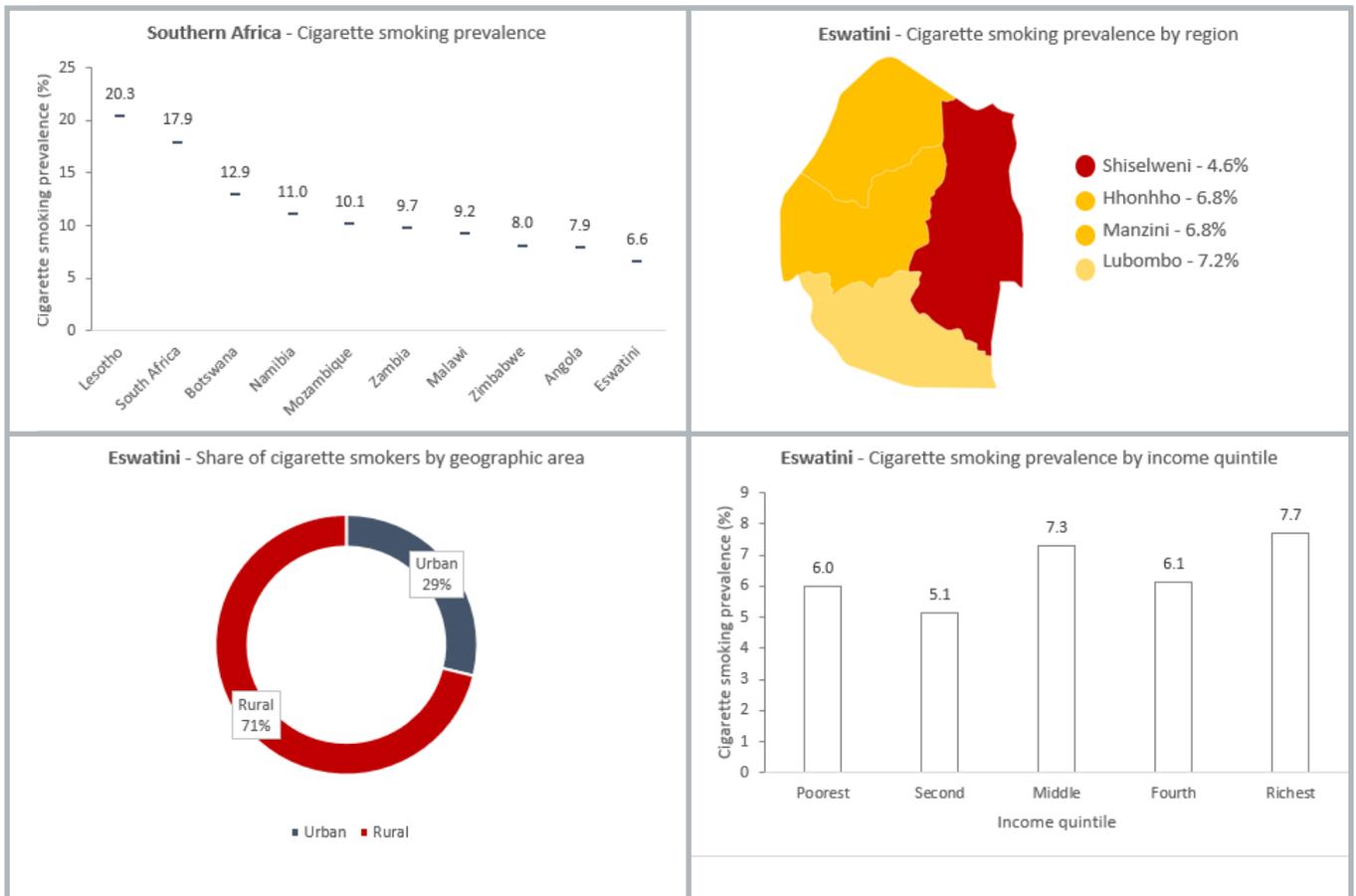
3.1 Tobacco use prevalence, social norms, and awareness-raising

In Eswatini, 14.7 percent of men and 1.3 percent of women use some form of tobacco [1]. Cigarette smoking is the most common type of tobacco use, with the average user smoking an average of about 5 cigarettes every day [18]. More than half of smokers indicate that they have tried to quit at least once.

Figure 1 compares cigarette smoking prevalence in Eswatini to nearby countries, and among subgroups in Eswatini. Eswatini has the lowest cigarette smoking prevalence in Southern Africa, with rates one-third of those in nearby Lesotho and South Africa. Continued low smoking rates, however, are not guaranteed with tobacco companies devoting extensive resources to market expansion in sub-Saharan Africa [19].

Within Eswatini, rates of cigarette use are highest in the Lubombo region (7.2 percent) and lowest in the Shiselweni region (4.6 percent). While smoking rates are higher in urban areas (7.7 percent) than in rural areas (6 percent), the largely rural population of Eswatini means that nearly three out of four smokers live in rural areas. Smoking prevalence is not widely dispersed by income, though middle-income and wealthier individuals are more likely to smoke than those with lower incomes.

Fig. 1: Comparison of cigarette smoking prevalence to nearby countries, and within sub-groups in Eswatini



Source: Information on cigarette smoking prevalence in Eswatini, by sub group, is obtained from the 2014 Multiple Indicator Cluster Survey (MICS) [20]. The share of smokers by geographic area is obtained by multiplying area cigarette smoking prevalence by area population, where the share of the urban and rural population (24/76) is obtained from the World Bank Database [21]. Cigarette smoking prevalence for countries in Southern Africa is obtained from the 2019 report on the global tobacco epidemic [22].

3.2 The status of WHO FCTC tobacco control demand-reduction measures

Strong fiscal and regulatory measures powerfully influence norms by signalling to the population that tobacco use is harmful, not just for users but also those around users—including family, colleagues and workers. Evidence suggests that the Eswatini Government’s tobacco control efforts are making a material impact. Nearly four out of every five Emaswati smokers notice health warnings on cigarette packages, helping 74 percent of them to think about quitting [18].

The Tobacco Products Control Act of 2013 contains provisions pertaining to the legality of smoking in public places; tobacco advertising, promotion, and sponsorship (TAPS); and packaging and labeling of tobacco products [17]. To further protect the health of its population, especially in the context of tobacco industry attempts to expand their market and increase tobacco use, and to honor its obligations as a Party to the WHO FCTC, Eswatini should strengthen existing measures and implement additional measures to reduce demand for tobacco. Below is the status of existing measures and the target level—corresponding with WHO FCTC obligations—examined within the investment case.



Increase tobacco taxation to reduce the affordability of tobacco products (WHO FCTC Article 6)

Eswatini currently has a total tax rate on cigarettes that accounts for 53 percent of the retail price of the most sold cigarette brand [16]. The WHO recommends that taxes represent at least 75 percent of the retail price of tobacco products, inclusive of at least a 70 percent excise tax, and that tax rates are monitored and increased on a regular basis to ensure tobacco products do not become more affordable over time (e.g. due to growth in income). The investment case examines the impact of raising cigarette taxes to levels that would meet WHO recommendations. The model results assume that beginning in 2022, taxes would be steadily raised (on average SZL 5.7 annually) to triple the cost of a pack of cigarettes by 2034—a real increase of SZL 73.



Implement and enforce bans on smoking in all public places to protect people from tobacco smoke (WHO FCTC Article 8)

The Tobacco Control Products Act restricts smoking in all indoor public places including healthcare facilities, educational facilities, universities, government buildings, workplaces, restaurants, cafes and bars, and public transit. However, designated, ventilated smoking areas are allowed on each of these premises. Allowing smoking in designated areas does not protect individuals—including workers in the hospitality industry—from passive smoke exposure. Moreover, these areas signal the acceptability of smoking as a social norm [23]. The investment case examines the impact of enacting a complete ban on smoking in all public places, with high levels of enforcement.



Mandate that tobacco products and packaging carry large graphic health warnings describing the harmful effects of tobacco use (*WHO FCTC Article 11*)

In order to inform consumers about the harmful effects of tobacco, text warning labels are required to cover at least 50 percent of the tobacco package. Large, graphic warning labels are demonstrated to have an even stronger effect on convincing smokers to quit. The investment case examines the impact of mandating that at least 50 percent of each and every tobacco package is covered with graphic warning labels that are rotated on a regular basis.



Mandate plain packaging of all tobacco products (*WHO FCTC Article 11: Guidelines for implementation, and Article 13*)

Plain packaging—neutral colors, without branding and logos—is currently not mandated in Eswatini. Plain packaging of tobacco products would enhance the impact of health warnings and eliminate the possibility of using the package as a vehicle for advertising.



Promote and strengthen public awareness about tobacco control issues and the harms of tobacco use through mass media information campaigns (*WHO FCTC Article 12*)

No national-level anti-tobacco mass media campaigns have aired on major media platforms, such as television and radio, in Eswatini during the last three years. Campaigns should include all components recommended by WHO, such as target audience research, testing of materials, working with journalists to gain publicity, and evaluating the impact of the campaign. Launching a best-practice mass media campaign (examined in the investment case) would further promote and strengthen public awareness about tobacco control issues and the harms of tobacco use.



Enact and enforce a comprehensive ban on all forms of tobacco advertising sponsorship and promotion (*WHO FCTC Article 13*)

Eswatini has enacted a ban on many forms of tobacco advertising, promotion, and sponsorship (TAPS), including banning advertising on TV, radio, the internet, and billboards; and in magazines and newspapers. However, several forms of tobacco promotion and sponsorship remain legal. Tobacco companies can promote their brand on non-tobacco products, and tobacco products may be shown in TV and films without the requirement that anti-tobacco advertisements be shown before, during, or after the product makes an appearance. In addition, sale of tobacco out of vending machines is permitted. Evidence shows that tobacco companies exploit incomplete bans and channel resources into avenues that remain legal [24]. A comprehensive ban on all forms of TAPS (examined in the investment case) would reduce population exposure to tobacco products through direct and indirect marketing—especially exposure that glamorizes use of tobacco products—thereby decreasing youth smoking initiation and tobacco consumption rates, as well as increasing quit rates [24].



Provide support for reducing tobacco dependence and cessation: Offer brief advice to quit at the primary care level (*WHO FCTC Article 14*)

About one out of every three current smokers reports having received advice from health providers to quit using tobacco [18]. In general, smoking cessation support is not widely available within health clinics, hospitals, or within communities [16]. Supportive cessation advice from trained providers can motivate individuals to quit or increase quit attempts. The investment case examines the impact of training health providers to offer cessation advice in general practice settings.

Table 1 summarizes the existing state of WHO FCTC demand-reduction measures and compares them against the WHO FCTC target goals for each measure. Reaching target goals can further reduce tobacco consumption. The impact of each policy measure—individually and in combination—is described in Annex Table A1.

Table 1. Summary of the current state of WHO FCTC demand-reduction measures in Eswatini and target goals

Tobacco Control Policy	Eswatini Baseline*	Modeled WHO FCTC Target
Increase cigarette taxation to reduce the affordability of tobacco products <i>(WHO FCTC Article 6)</i>	Tax share equivalent to 53 percent of the retail price of the most sold cigarette brand.	Increase taxes on cigarettes to at least 75% of the retail price with at least a 70% share of excise tax. Implement regular tax increases to outpace inflation and income growth. ³
Implement and enforce bans on smoking in all public places to protect people from tobacco smoke <i>(WHO FCTC Article 8)</i>	Smoking is restricted in all indoor public places. However, designated, ventilated smoking areas are allowed.	Enact bans on smoking in all indoor public places, with high levels of enforcement to drive compliance.
Mandate that tobacco products and packaging carry large graphic health warnings describing the harmful effects of tobacco use <i>(WHO FCTC Article 11)</i>	Textual health warning labels are required to cover 50% of tobacco packaging; warnings are not regularly rotated.	Mandate that graphic warning labels cover at least 50 percent of tobacco packaging, and that labels are regularly rotated and refreshed (at least every two years) to ensure continued impact.
Mandate plain packaging of all tobacco products <i>(WHO FCTC Article 11: Guidelines, and Article 13)</i>	No law mandates plain packaging of tobacco products.	Mandate and implement plain packaging.
Promote and strengthen public awareness about tobacco control issues and the harms of tobacco use through mass media information campaigns <i>(WHO FCTC Article 12)</i>	No national anti-smoking mass media campaigns have recently been conducted.	Implement a national anti-smoking mass media campaign that is researched and tested with a targeted audience, and evaluated for impact.
Enact and enforce a comprehensive ban on all forms of tobacco advertising sponsorship and promotion <i>(WHO FCTC Article 13)</i>	Advertising is banned on major forms of media (e.g., TV, radio, internet, billboards, print). Most forms of promotion and sponsorship are banned, but tobacco companies can brand non-tobacco products and retail out of vending machines, and tobacco products may be shown in TV and films (without accompanying anti-tobacco messaging).	Enact a comprehensive ban on all forms of tobacco advertising, promotion and sponsorship.
Provide support for reducing tobacco dependence and cessation: Offer brief advice to quit at the primary care level <i>(WHO FCTC Article 14)</i>	Two out of three current smokers have never received advice to quit using tobacco from a health provider.	Train health providers to identify tobacco users and to provide tobacco cessation advice; scale up the provision of tobacco cessation services at the primary care level.
* Unless otherwise noted, information in this column is derived from the WHO Report on the Global Tobacco Epidemic: Country profile – Eswatini		

3 The investment case examines the impact of raising cigarette taxes to levels that would fulfill WHO tax share recommendations. Beginning in 2022 taxes are steadily raised (on average SZL 5.7 annually), tripling the cost of a pack of cigarettes by 2034—a real increase of SZL 73.

3.3 Tobacco use and the COVID-19 pandemic

The global COVID-19 pandemic is straining health systems worldwide, and the economic impact of the outbreak is immense. People living with pre-existing NCDs, including those caused by tobacco use, are likely more vulnerable to becoming severely ill with COVID-19 [25]. A review of the evidence conducted by WHO by 12 May 2020 concluded that, at the time, the available evidence suggested that smoking is associated with increased severity of disease and death in hospitalized COVID-19 patients. However, more research needs to be conducted. Well-designed population-based studies are, however, necessary to address questions about hospitalization, COVID-19 severity and the risk of infection by SARS-CoV-2 among smokers [26].

3.4 National tobacco control legislation, strategy and coordination

Eswatini has made strong progress in tobacco control since it became a Party to the WHO FCTC. Recently, the Government ratified the Protocol to Eliminate Illicit Trade of Tobacco Products in 2016, enacted the Alcohol and Tobacco Levy Act in 2019, and reaffirmed high-level commitment through the FCTC 2030 project in 2020. In line with Article 5 of the WHO FCTC, Eswatini is committed to strengthening tobacco control governance to support continuous advancement of national tobacco control laws and their enforcement. Led by the Ministry of Health and Deputy Prime Minister's Office, with support from the Ministry of Economic and Planning and Development, the Government is harnessing political commitment and bridging gaps in legislation and enforcement by operationalising a NCM for tobacco control and mobilizing civil society. It has committed to establish and finance an NCM for tobacco control composed of representatives from relevant government ministries and agencies, civil society and academia. The NCM will help Eswatini to strengthen existing tobacco control measures through the Alcohol and Tobacco Levy Act, implement the Protocol to Eliminate Illicit Trade of Tobacco Products, advance a comprehensive multisectoral national tobacco control strategy, and address impediments to tobacco control including: financing gaps, the need for robust monitoring/surveillance systems, and pushback from the tobacco industry.

3.5 Financing

Eswatini reduced out-of-pocket health expenditure by nine percentage points between 2000 and 2017, largely through a substantial increase in external, rather than domestic, resources [27]. The state's limited domestic finances also impinge upon the activities of the Ministry of Health, which lacks dedicated funding for a tobacco control focal point/unit. The Eswatini government and external donors have historically invested more heavily in programmes to address communicable diseases – the main causes of death in Eswatini – with less focus on NCDs, tobacco control and related co-morbidities which exacerbate infectious disease burdens. Within the Ministry of Health, tobacco control and NCD prevention and control receive little funding [31].

3.6 Monitoring the impact of tobacco control

As part of the FCTC 2030 project, Eswatini will develop a new national tobacco control strategic plan. The sustainability of this strategy hinges on the government's ability to assess and continuously improve current and new policies through monitoring and surveillance. Frequent monitoring also serves to draw policymakers' attention to the areas where implementation is faltering. For instance, the high percentage of deaths from secondhand smoking in Eswatini—nearly one quarter (24 percent) of total tobacco-related deaths—strongly indicates an enforcement gap in smoke-free regulations.

The 2014 STEPS survey is the most comprehensive and current tobacco surveillance for Eswatini. There have been only two Global Youth Tobacco Surveys (GYTSs), in 2001 and 2005. The GYTS is an important supplement to the STEPS survey. Its smaller scale makes it easier to conduct and it includes data on perceptions of smoking and exposure to second-hand smoke among students, which is essential for assessing the effectiveness of existing policies.

A whole-of-society approach to tobacco surveillance is needed and can be aided by a strengthened role for civil society organizations to drive accountability and monitoring. Stronger links with academia, including higher education institutions locally or abroad, can advance the tobacco control research agenda. Emerging data and information must reach all relevant actors engaged in tobacco control. Stakeholders in Eswatini recently noted limited engagement in tobacco control.

3.7 Industry presence and interference

Tobacco cultivation in Eswatini peaked in 1978, reached historical lows in the 1990s, and has been growing steadily since the 2000s [29]. Tobacco is grown primarily by smallholder farmers for household consumption or sale at local markets, rather than to serve as raw material for manufactured products [30]. With its limited land area for agriculture, most of which is managed by communal chiefs and only occasionally leased to private companies, tobacco companies have not traditionally targeted Eswatini for growing or manufacturing tobacco. In contrast, neighbouring Mozambique and South Africa have substantial industry presence at all points of the value-chain, led notably by Universal Leaf Tobacco, a miller, and British American Tobacco (BAT), a manufacturer. BAT operates from South Africa and is a key tobacco product supplier in Eswatini, controlling over 80 percent of Eswatini's market in manufactured tobacco. BAT has actively participated in policy lobbying in Eswatini, such as the "sin tax" hearings in 2019. It has been vocal in protesting the Government's tobacco control measures [31]. BAT has also sought to influence policy in Eswatini by proposing a partnership to counter illicit trade in tobacco products – an area for which Eswatini lacks staff and technical expertise to fulfil its obligations under the Protocol to Eliminate Illicit Trade in Tobacco Products [28].

To safeguard against tobacco industry interference in policymaking, Eswatini should undertake a tobacco industry interference (TII) assessment (such as the one completed this year⁴ by South Africa) and transform WHO FCTC Article 5.3 recommendations—pertaining to the protection of health policy from the tobacco industry interests—into formal policy. Of concern is that Swati legislation only requires members of the NCM to declare conflicts of interest and, without the NCM being active, this measure has no practical effect [28].



Photo: © Safa Hovinenvia Flickr

4. Methodology

The purpose of the investment case is to quantify the current health and economic burden of tobacco use in Eswatini (in the context of tobacco control measures that are currently in place), and to estimate the impact that implementing new tobacco control measures—or intensifying existing ones—would have on reducing this burden.

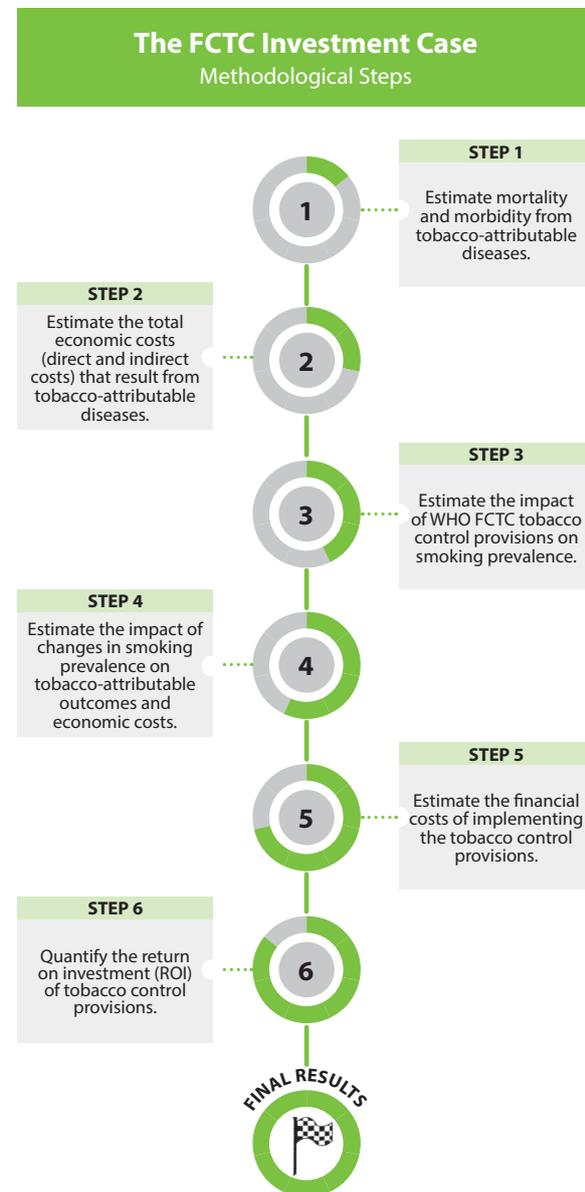
An RTI International-developed static model incorporating a population-attributable fraction approach was created to conduct the investment case and to perform the methodological steps in **Figure 2**. This methodology has been used for previous national FCTC investment cases under the FCTC 2030 project.

The tools and methods used to perform these steps are described in this report's Annex. Interested readers are also referred to this report's separate Technical Appendix⁵ for a more thorough account of the methodology.

The investment case team worked with partners in Eswatini to collect national data inputs for the model. Where data was unavailable from government or other in-country sources, the team utilized publicly available national, regional, and global data from sources such as the World Health Organization (WHO), the World Bank database, the Institute for Health Metrics and Evaluation's (IHME) Global Burden of Disease (GBD) study, and academic literature.

Within the investment case, costs and monetized benefits are reported in constant 2018 Eswatini lilangeni (SZL) and discounted at an annual rate of 3 percent.

Fig. 2: Building the FCTC Investment Case



⁵ Available upon request.

5. Results

5.1 The current burden of tobacco use: health and economic costs⁶

Tobacco use undermines economic growth. In 2017, tobacco use caused an estimated 661 deaths in Eswatini, 66 percent occurring among those under 70 years. These deaths amount to 11,200 years of life lost, which are lost productive years in which many of those individuals would have contributed to the workforce. The economic losses in 2017 due to tobacco-related premature mortality are estimated at SZL 538 million.

While the costs of premature mortality are high, the consequences of tobacco use begin long before death. As individuals suffer from tobacco-attributable diseases (e.g. heart disease, strokes, cancers), expensive medical care is required to treat them. Spending on medical treatment for illnesses caused by smoking cost the Government SZL 29 million in 2017 and caused Eswatini citizens to spend SZL 7.3 million in out-of-pocket (OOP) healthcare expenditures. Private insurance and non-profit institutions serving households spent SZL 25 million on treating tobacco-attributable diseases in 2017. In total, healthcare expenditures attributable to smoking amounted to SZL 64 million.

In addition to healthcare costs, as individuals become sick, they are more likely to miss days of work (absenteeism) or to be less productive at work (presenteeism). In 2017, the cost of excess absenteeism due to tobacco-related illness was SZL 14.6 million and the cost of presenteeism due to cigarette smoking was SZL 39 million.

Finally, even in their healthy years, workers who smoke are more likely to have productivity loss than workers who do not smoke. Smokers take an estimated ten additional minutes per day in breaks than non-smoking employees [27]. If ten minutes of time is valued at the average worker's salary, the compounding impact of 23,200 employed smokers taking 10 minutes per day for smoke breaks is equivalent to losing SZL 28 million in productive output annually.

In total, tobacco use cost Eswatini's economy SZL 684 million⁷ in 2017, or about 1.1 percent of Eswatini's 2017 GDP. **Figure 3** breaks down direct and indirect costs. **Figure 4** and **Figure 5** illustrate the annual health losses that occur due to tobacco use.

6 In assessing the current burden of tobacco use, the economic costs of premature mortality include the cost of premature deaths due to any form of exposure to tobacco (including of smoking, second-hand smoke, and the use of other types of tobacco products). Only smoking-attributable (not tobacco-attributable) costs are calculated for healthcare expenditures, absenteeism, presenteeism, and smoking breaks. While other forms of tobacco may also cause losses in these categories, no data is available to precisely ascertain those losses.

7 Component parts may not add to SZL 684 million exactly due to rounding.



Photo: © Rene C Nielsen via Flickr

The current burden of tobacco use

Fig. 3: Breakdown of the share of direct and indirect economic costs (SZL millions) in 2017

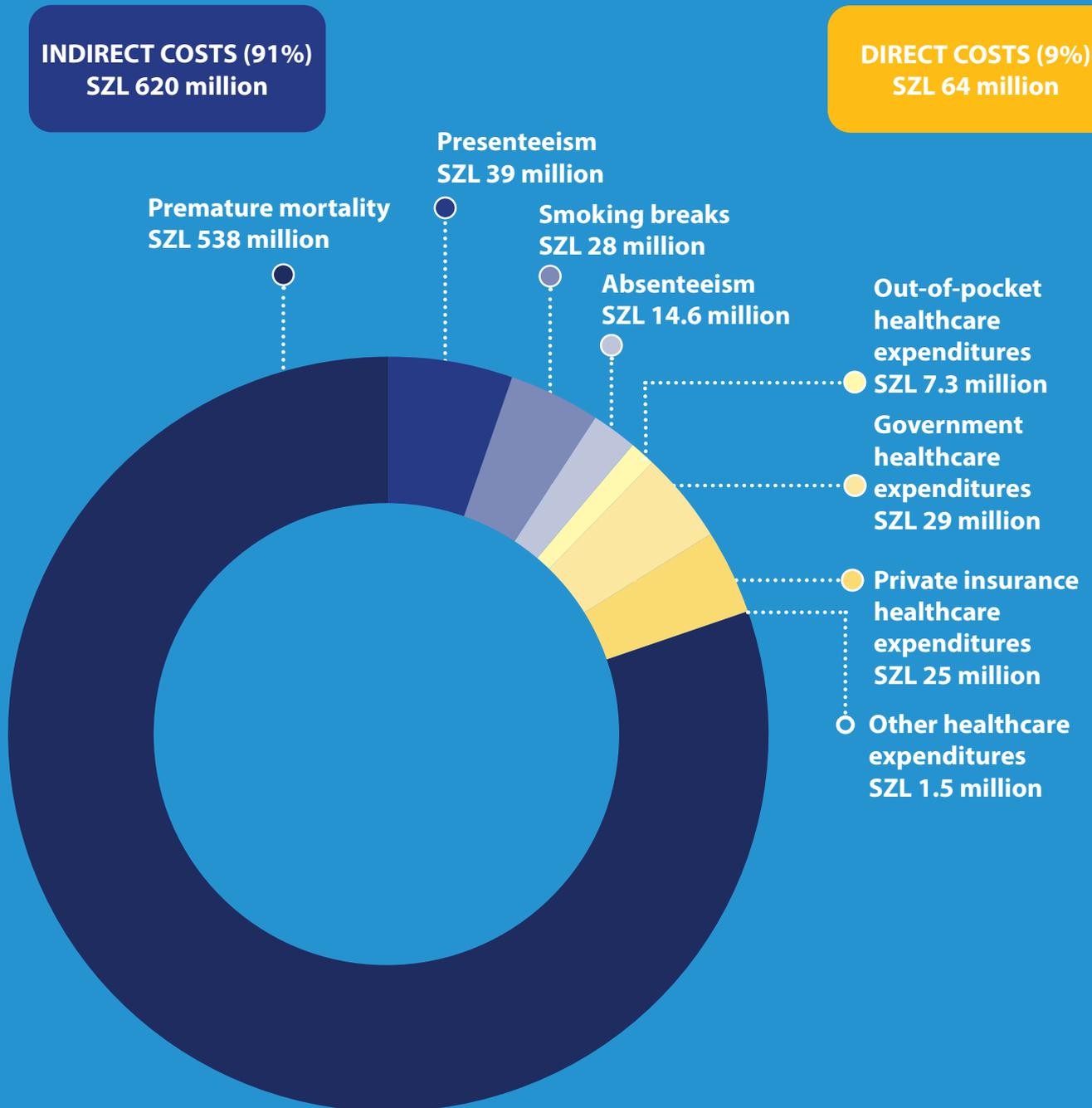


Fig. 4: Tobacco-attributable deaths by disease in Eswatini, 2017 (Source: Results are from the IHME Global Burden of Disease Results Tool. Other diseases include asthma, cervical cancer, liver cancer, larynx cancer, lip and oral cavity cancer, aortic aneurysm, peptic ulcer disease, pancreatic cancer, colon and rectum cancer, stomach cancer, leukemia, bladder cancer, prostate cancer, other pharynx cancer, peripheral artery disease, breast cancer, kidney cancer, nasopharynx cancer, and gallbladder and biliary diseases).

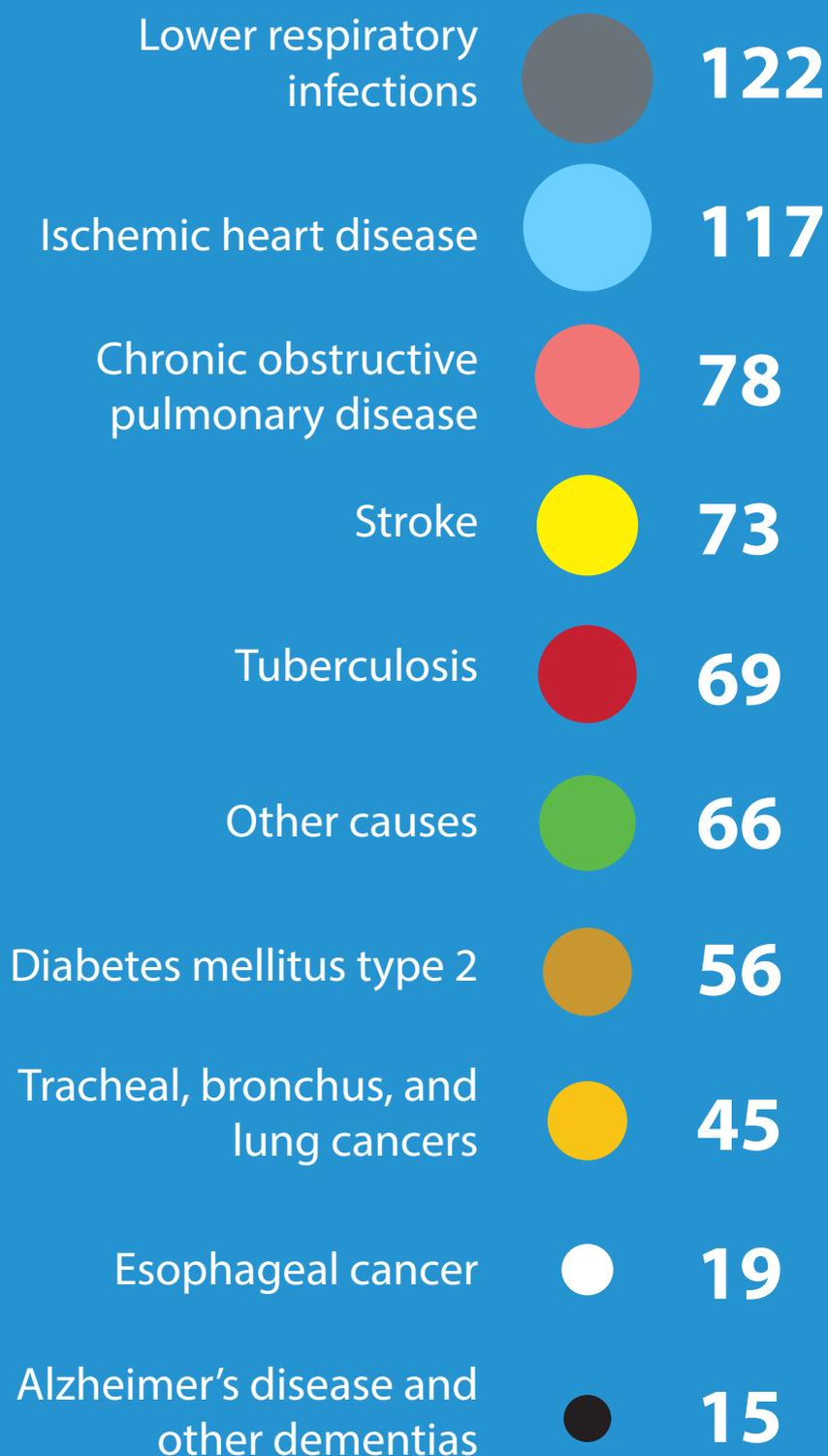
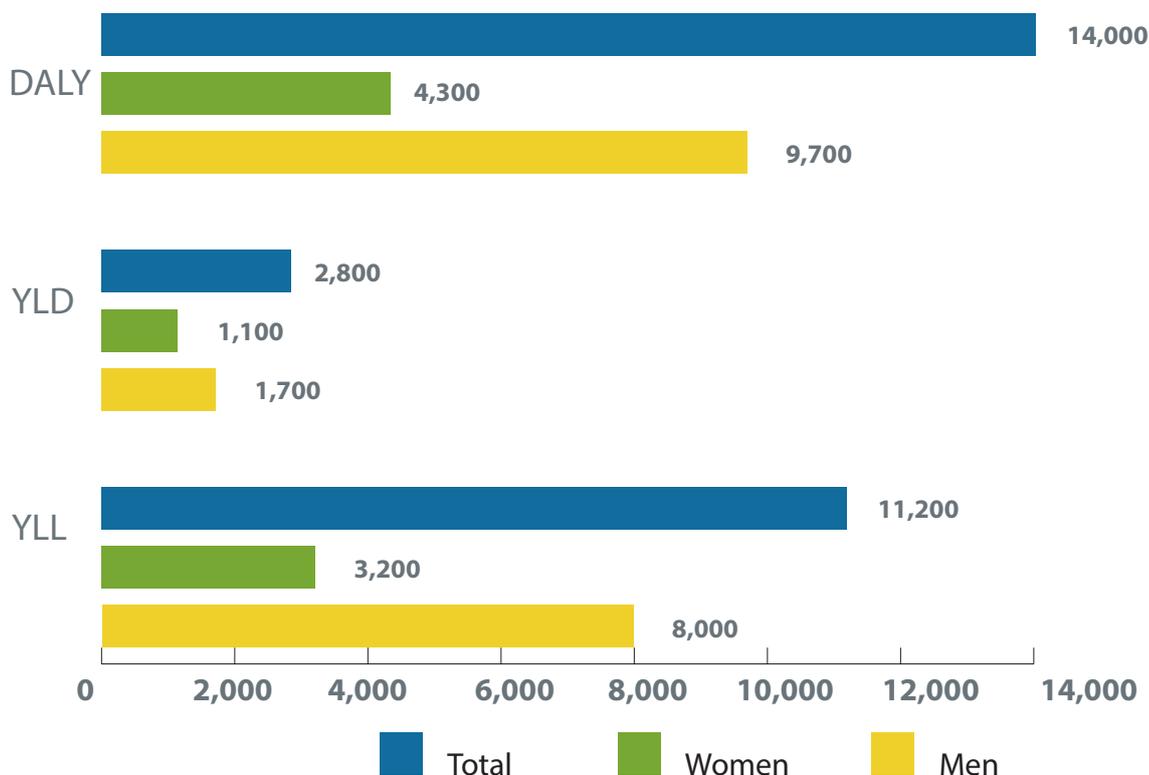


Fig. 5: Tobacco-attributable DALYs, YLDs, and YLLs in Eswatini, by sex,⁸ 2017

5.2 Implementing policy measures that reduce the burden of tobacco use

By implementing new WHO FCTC policy measures, or improving the implementation and enforcement of existing ones, Eswatini can secure significant health and economic returns, and begin to reduce the SZL 683.9 million in annual direct and indirect economic losses from tobacco use.

The next two subsections present the health and economic benefits that result from the following seven WHO FCTC policy actions: 1) increase cigarette taxation to reduce the affordability of tobacco products; 2) implement bans on smoking in public spaces; 3) mandate that large graphic health warnings cover 50 percent of the packaging; 4) implement plain packaging of tobacco products; 5) institute best-practice national anti-tobacco mass media campaigns to increase awareness about the harms of tobacco use; 6) expand and enforce bans on tobacco advertising, promotion and sponsorship; and 7) support reducing tobacco dependence and cessation by training health professionals to provide brief advice to quit smoking.

⁸ YLDs are “years lived in less than ideal health...[YLDs are] measured by taking the prevalence of a [disease] condition multiplied by the disability weight for that condition. Disability weights reflect the severity of different conditions.” YLLs are “calculated by subtracting the age at death from the longest possible life expectancy for a person at that age.” DALYs “equal the sum of YLLs and YLDs. One DALY equals one lost year of healthy life.” Source: IHME. (2018). Frequently asked questions. Retrieved from <<http://www.healthdata.org/gbd/faq#What%20is%20a%20DALY?>>

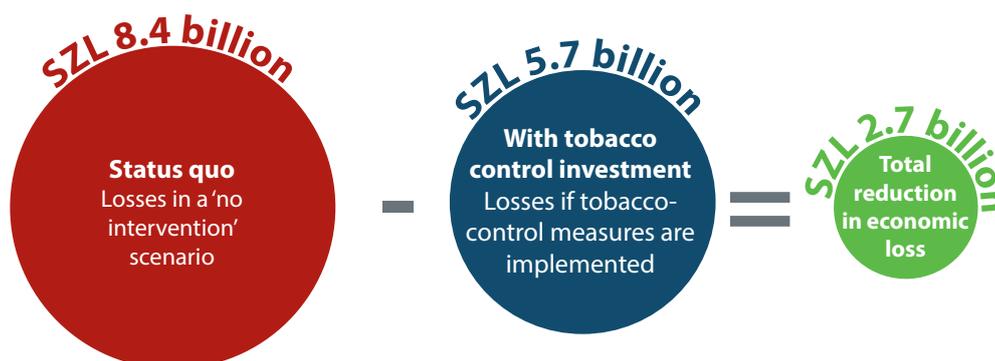
5.3 Health benefits—lives saved

Putting in place the full package of tobacco control measures (inclusive of all seven of the measures listed above) would lower the prevalence of tobacco use, leading to substantial health gains now and into the future. Specifically, enacting the package would reduce the prevalence of cigarette smoking by 59 percent (in relative terms) over 15 years, saving 3,368 lives from 2020-2034, or 225 lives annually.

5.4 Economic benefits—costs averted

Implementing the tobacco control policy package would result in Eswatini avoiding 32 percent of the economic loss that it is expected to incur from tobacco use over the next 15 years. **Figure 6** illustrates the extent to which Eswatini can shrink the economic losses it is expected to incur under the status quo.

Fig. 6: Tobacco-related economic losses over 15 years: What happens if Eswatini does nothing else, versus if the Government strengthens tobacco control measures to reduce demand for smoking?



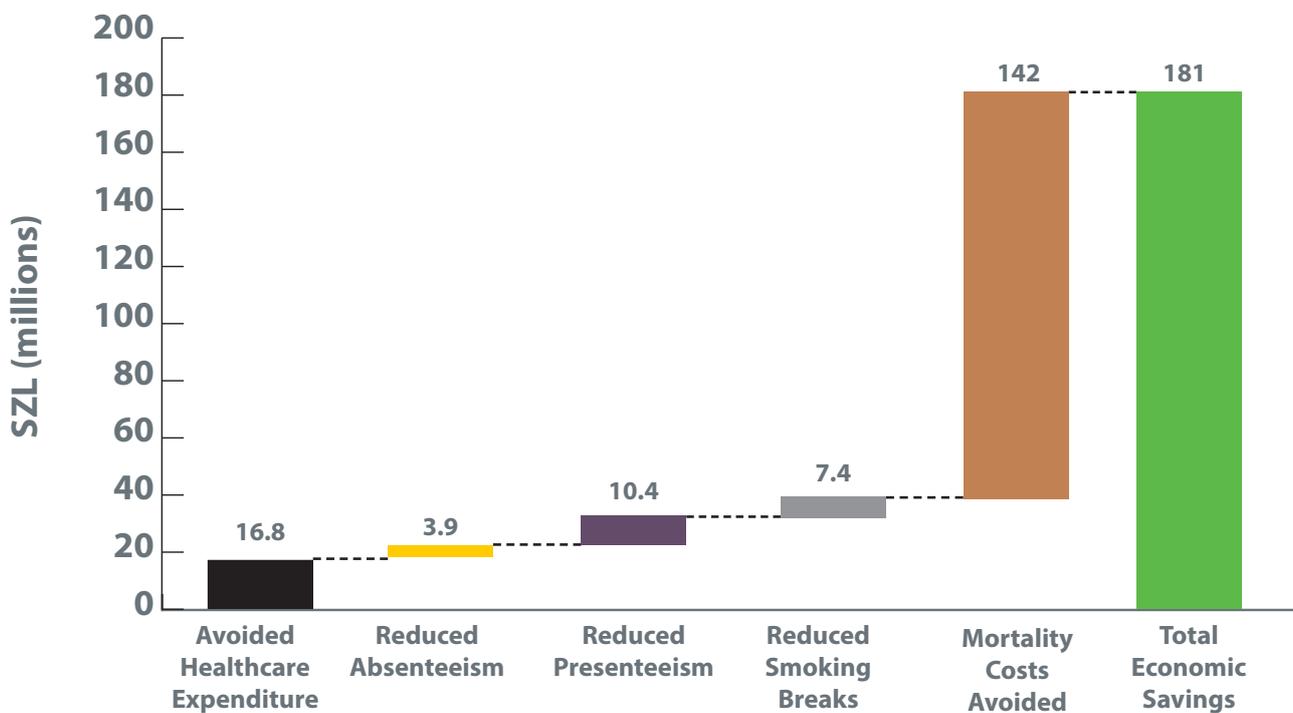
In total, over 15 years Eswatini would save about SZL 2.7 billion that would otherwise be lost if it does not implement the recommended package of tobacco control measures. These savings are equivalent to about SZL 181 million in annual avoided economic losses.

With better health, fewer individuals need to be treated for complications from disease, resulting in direct cost savings to the Government and to citizens. Better health also leads to increased productivity. Fewer working-age individuals leave the workforce prematurely due to death. Laborers miss fewer days of work (absenteeism) and are less hindered by health complications while at work (presenteeism). Finally, because the prevalence of smoking declines, fewer smoke breaks are taken in the workplace, further increasing productivity.

In addition to the savings from avoiding healthcare and productivity losses, increasing tobacco taxation would generate significant additional revenue that could be allocated to both the tobacco control measures recommended in this report, as well as broader efforts to respond to the COVID-19 pandemic and recover towards achievement of the Sustainable Development Goals. The 2015 Addis Ababa Action Agenda on financing for development [28] specifies that price and tax measures on tobacco represent a revenue stream to finance development in many countries. This report does not model the additional tax revenue Eswatini would gain by increasing taxes, particularly excise taxes, on tobacco products. However, experiences across the world demonstrate that governments reliably increase revenue through raised tobacco taxes, despite tobacco industry myths intended to protect its profits and preserve the status quo.

Figure 7 breaks down the sources from which annual savings accrue as a result of implementing the tobacco control policy package. The largest annual savings result from avoiding premature mortality (SZL 142 million). The next highest source of annual savings is avoided healthcare expenditures (SZL 16.8 million), followed by reduced presenteeism (SZL 10.4 million), reduced numbers of smoking breaks (SZL 7.4 million), and reduced absenteeism (SZL 3.9 million).

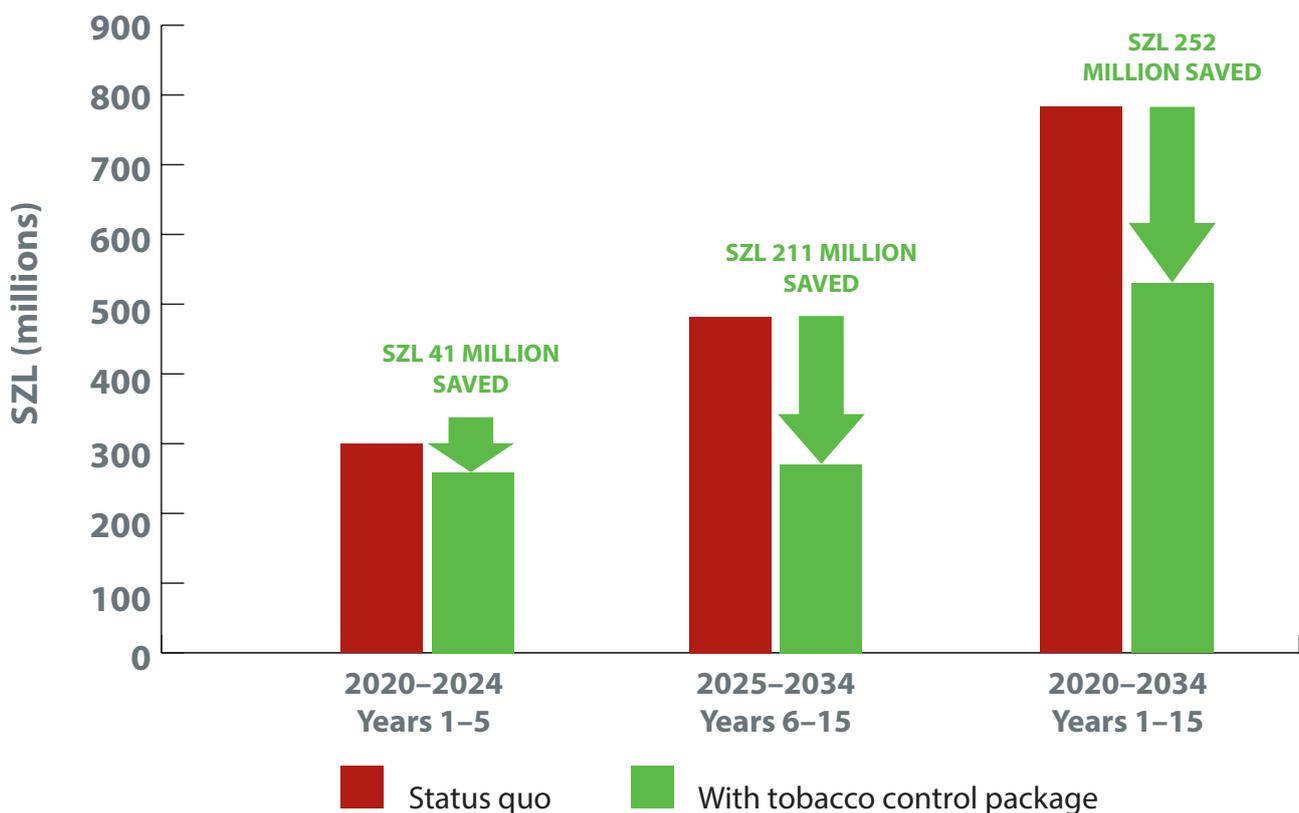
Fig. 7: Sources of annual economic savings as a result of implementing the tobacco control policy package



Implementing the package of tobacco control measures reduces medical expenditure for citizens and the Government. Presently, total private and public annual healthcare expenditures in Eswatini is about SZL 3.7 billion, 1.7 percent of which is directly related to treating disease and illness due to tobacco use [3] (\approx SZL 64 million).

Year-on-year, the package of interventions lowers tobacco use prevalence, which leads to less illness, and consequently less healthcare expenditure (see **Figure 8**). Over the 15-year time horizon of the analysis, the package of interventions averts SZL 252 million in healthcare expenditures, or SZL 16.8 million annually. Of this, 46 percent of savings accrue to the Government and 11 percent accrue to individual citizens who would have had to make out-of-pocket payments for healthcare, which can be impoverishing. The remainder of savings goes to private insurance and other sources of healthcare expenditures. Thus, from reduced healthcare costs alone, the Government stands to save about SZL 116 million over 15 years. Simultaneously, the Government would successfully reduce the health expenditure burden tobacco imposes on Eswatini's citizens, supporting efforts to reduce economic hardship on families. Rather than spending on treating avoidable disease and routinely spending on tobacco products, these families would be able to invest more in nutrition, education and other productive inputs to secure a better future.

Fig. 8: Private and public healthcare costs (and savings) over the 15-year time horizon



5.5 The return on investment (ROI)

An investment is considered worthwhile from an economic perspective if the gains from making it outweigh the costs. A return on investment (ROI) analysis measures the efficiency of the tobacco investments by dividing the economic benefits that are gained from implementing the FCTC tobacco control investments by the costs of the investments. For the Eswatini investment case, the ROI for each intervention was evaluated in the short-term (period of five years), to align with planning and political cycles, and in the medium-term (period of 15 years) to align with the SDGs. The ROI shows the return on investment for each intervention, and for the full package of measures. Total benefits are a measure of which interventions are expected to have the largest impact.

Table 2 displays costs, benefits and ROIs by intervention, as well as for all interventions combined. With the exception of training health professionals to provide brief advice to quit smoking (an individual-level intervention with higher initial personnel costs), all interventions deliver a ROI greater than one within the first five years, meaning that even in the short-term the benefits of implementing the interventions outweigh the costs. Depending on the intervention, over the first five years, the Government will recoup anywhere from 0.3 to 13.7 times its investment. The ROIs for each intervention continue to grow over time, reflective of the increasing effectiveness of policy measures as they move from planning and development stages, to full implementation.



Photo: © Terrence Franck via Flickr

Table 2: Return on investment, by tobacco control policy/intervention (SZL millions)

Return on investment, by tobacco control measure (SZL millions)	First 5 years (2020–2024)			All 15 years (2020–2034)		
	Total Costs (millions)	Net Benefits (millions)	ROI	Total Costs (millions)	Net Benefits (millions)	ROI
Tobacco control package* (all policies/interventions implemented simultaneously)	76	443	6	183	2,714	15
Warning labels (WHO FCTC Art. 11)	6	88	14	13	678	51
Protect people from tobacco smoke (WHO FCTC Art. 8)	11	117	10	23	891	38
Raise cigarette taxes (WHO FCTC Art. 6)	12	124	11	26	908	35
Bans on advertising, promotion, and sponsorship (WHO FCTC Art. 13)	6	59	9	14	459	33
Mass media campaign (WHO FCTC Art.12)	10	111	11	27	849	31
Plain packaging (WHO FCTC Article 11: Guidelines, and Article 13)	6	30	5	13	233	17
Cessation: brief advice to quit (WHO FCTC Art. 14)	17	5	0.3	51	85	1.7

*The combined impact of all interventions is not the sum of individual interventions. To assess the combined impact of interventions, following Levy and colleagues' (2018), "effect sizes [are applied] as constant relative reductions; that is, for policy i and j with effect sizes PR_i and PR_j, (1-PR_i) × (1-PR_j) [is] applied to the current smoking prevalence [29, p. 454]. The costs of the tobacco package include the costs of the examined policies, as well as programmatic costs to implement and oversee a comprehensive tobacco control program.

Over the 15-year period, the enforcement of rotating graphic warning labels is expected to have the highest return on investment (51:1).⁹ Implementing and enforcing bans on smoking in public places is expected to have the next highest return on investment (38:1), followed by increasing cigarette taxes (35:1), expanding and enforcing bans on tobacco advertising, promotion, and sponsorship (33:1), mass media campaigns (32:1), implementing plain packaging of tobacco products (17:1), and cessation by training health professionals to provide brief advice to quit smoking (2:1).

9 Rounded to the nearest whole number.

6. Examining additional impacts: Equity and the SDGs

Eswatini stakeholders expressed interest in analyzing other outcomes that can result from increasing tobacco taxes. The investment case examines the impact that increasing taxes has on low-income smokers. In addition, Section 6.2 describes the contributions that tobacco control measures make to Eswatini's fulfillment of the Sustainable Development Goals.

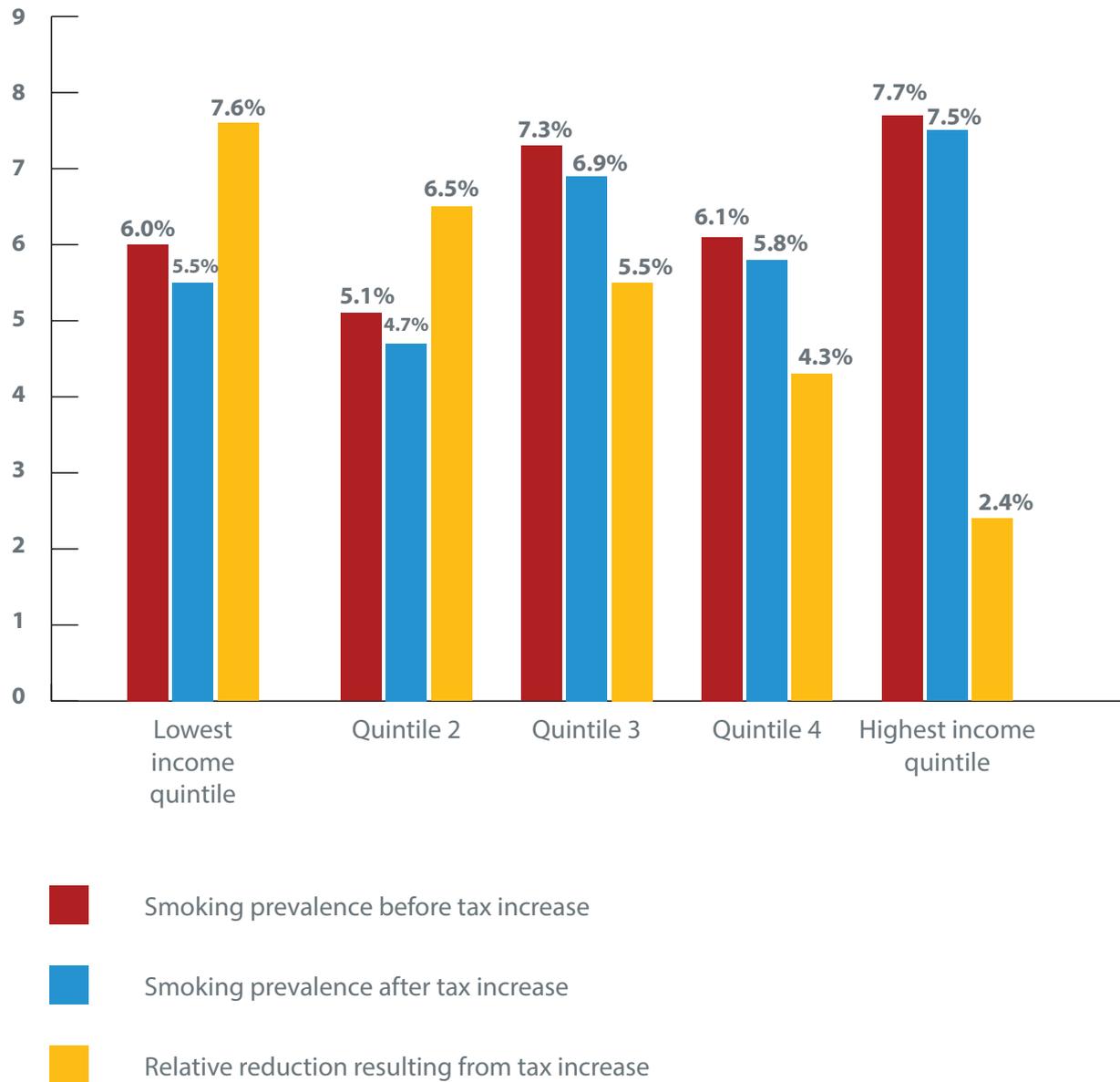
6.1 Equity analysis: the impact on low-income smokers of increasing cigarette taxes

A common misperception is that taxes on tobacco products may disproportionately impact poor tobacco users, since the tax burden represents a higher proportion of their income than that of wealthier tobacco users. However, evidence shows that the poor actually stand to benefit most from raised cigarette taxes [30]. Relative to richer smokers, poorer smokers are more likely to quit smoking when taxes are increased [31], meaning they benefit from subsequent decreases in tobacco-related health problems, and resulting medical costs. In Lebanon [32], for example, a 50 percent increase in cigarette prices was projected to prevent 23,000 new cases of poverty over 50 years, and that same level of increase was found to avert 2.1 million cases of catastrophic healthcare expenditure in India, 440,000 in Bangladesh, and 250,000 in Vietnam [33].

To examine the extent to which a cigarette tax increase could be considered pro-poor in Eswatini, the investment case undertakes an equity analysis. The analysis divides Eswatini's population into five equal groups, by income, where quintile 1 is composed of the poorest 20 percent of people, and quintile 5 is composed of the wealthiest 20 percent. Within each income group, the analysis examines the impact of a hypothetical one-year tax increase that raises the price of the average pack of cigarettes by about 20 percent (SZL 6.74, or about US\$ 0.40). This is representative of the first year of tax increases that are modeled in the investment case. Average tobacco-income elasticities from a set of low- and middle-income countries are employed to assess how different economic groups react to changes in price.

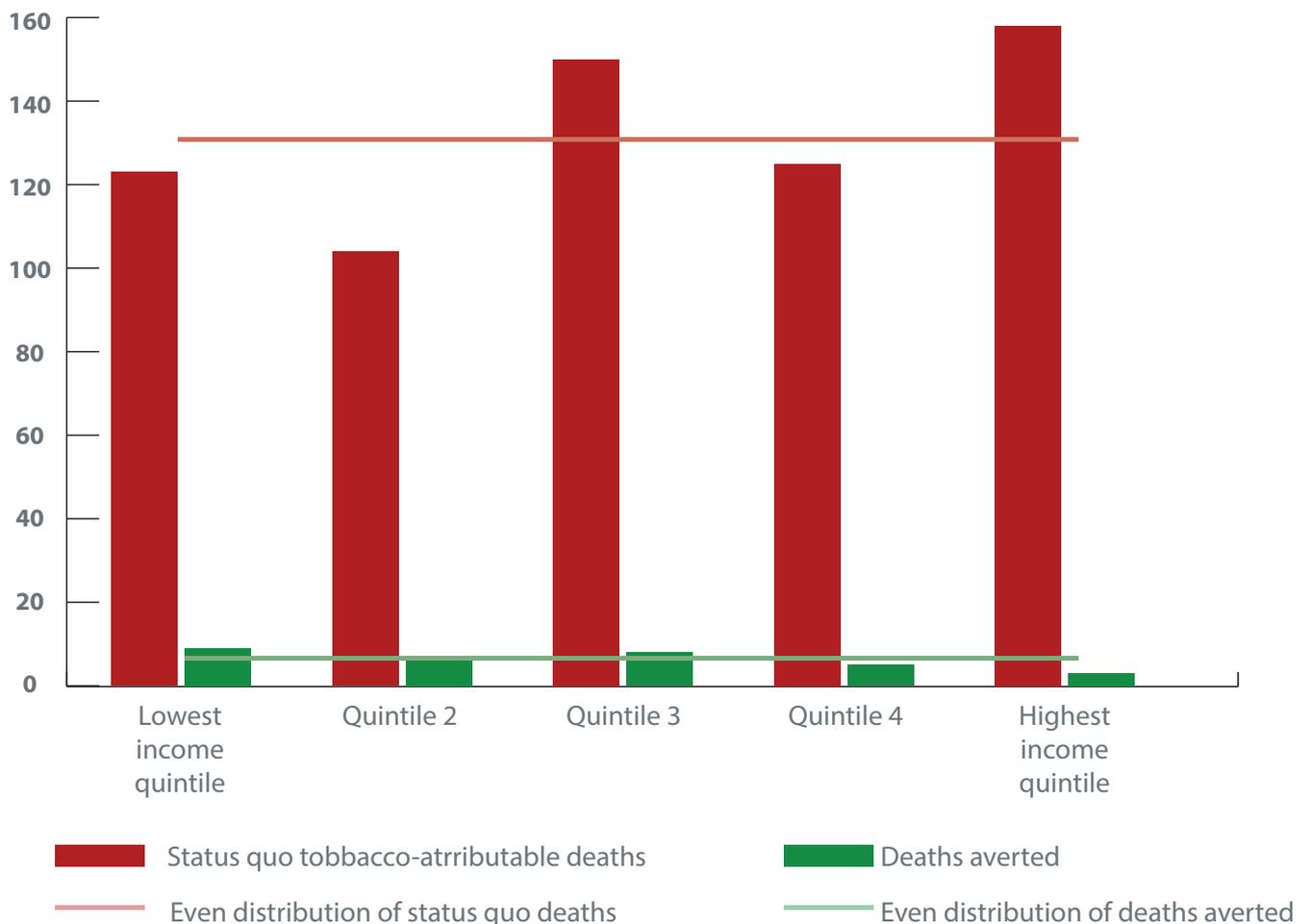
In Eswatini, there are not large differences in cigarette smoking prevalence between income quintiles, though the highest prevalence is seen in the wealthiest quintile (7.6 percent) [1]. The results from the analysis show that all income quintiles reduce smoking in response to the tax measures but, because people with lower incomes are more responsive to changes in price, the tax increase causes the largest drop in smoking prevalence among the poorest income quintiles.

Figure 9 shows the smoking prevalence in each income quintile before and after the tax increase, as well as the relative change in smoking prevalence.

Fig. 9: Smoking prevalence before and after the cigarette tax increase, by income quintile

Lower rates of smoking translate to health gains. Prior to the tax increase, of the 661 smoking- and second-hand smoke-attributable deaths observed in 2017, 34 percent occurred among the poorest 40 percent of the population (quintiles 1 and 2). However, because the tax increase causes smoking prevalence to fall the most in the two poorest quintiles, health benefits disproportionately accrue to the poor. The equity analysis finds that almost half (48 percent) of the 34 deaths that would be averted during the first year of tax increases modeled in the investment case would be among the poorest 40 percent of the population, as shown in **Figure 10**.

Fig. 10: Status quo deaths and deaths averted by tax increase, by income quintile¹⁰



¹⁰ The light red horizontal line shows what the number of status quo deaths would be if they were evenly distributed across the quintiles, and the light green line demonstrates the number of averted deaths if they were distributed evenly across quintiles.

6.2 The Sustainable Development Goals and the WHO FCTC

Enacting and strengthening seven measures designed to reduce demand for tobacco will support Eswatini in fulfilling SDG Target 3.a to strengthen implementation of the WHO FCTC. Moreover, acting now will contribute to Eswatini's efforts to meet SDG Target 3.4 to reduce by one-third premature mortality from NCDs by 2030. These health gains will support development more broadly, including reduction of poverty and inequalities (SDGs 1 and 10, respectively) and economic growth (SDG 8).

In Eswatini in 2017, over 2,700 premature deaths between the ages of 30 to 70 were caused by the four main NCDs (CVD, diabetes, cancer, and COPD) [2]. Roughly 10 percent of these premature deaths occurred due to tobacco use [2]. Enacting the WHO FCTC measures identified in the investment case would reduce tobacco use prevalence—a key risk factor driving NCD incidence—preventing 892 premature deaths from the four main NCDs over the 2020-2030 period. Preventing those deaths contributes the equivalent of about 9 percent of the needed reduction in premature mortality for Eswatini to achieve SDG Target 3.4.



SDG Target 3.4

By 2030 the FCTC measures would...

Lower the prevalence of tobacco use nearly 57 percent from present day levels.

Reduce economic costs due to tobacco use by SZL 2.1 billion, including saving SZL 193 million in healthcare expenditures.

Lead to savings (SZL 2.1 billion) that significantly outweigh the costs (SZL 155 million), with an overall return on investment of 13:1.

7. Conclusion and recommendations

Each year, tobacco use costs Eswatini SZL 684 million in economic losses and causes substantial human development losses. Fortunately, the investment case shows that there is an opportunity to reduce the social and economic burden of tobacco in Eswatini. Enacting the recommended multisectoral tobacco control provisions would save over 200 lives each year and reduce the incidence of disease, leading to savings from averted medical costs and averted productivity losses. In economic terms, these benefits are substantial, adding to SZL 2.7 billion over the next 15 years. Further, the economic benefits of strengthening tobacco control in Eswatini greatly outweigh costs of implementation (SZL 2.7 billion in benefits versus just SZL 183 million in costs).

By investing now in the seven proven tobacco control measures modeled under this investment case, Eswatini would not only reduce tobacco consumption, improve health, reduce government health expenditures and grow the economy, it would also reduce hardships among Eswatini, particularly among low-income populations. Many countries reinvest savings from healthcare expenditures and revenue from increased tobacco taxes into national development priorities such as social protection including universal health coverage, which the Eswatini government is committed to achieve.

The investment case has identified strong tobacco control investments that Eswatini can make. It offers compelling economic and social arguments to implement core WHO FCTC measures. The full benefits of the investment case are more likely to be realized if the following actions are pursued:



Utilise the ongoing NCM process to strengthen tobacco control coordination and strategy

Eswatini has already shown commitment towards establishing robust structures for governing tobacco control policies. The country has a designated focal point for tobacco control, and has approved – although not fully implemented – the creation of a tobacco fund and is collaborating closely with UNDP to reactivate its national coordinating mechanism (NCM) for tobacco control. The Government of Eswatini should drive the development of a national multisectoral tobacco control strategy in tandem with reactivation of the NCM. In consideration of the Government's limited human and financial resources, and limited previous multisectoral engagement on tobacco control, the strategy should be used foremost as a tool for fostering collaboration between government sectors and building capacity for implementation.

A simple, but workable strategy, supported by a wide range of government stakeholders and a feasible and effective strategy supported by a realistic budget is far more likely to promote sustained stakeholder engagement than a strategy that is comprehensive but not viable. The strategy could build on the completed WHO FCTC needs assessment, Global Youth Tobacco Survey (GYTS) and STEP surveys which have collectively highlighted the tobacco use burden and trends as well as gaps and good practices in WHO FCTC implementation.



Take action to shield policymaking from industry interference

If the Government of Eswatini chooses to drive comprehensive tobacco control measures to protect its population, both now and in the future, it is likely to face fierce resistance from the tobacco industry. For this reason, the Government may wish to grow momentum for reactivation of the NCM to enact measures to mitigate tobacco industry interference – pursuant to Article 5.3 of the WHO FCTC. These should include, at minimum, national guidelines for Article 5.3 implementation and a code of conduct for NCM members aimed at addressing conflicts of interest involving government and industry.



Build capacity in monitoring and implementation of tobacco control regulations

Insufficient capacity in human resources, financing, data management and organizational processes is a major obstacle for tobacco control, including stronger legislation, in Eswatini. If Government capacity does not increase, more legislation will only result in a wider implementation gap. Building tobacco control capacity can have a spillover effect on capacity in other policy areas, as civil servants build translatable expertise in a range of techniques from planning to data collection and processing.

Given limited resources, Eswatini may achieve the greatest gains in making more efficient use of current resources while laying the groundwork for strengthened capacity. Immediate or short-term actions might include leveraging the technical support of UNDP and the Secretariat of the WHO FCTC as well as other international and regional partners to build the capacity of public officials responsible for tobacco control. The Government may wish to convey its policy priorities in tobacco control to higher education institutions and agree on a set of actions to bolster local expertise. This could include: setting up research groups on priority policy areas; linking local

academics with regional research teams working on tobacco control, for example the WHO FCTC Secretariat-funded Research Unit on the Economics of Excisable Products team in South Africa; and organizing traineeships in tobacco control for students of law, public policy, medicine and other areas important for tobacco control. A clear understanding of existing capacity gaps as well as good practices to scale up can support strategic allocation of limited funds.



Increase taxes on all tobacco products to at least 75 percent of the retail price

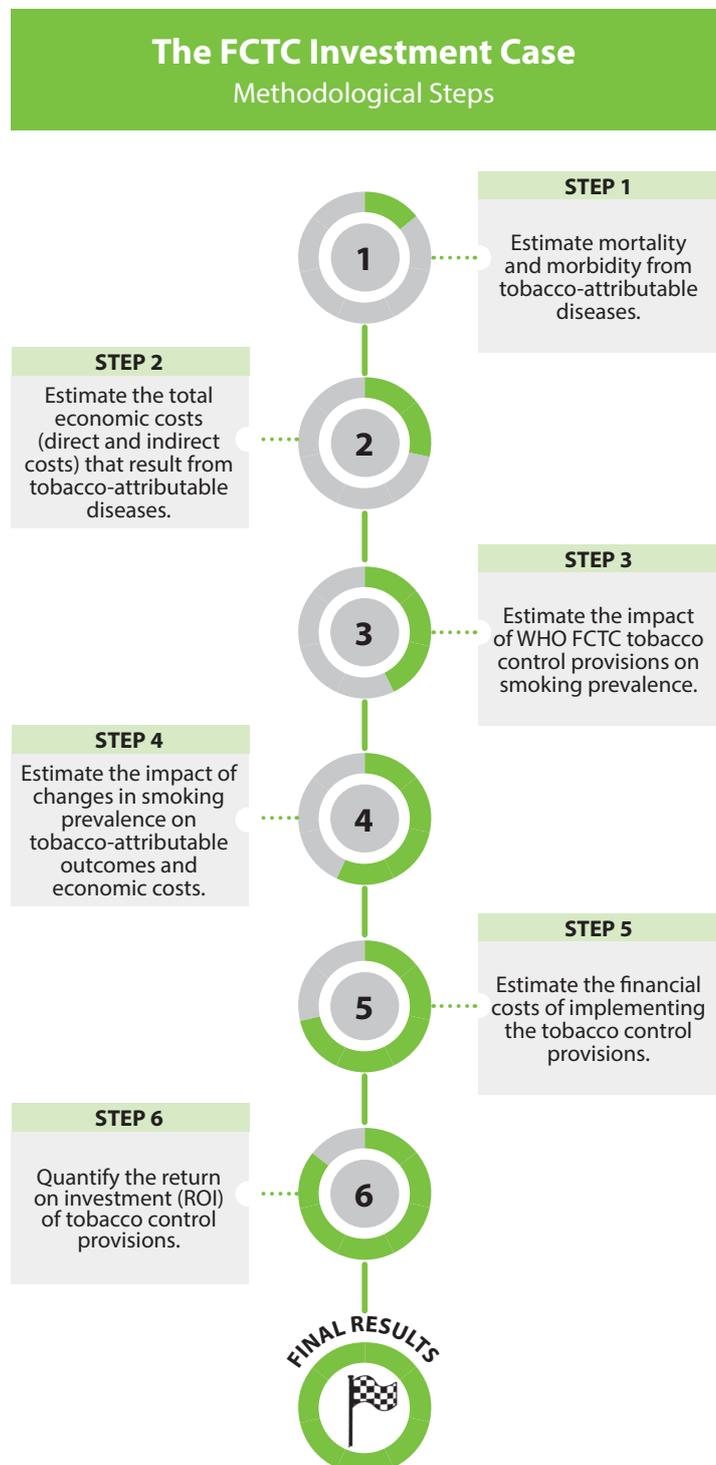
Comprehensive tax increases on all tobacco products in Eswatini can simultaneously reduce consumption of a costly product and provide a reliable source of Government revenue, particularly for currently underfunded tobacco control activities. Excise taxes now represent over 50 percent of the retail price of cigarettes in Eswatini but the Government can do more to protect its citizens from the dangers of tobacco by raising them to (or above) the WHO FCTC benchmark of at least 75 percent inclusive of at least a 70 percent specific excise component. The benefits of comprehensive and stronger tobacco taxes can be increased further by taking complementary action to combat illicit trade, including in cooperation with other Southern Africa Customs Union (SACU) countries, especially South Africa, with which Eswatini shares the longest border. Considering reported staff shortage and limited funding available, the Government may wish to focus on improving the labelling process and increasing efficiency in excise tax collection to focus initially on digitization.

8. Methodology annex

8.1 Overview

The economic analysis consists of two components: 1) assessing the current burden of tobacco use and 2) examining the extent to which FCTC provisions can reduce the burden. The first two methodological steps depicted in **Figure A1** are employed to assess the current burden of tobacco use, while methodological steps 3-6 assess the impact, costs, and benefits of implementing or intensifying FCTC provisions to reduce the demand for tobacco. The tools and methods used to perform these methodological steps are described in detail below.

Fig. A1: Steps in the FCTC investment case



**8.2 COMPONENT ONE:
CURRENT BURDEN**

The current burden model component provides a snapshot of the current health and economic burden of tobacco use in Eswatini.



STEP 1

Estimate mortality and morbidity from tobacco-related diseases.

The investment case model is populated with country-specific data on tobacco attributable mortality and morbidity from the 2017 Global Burden of Disease Study (GBD) [34]. The study estimates the extent to which smoking and secondhand tobacco smoke exposure contribute to the incidence of 37 diseases, healthy life years lost, and deaths, across 195 countries.



STEP 2

Estimate the total economic costs (direct and indirect costs) that result from tobacco-attributable diseases.¹¹

Next, the model estimates the total economic costs of disease and death caused by tobacco use, including both direct and indirect costs. Direct refers to tobacco-attributable healthcare expenditures. Indirect refers to the value of lives lost due to tobacco-attributable premature mortality, and labor-force productivity losses: absenteeism, presenteeism, and excess breaks due to smoking.

Direct costs — Direct costs include tobacco-attributable public (government-paid), private (insurance, individual out-of-pocket), and other healthcare expenditures. The proportion of healthcare costs attributable to smoking was obtained from Goodchild et al. (2018), who estimate the smoking attributable fraction (SAF) of healthcare expenditures for most countries [3]. The Goodchild paper estimates that 1.7 percent of total healthcare expenditures are attributable to smoking in Eswatini. To calculate the share of smoking-attributable healthcare expenditures borne by public, non-profit, and private entities, it was assumed that each entity incurred smoking-

¹¹ In assessing the current burden of tobacco use, the economic costs of premature mortality include the cost of premature deaths due to any form of exposure to tobacco (including of smoking, secondhand smoke exposure, and the use of other types of tobacco products). Only smoking-attributable (not tobacco-attributable) costs are calculated for healthcare expenditures, absenteeism, presenteeism, and smoking breaks. While other forms of tobacco may also cause losses in these categories, no data is available to precisely ascertain those losses.

attributable healthcare costs in equal proportion to its contribution to total health expenditure. Government healthcare expenditures were obtained from the government accounting system provided by Eswatini (46 percent of total), and private insurance expenditures, household out-of-pocket expenditures, and other healthcare expenditures were obtained from the WHO Global Health Expenditure Database (GHED) (40 percent, 12 percent, and 2 percent of total, respectively) [39].

Indirect costs — Indirect costs represent the monetized value of lost time, productive capacity, or quality of life as a result of tobacco-related diseases. Indirect costs accrue when tobacco use causes premature death, eliminating the unique economic and social contributions that an individual would have provided in their remaining years of life. In addition, tobacco use results in productivity losses. Compared to non-tobacco users, individuals who use tobacco are more likely to miss days of work (absenteeism); to be less productive at work due tobacco-related illnesses (presenteeism); and to take additional breaks during working hours in order to smoke.

- *The economic cost of premature mortality due to tobacco use* — Premature mortality is valued using the human capital approach, which places an economic value on each year of life lost. Using GBD data on the age at which tobacco-attributable deaths occur, the model calculates the total number of years of life lost due to tobacco, across the population. Each year of life is valued at 1.4 times GDP per capita, following the ‘full income approach’ employed by Jamison et al (2013) [36].
- *Productivity costs* — Productivity costs consist of costs due to absenteeism, presenteeism, and excess work breaks due to smoking. The model incorporates estimates from academic literature on the number of extra working days missed due to active smoking (2.9 days per year) [37]. Presenteeism losses are obtained similarly, under research that shows that smokers in China, the US, and five European countries experience about 22 percent more impairment at work because of health problems compared to never-smokers [38]. Lost productivity due to smoking breaks is valued under the conservative assumption that working smokers take ten minutes of extra breaks per day [27].

This component estimates the effects of WHO FCTC tobacco control measures on mortality and morbidity, as well as on total economic costs (direct and indirect) associated with tobacco use. The investment case employs a static model to estimate the total impact of the tobacco control measures, meaning that aside from smoking prevalence, variables do not change throughout the time horizon of the analysis. The model follows a population that does not vary in size or makeup (age/gender) over time in two scenarios: a status quo scenario in which smoking prevalence remains at present day rates, and an intervention scenario in which smoking prevalence is

reduced according to the impact of tobacco control measures that are implemented or intensified. Published studies have used similarly static models to estimate the impact of tobacco control measures on mortality and other outcomes [31], [32].

Within the investment case, the mortality and morbidity, as well as economic costs that are computed in the intervention scenario are compared to the status quo scenario to find the extent to which tobacco control measures can reduce health and economic costs.

8.3 COMPONENT TWO: POLICY/INTERVENTION SCENARIOS	This component estimates the effects of WHO FCTC tobacco control measures on mortality and morbidity, as well as on total economic costs (direct and indirect) associated with tobacco use.
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The investment case employs a static model to estimate the total impact of the tobacco control measures, meaning that aside from smoking prevalence, variables do not change throughout the time horizon of the analysis. The model follows a population that does not vary in size or makeup (age/gender) over time in two scenarios: a status quo scenario in which smoking prevalence remains at present day rates, and an intervention scenario in which smoking prevalence is reduced according to the impact of tobacco control measures that are implemented or intensified. Published studies have used similarly static models to estimate the impact of tobacco control measures on mortality and other outcomes [39, 40].

Within the investment case, the mortality and morbidity, as well as economic costs that are computed in the intervention scenario are compared to the status quo scenario to find the extent to which tobacco control measures can reduce health and economic costs.

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Selection of priority WHO FCTC measures modeled within the investment case align with the Global Strategy to Accelerate Tobacco Control developed following a decision at the seventh session of the Conference of the Parties (COP7) to the WHO FCTC. Under Objective 1.1 of the strategy, Parties seek to accelerate WHO FCTC implementation by setting clear priorities where they will be likely to have the greatest impact in reducing tobacco use. This includes priority implementation of price and tax measures (Article 6) and time-bound measures of the Convention, including bans on

smoking in all public places (Article 8), health warnings and plain tobacco packaging (WHO FCTC Articles 11 and 13), and comprehensive bans on tobacco advertising, promotion and sponsorship (Article 13). In addition, given the importance of awareness in behavior change and shaping cultural norms, the investment cases include instituting mass media campaigns against tobacco use (WHO FCTC Article 12). The impacts of implementing the WHO FCTC provisions are obtained from the literature. The impact of enforcing smoke-free air laws, implementing plain packaging, intensifying advertising bans, and conducting mass media campaigns are derived from Levy et al. (2018) [30] and Chipty (2016) [42], as adapted within the Tobacco Use Brief of Appendix 3 of the WHO Global NCD Action Plan 2013-2020 [42], and adjusted based on assessments of Eswatini's baseline rates of implementation.

Within the analysis, it is assumed that implementation of new tobacco control measures or intensification of existing ones does not take place until year three. With the exception of taxes—the impact of which is dependent on the timing of increases in tax rates (described below)—the full impact of the measures is phased in over a five-year period. The phase-in period follows WHO assumptions [40] that two years of planning and development are required before policies are up and running, followed by three years of partial implementation that are reflective of the time that is needed to roll out policies, and work up to full implementation and enforcement. Table A1 displays the impact sizes used within the investment case analysis. Additional information on their derivation can be found in the Technical Appendix.

Tobacco taxes. The impact of cigarette tax increases on prevalence is estimated using an Excel-based tool developed to analyze the impact of tax increases on a fixed population cohort over 15 years. The tool is populated with data, including on current cigarette smoking prevalence, the tax structure and applied tax rates, cigarette prices, prevalence elasticity, and inflation and income projections.

We extract the average price, net of taxes, of the most sold brand of cigarettes from Eswatini's 2019 tobacco country profile. We inflate the "producer price" to current currency units and add applied taxes—a specific excise tax of SZL 10.32 is levied on each cigarette pack, as well as a 15 percent value added tax [44, 45]—to arrive at a total price per pack of about SZL 35. A tax increase scenario was constructed to accord with meeting FCTC and WHO targets (taxes equivalent to at least 75 percent of the retail price of tobacco products, and specific excise taxes equivalent to 70 percent of the retail price) by 2034. Beginning in 2022, specific excise taxes are steadily raised (on average SZL 5.7 annually), tripling the cost of a pack of cigarettes by 2034—a real increase of SZL 73.

The prevalence impact of the annual increases in cigarette taxes depends on the prevailing prevalence elasticity: the extent to which individuals cease smoking as a result of changes in the price of tobacco product. No recent evidence on prevalence elasticity is found in Eswatini. Price elasticity in developing countries is found to commonly fall within the range -0.4 to -0.8 [23]. We assume that price elasticity is -0.5 and that prevalence elasticity is approximately one-half of price elasticity (-0.25) [46].

Changes in the prevalence of tobacco use are calculated following Joosens and colleagues (2009) [47], who use a log-log function to ensure that large price increases do not result in implausible reductions in prevalence. The income price elasticity of demand is assumed to be 0.5 [48], and income prevalence elasticity is assumed to be 0.25.

$$\Delta SP_i = SP_{i-1} * ((EXP(\epsilon_p * LN(op_{np}))) - 1 - \left[\frac{1 + \epsilon_i \left(\frac{GDP_2 - GDP_1}{GDP_2 + GDP_1} \right)}{1 - \epsilon_i \left(\frac{GDP_2 - GDP_1}{GDP_2 + GDP_1} \right)} \right])$$

Where:

SP = smoking prevalence (# of smokers) in year i

ϵ_p = prevalence elasticity

Op_np = the ratio of the old price of a pack of cigarettes to the new price after tax increases

ϵ_i = income elasticity

GDP = Gross domestic product in year

Table A1: Impact size: Relative reduction in the prevalence of current smoking by tobacco control policy/intervention, over a period of 15 years

WHO FCTC Measure	Relative reduction in the prevalence of current smoking	
	First 5 Years (2020–2024)	Over 15 Years (2020–2034)
Tobacco Control Package (all policies)	36%	59%
Increase cigarette taxes (<i>WHO FCTC Art. 6</i>)	9%	21%
Implement and enforce bans on smoking in public places and workplaces (<i>WHO FCTC Art. 8</i>)	10%	17%
Mandate that tobacco product packages carry large health warnings (<i>WHO FCTC Art. 11</i>)	7%	12%
Plain packaging of tobacco products (<i>WHO FCTC Article 11: Guidelines, and Article 13</i>)	2%	4%
Run a mass media campaign to promote awareness about tobacco control (<i>WHO FCTC Art.12</i>)	9%	16%
Enact comprehensive bans on advertising, promotion, & sponsorship (<i>WHO FCTC Art. 13</i>)	5%	8%
Cessation: Brief advice to quit tobacco use (<i>WHO FCTC Art. 14</i>)	0.4%	3%

* The combined impact of all interventions is not the sum of individual interventions. Following Levy and colleagues' (2018) "effect sizes [are applied] as constant relative reductions; that is, for policy i and j with effect sizes PR_i and PR_j, (1-PR_i) x (1-PR_j) [is] applied to the current smoking prevalence" [29, p. 454].



STEP 4

Estimate the impact of changes in smoking prevalence on tobacco-attributable health outcomes and economic costs.

To analyze the impact of policy measures on reducing the health and economic burden of smoking, the investment case calculates and compares two scenarios. In the status quo scenario, current efforts are 'frozen', meaning that, through the year 2034 (end of the analysis), no change occurs from the tobacco control provisions that are currently in place. In the intervention scenario, Eswatini implements new tobacco measures or intensifies existing ones, to reduce the prevalence of smoking. The difference in health and economic outcomes between the status quo and intervention scenarios represents the gains that Eswatini can achieve by taking targeted actions to reduce tobacco use.

The marginal effects of the policies are calculated using the status quo scenario as the comparison group. To calculate marginal effects, the model subtracts the outcome (risk factor attributable deaths, healthcare expenditures, etc.) under the intervention scenario from the same outcome under the status quo scenario. The difference between the two outcomes is the amount of change in the outcome associated with the policy.

$$\text{Marginal Effects} = \text{Outcome Base Scenario} - \text{Outcome Intervention Scenario}$$

Marginal effects are calculated as follows for each outcome:

- **Health outcomes:** To calculate the reductions in mortality and morbidity due to implementation of the policy measures, forecasted changes in smoking prevalence are applied directly to the GBD risk factor attributable outcomes from the status quo scenario. This means that the model adjusts the risk factor attributable outcomes for mortality and morbidity as reported by GBD based on year-over-year relative changes in smoking prevalence for each outcome.
- **For healthcare expenditures,** the model applies forecasted annual relative changes in smoking prevalence for each intervention scenario to the SAFs. SAFs are adjusted in proportions equal to the relative change in smoking prevalence for each intervention scenario.
- **Workplace smoking outcomes** are recalculated substituting actual (status quo) smoking prevalence for estimated annual smoking prevalence for each of the intervention scenarios that are modeled.



STEP 5

Estimate the financial costs of implementing the tobacco control policies and interventions modeled, both individually and collectively.

The financial costs to the government of implementing new measures—or of intensifying or enforcing existing ones—is estimated using the WHO NCD Costing Tool. Full explanations of the costs and assumptions embedded in the WHO NCD Costing tool are available [43].

The Tool uses a ‘bottom up’ or ‘ingredients-based’ approach. In this method, each resource that is required to implement the tobacco control measure is identified, quantified, and valued. The Tool estimates the cost of surveillance, human resources—for program management, transportation, advocacy, and enacting and enforcing legislation—, trainings and meetings, mass media, supplies and equipment, and other components. Within the Tool, costs accrue differently during four distinct implementation phases: planning (year 1), development (year 2), partial implementation (years 3-5), and full implementation (years 6 onward).

Across these categories, the Tool contains default costs from 2011, which are sourced from the WHO CHOICE costing study [54]. Following Shang and colleagues, the Tool is updated to reflect 2018 costs by updating several parameters: the US\$ to local currency unit exchange rate (2018), purchasing power parity (PPP) exchange rate (2018), GDP per capita (US\$, 2017), GDP per capita (PPP, 2018), population (total, and share of the population age 15+, 2017), labor force participation rate (2018), gas per liter, and government spending on health as a percent of total health spending [55, p. 5]. Unless government or other in-country parameters are received, data is from the World Bank database, with the exception of data on the share of government health spending and population figures. The share of government spending on health as a percent of total health spending is derived from the WHO Health Expenditures database, and population figures are from the UN Population Prospects.



STEP 6

Quantify the return on investment (ROI) for the various tobacco control policies and interventions modeled, both individually and collectively.

The return on investment (ROI) analysis measures the efficiency of tobacco control investments by dividing the discounted monetary value of health gains from investments by their discounted respective costs.

ROIs were calculated for each of the seven tobacco control policies modeled, and for the seven interventions together as a package. Estimates from Step 3 and 4, were used to calculate ROIs at 5- and 15-year intervals.

$$\text{Return on investment (ROI)} = \frac{\text{Benefits of Intervention/Policy}}{\text{Costs of Implementing Intervention/Policy}}$$

8.4 Elasticities of tobacco demand and the equity analysis

To assess how increased cigarette taxation affects different income groups, different income groups' responses to changes in price were estimated, i.e. their elasticity of smoking participation. No studies were identified that examine the elasticity of smoking participation in Eswatini. Instead, the analysis used an average from low- and middle-income countries identified by the International Agency for Research on Cancer's Handbook of Cancer Prevention Volume 14: Effectiveness of Tax and Price Policies for Tobacco Control [50]. Some of the studies in **Table A2** below did not report elasticity by income quintile, instead reporting by income tertile, for example. In order to construct this table, adjustments to the data were made as needed. In the case of tertiles, tertile 1 was assigned to quintile 1, tertile 2 to quintile 3, and tertile 3 to quintile 5. Then, quintile 2 was given as the average of tertiles 1 and 2, and quintile 4 was given as the average of tertiles 2 and 3.

Table A2: Elasticity of smoking participation studies

Country	Author	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
Myanmar	Kyaing [51]	-1.09	-1.25	-1.41	-1.38	-1.24
Nepal	Karki [52]	-0.31	-0.26	-0.35	-0.35	-0.31
Vietnam	Kinh [53]	-0.65	-0.65	-0.54	-0.42	-0.42
Bangladesh	Nargis [54]	-0.33	-0.47	-0.27	-0.21	-0.14
Sri Lanka	Arunatilake [55]	-0.37	-0.35	-0.31	0.02	0.06
Sri Lanka	Arunatilake [56]	-0.17	0.17	0.21	0.01	0.34
Ukraine	Krasovsky [57]	-0.19	-0.20	-0.21	-0.17	-0.12
Ukraine	Krasovsky [57]	-0.14	-0.15	-0.17	-0.12	-0.08
China	Mao [58]	-0.95	-0.67	-0.39	-0.07	0.26
China	Mao [59]	-0.08	-0.04	-0.01	0.06	0.13
Egypt	Nassar [60]	-0.30	-0.33	-0.33	-0.33	-0.32
Thailand	Isra [61]	-0.50	-0.18	-0.07	-0.05	-0.02
Thailand	Isra [61]	-0.25	-0.03	-0.02	-0.08	-0.04
Indonesia	Adioetomo [62]	-0.03	0.03	0.09	0.15	0.20
South Africa	van Walbeek [63]	-0.70	-0.57	-0.55	-0.54	-0.41
Turkey	Onder [64]	-0.12	-0.32	-0.11	-0.02	0.15
Average		-0.38	-0.33	-0.28	-0.22	-0.12

Cigarette smoking prevalence by income quintile was obtained from the Eswatini Multiple Indicator Cluster Survey (MICS) 2014 Final Report, which included respondents aged 15 to 49 [1]. The analysis assumes that smoking prevalence identified among those aged 15 to 49 in the survey applies to the whole population aged 15 and above.

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