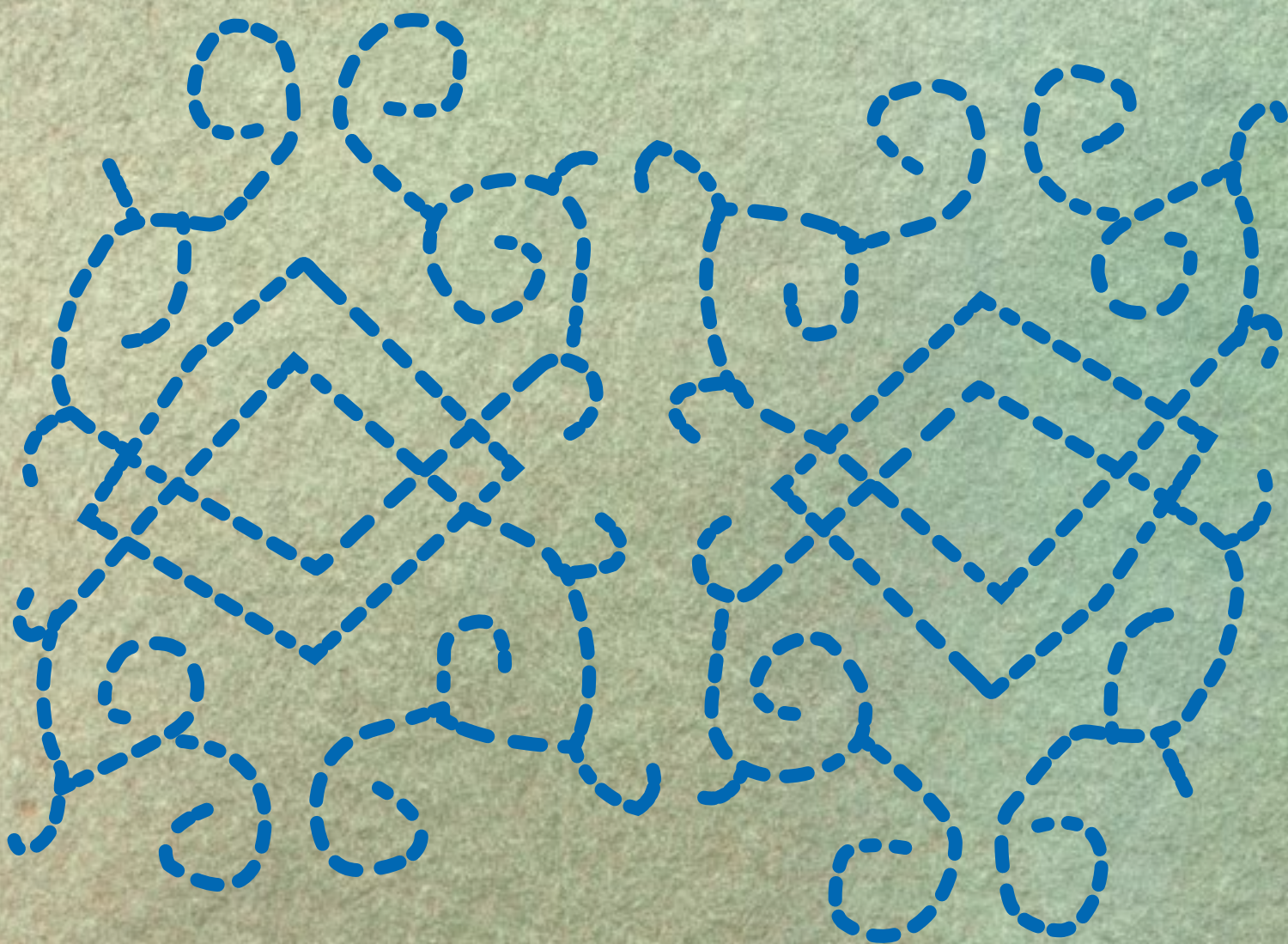


Investment Case for
Tobacco Control in
MONGOLIA



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**Investment Case for
Tobacco Control in**

MONGOLIA

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

Investment Case for Tobacco Control in Mongolia

Nearly

4,300

Mongolians die every year due to tobacco-related illness, accounting for

17% of all deaths in the country.



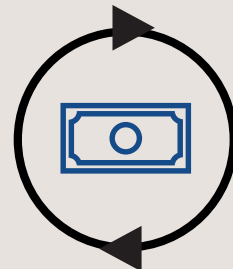
Investing now in six proven tobacco control measures will prevent more than

19,200 deaths

and avert

MNT 2.4 trillion

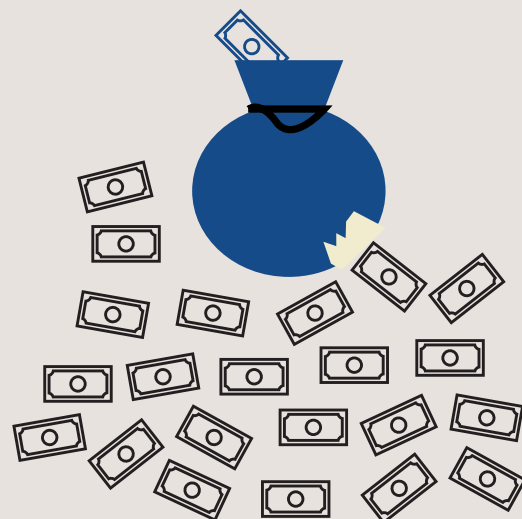
in economic losses by 2037.



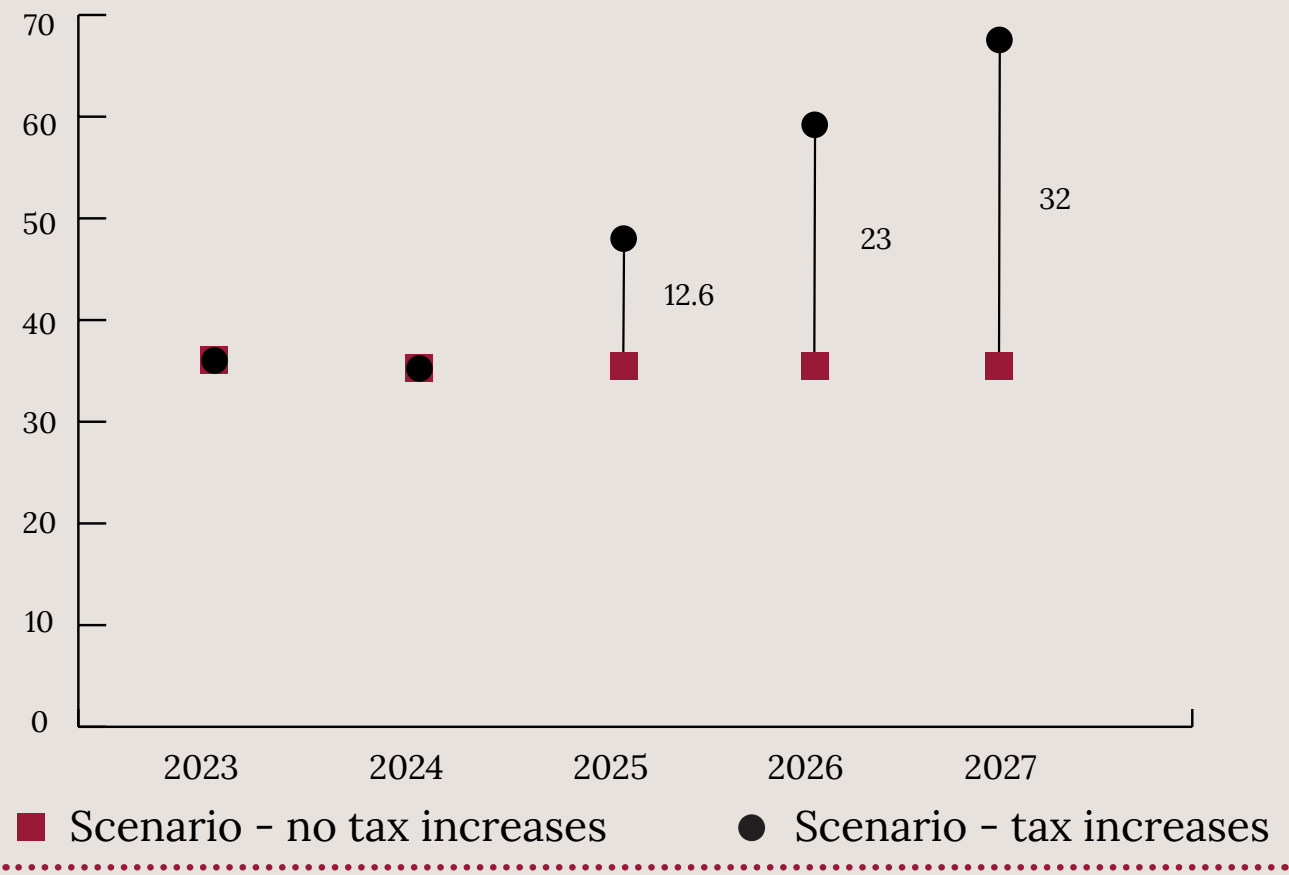
Tobacco-attributable economic losses are about

22 times larger

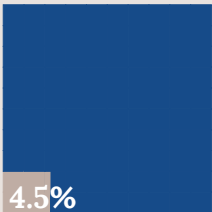
than the collected government revenue.



Additional annual tax revenue (in MNT billions) in comparison to the baseline scenario, 2023-2027



Government tobacco tax revenue as a % of the tobacco burden



MNT 23,332



Burden

MNT 2,300



Retail price

Burden per
licit cigarette
pack sold
versus retail
price of most
sold brand
(MNT)

Tobacco costs
Mongolia around
**8.1 billion
Mongolian tögrög
(MNT) every year,**
equivalent to **2.1%**
of annual GDP

Costs per adult smoker

MNT 1,487,920

Figures subject to rounding.

Acknowledgements

This report was completed through collaborative efforts of the Mongolia Ministry of Health, the United Nations Development Programme (UNDP), the Secretariat of the WHO Framework Convention on Tobacco Control (WHO FCTC), and the World Health Organization (WHO).

The report has been made possible through the FCTC 2030 project which is generously funded by the Governments of Australia, Norway and the United Kingdom.

Contributors include Dr Unurjargal Ayurzana and Dr Bayarbold Dangaa from the Mongolia Ministry of Health; Daniel Grafton, Lin Cao, Daisy Lanvers, Barkhas Losolsuren, Mashida Rashid, Emily Roberts, Rachael Stanton, Dudley Tarlton, and Kazuyuki Uji from UNDP; Adriana Blanco Marquizo, Andrew Black, Tih Ntiabang and Ryan Forrest from the Secretariat of the WHO FCTC; Dr Sergey Diorditsa (former WHO representative), Dr Socorro Escalante and Bolormaa Sukhbaatar from the WHO Mongolia Country office.

The economic modelling was performed by Brian Hutchinson and Garrison Spencer. Additional research and drafting contributed by Blanca Anton, Zoe Miriam Cohen and Xicheng Nie. Zsuzsanna Schreck did the graphic design and laid out the report.

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This tobacco control investment case highlights the enormous costs of tobacco in Mongolia and the set of recommended policy actions that will deliver substantial economic and public health benefits to the country. The implementation of effective tobacco control policies from the WHO Framework Convention on Tobacco Control can play an important role in strengthening sustainable development in Mongolia.





Executive summary

Overview

Tobacco is a significant threat to health and sustainable development. Tobacco causes premature death and preventable disease that results in high health costs and economic losses, widens socioeconomic inequalities, and impedes progress across the Sustainable Development Goals (SDGs).

This report summarizes the costs and benefits—in health and economic terms—of implementing six key policy actions of the WHO Framework Convention on Tobacco Control (WHO FCTC) that focus on demand reduction. The six measures are:

- 1) **Increasing tobacco taxation to reduce the affordability of tobacco products** (*WHO FCTC Article 6*).
- 2) **Expanding and enforcing 100 percent smoke-free public places and workplaces to protect people from the harms of tobacco smoke** (*WHO FCTC Article 8*).
- 3) **Implementing plain packaging of tobacco products** (*WHO FCTC Guidelines for implementation of Article 11 and WHO FCTC Guidelines for implementation of Article 13*).
- 4) **Enacting and enforcing a comprehensive ban on all forms of tobacco advertising, promotion, and sponsorship (TAPS)** (*WHO FCTC Article 13*).
- 5) **Promote and strengthen public awareness of tobacco control issues, including the health risks of tobacco use and tobacco smoke, addiction, and the benefits of cessation** (*WHO FCTC Article 12*).
- 6) **Promoting cessation of tobacco use and treatment for tobacco dependence by training health professionals to provide brief advice to quit tobacco use** (*WHO FCTC Article 14*).

Main findings of the investment case

In 2020, tobacco use in Mongolia caused 801 billion Mongolian tögrög (MNT) in economic losses. These losses are equivalent to 2.1 percent of Mongolia's gross domestic product (GDP). They include a) **MNT 87 billion** in direct health-care expenditures to treat tobacco-related illness, b) tobacco-attributable mortality valued at **MNT 496 billion**, and c) **MNT 219 billion** in reduced workplace productivity from absenteeism and presenteeism. Productivity losses from current tobacco use in Mongolia, representing – **27 percent** of all tobacco-related economic losses, shows how tobacco use impedes development in **Mongolia** beyond health. Multisectoral engagement is required for effective tobacco control, and other sectors benefit substantially from the implementation of tobacco control measures that create healthier communities and a more productive labour force.

Every year, tobacco use kills nearly 4,300 Mongolians, with **72 percent** of these deaths being premature, among people under the age of 70. About **12 percent** of lives lost from tobacco use are due to exposure to secondhand smoke. Deaths from tobacco are entirely preventable.

By acting now, the Mongolia can reduce the national burden from tobacco use. The investment case findings demonstrate that implementing and enforcing six key evidence-based WHO FCTC policy actions would, over the next 15 years (2023-2027):

Save more than 19,200 lives and reduce the incidence of disease. This would contribute to Mongolia's efforts to achieve Sustainable Development Goal (SDG) Target 3.4, which aims to reduce by one third premature mortality (under age 70) from non-communicable diseases (NCDs) by 2030. Enacting the six key WHO FCTC policy actions would prevent **premature deaths** from the four main NCDs – cardiovascular disease (CVD), diabetes, cancer, and chronic respiratory disease– by 2030, in the equivalent of about **19 percent** of the needed reduction in premature mortality to achieve SDG Target 3.4.

Avert MNT 2.4 trillion in economic losses, coming from:

MNT 646 billion due to workplace productivity losses. The tobacco-control actions should stimulate economic growth because fewer people 1) miss days of work due to disability or sickness, and 2) work at a reduced capacity due to tobacco-related health issues.

MNT 258 billion in savings through avoidance of tobacco-attributable health-care expenditures. Of this, the government would save MNT 158 billion in health-care expenditures and citizens would save MNT 89 billion in out-of-pocket health-care costs, with remaining savings accruing to other payers.

MNT 1.5 trillion in averted economic costs from tobacco-attributed mortality.

Provide a return on investment (ROI) of 97:1.¹ This means that economic benefits (**MNT 2.4 trillion**) significantly outweigh the costs of implementing the six WHO FCTC policy actions (**MNT 24.5 billion**). For each individual measure, increasing cigarette taxes will have the highest return-on-investment (**262:1**), followed by expanding and enforcing smoke-free public places and workplaces (**259:1**), enforcing bans on TAPS (**242:1**), public awareness of tobacco control issues (**216:1**), implementing plain packaging of tobacco products (**126:1**), and cessation support by training health professionals to provide brief advice to quit tobacco use (**17:1**).

In addition to these main findings, the investment case separately examined the revenue-generating potential of increasing cigarette taxes. Under the examined scenario, committing to **cigarette tax increases over the next five years could generate MNT 32 billion in government revenue**. This represents **MNT 6.4 billion** annually, which is equivalent to about **0.6 percent** of annual government health expenditures.

Increasing cigarette taxes in **Mongolia** can confer social benefits to all, particularly the poor. Those with lower incomes are more likely to quit smoking when cigarette prices rise, helping them to avoid illness and catastrophic health-care expenditures [1]. Cigarette tax increases would further benefit **Mongolians** with lower incomes if the resulting government tax revenue were reinvested in further WHO FCTC implementation and national development priorities such as universal health coverage. There is potential for even greater revenue increases from increases in taxes for all tobacco products, not only cigarettes. Increasing tobacco taxes can support Mongolia advance progress towards the Sustainable Development Goals, reducing poverty while generating sustainable domestic revenue and stimulating economic growth and labour productivity [2].

1 For every 1 MNT invested in the six key WHO FCTC policy actions today, Mongolia will avert MNT 39 in economic losses by 2027 and MNT 97 by 2037.

Recommendations

This report provides comprehensive recommendations that the **Government of Mongolia** can take to protect public health and realize the benefits of the WHO FCTC as a sustainable development accelerator, and it is not only focused on the key WHO FCTC policy actions modeled in this investment case.

Recommendations

- 1** Commit to fully implement the WHO FCTC.
- 2** Strengthen tobacco tax structures and increase tax rates (WHO FCTC Article 6).
- 3** Implement and enforce the other five tobacco control policies studied in this investment case:
 - remove the allowance for designated smoking areas as well as expanding and enforcing other policies to ensure 100 percent smoke-free public places and workplaces to protect people from the harms of tobacco smoke (WHO FCTC Article 8);
 - consider implementing plain packaging to reduce the appeal of tobacco packaging and to make health warnings more prominent (WHO FCTC Guidelines for implementation of Article 11 and WHO FCTC Guidelines for implementation of Article 13);
 - enact and enforce a comprehensive ban on all forms of tobacco advertising, promotion, and sponsorship (WHO FCTC Article 13);
 - promote and strengthen public awareness of tobacco control issues, including the health risks of tobacco use (including novel products) and tobacco smoke, addiction, and the benefits of cessation (WHO FCTC Article 12); and
 - promote cessation of tobacco use and treatment for tobacco dependence by training health professionals to provide brief advice to quit tobacco use, especially in primary care settings (WHO FCTC Article 14).
- 4** Strengthen multisectoral coordination for tobacco control and encourage the participation of civil society in WHO FCTC implementation (WHO FCTC Articles 5.2(a) and 4.7).
- 5** Renew and update the National Tobacco Control Strategy for Mongolia (WHO FCTC Article 5.1).
- 6** Implement measures to protect public health policies from the commercial and other vested interests of the tobacco industry (WHO FCTC Article 5.3).
- 7** Fully implement the Protocol to Eliminate Illicit Trade in Tobacco Products, including by building capacity to combat illicit trade (Protocol and WHO FCTC Article 15).
- 8** Identify opportunities to link the implementation of the WHO FCTC with wider sustainable development strategies.

Through the FCTC 2030 project, the Secretariat of the WHO FCTC, the United Nations Development Programme (UNDP) and the World Health Organization (WHO) stand ready to support the **Government of Mongolia** to reduce the tobacco-induced social, economic, and environmental burdens through the implementation of evidence-based tobacco control laws and policies.

Table ES1. Summary of the main results of the Investment Case for Tobacco Control in Mongolia 2023-2037*

Every year, tobacco use causes:

- Nearly 4,300 deaths.
- MNT 87 billion in health-care expenditures.
- MNT 219 billion in workplace productivity losses.
- Tobacco-attributable mortality valued at MNT 496 billion.
- Total social and economic losses equivalent to 2.1% of GDP.

Implementing the modeled WHO FCTC measures now would, over the next 15 years:

- Prevent more than 19,200 deaths.
- Save MNT 258 billion in health-care expenditures.
- Generate economic benefits (MNT 2.4 trillion) that significantly outweigh costs (MNT 25 billion) of implementation and enforcement – a 97:1 return on investment.
- Prevent MNT 1.5 trillion in losses due to tobacco-attributable mortality.
- Prevent MNT 646 billion in workplace productivity losses.

* Figures subject to rounding.

1. Introduction

The tobacco epidemic is one of the greatest public health threats the world has faced, killing more than 8 million people a year, including some 1.2 million deaths from exposure to secondhand smoke [3]. Tobacco use is a main risk factor for non-communicable diseases (NCDs) including cardiovascular disease (CVD), diabetes, cancer and chronic respiratory disease, as well as a cause of many other diseases [4]. In Mongolia, around 25 percent of adults currently use some form of tobacco product, with a higher prevalence among men (45 percent) than among women (5.6 percent). Tobacco use causes nearly 4,300 deaths every year [5]. About 72 percent of those deaths occur among those under age 70 [6].

In addition to the cost to health and well-being, tobacco also imposes a heavy economic burden throughout the world. A 2018 study (based on 2012 data) found that the costs of smoking² were equivalent to 1.8 percent of the world's annual gross domestic product (GDP). Almost 40 percent of the costs occurred in developing countries, highlighting the substantial burden these countries suffer [7].

Tobacco use reduces productivity by permanently or temporarily removing individuals from the labour market due to poor health [8]. When people die prematurely, the labour output that they would have produced in their remaining years is lost. In addition, people with poor health are more likely to miss days of work (absenteeism) or to work at a reduced capacity while at work (presenteeism) [9], [10]. The labour and health consequences affect not only smokers, but also the people in their households who often need to take time off from work to care for those with tobacco-related diseases.

Tobacco use also displaces household expenditure that would otherwise go to fulfilling basic needs, including food and education [11]–[13], and it contributes to hunger and impoverishment of families [14], [15]. The use of tobacco imposes health and socio-economic challenges on vulnerable populations including the poor, women, and young people [16].

Tobacco production causes environmental damage including soil degradation, water pollution, and deforestation [17]–[19]. Tobacco's annual climate change impact is comparable to entire countries' emissions and represents 0.2 percent of the global total. As a result of the shift of tobacco production from richer countries to lower income countries, its environmental impacts are now mostly borne by developing regions. By depleting these countries' valuable resources, and polluting and damaging their ecosystems, tobacco puts their livelihoods and development at risk [17]–[19].

2 Defined as either "direct costs" such as hospital fees or "indirect costs" representing the productivity loss from morbidity and mortality.

Given the far-reaching health and development impacts of tobacco, and the multi-sectoral nature of the interventions required, effective tobacco control needs the engagement of non-health sectors to be operating in support of a whole-of-government and whole-of-society approach to policy making and implementation of the WHO Framework Convention on Tobacco Control (FCTC).

The WHO FCTC was developed in response to the globalization of the tobacco epidemic and is an evidence-based treaty that reaffirms the right of all people to the highest standard of health. The Convention represents a milestone for the promotion of public health and provides new legal dimensions for international health cooperation. Mongolia ratified the WHO FCTC in 2004 [20].

Mongolia also became a Party to the Protocol to Eliminate Illicit Trade in Tobacco Products in 2015. The Protocol is an international treaty that builds upon Article 15 of the WHO FCTC, with the objective of eliminating all forms of illicit trade in tobacco products through a package of measures to be taken by countries acting in cooperation.

Tackling tobacco use across the world is a priority within the 2030 Agenda for Sustainable Development. Tobacco control is relevant to the achievement of many Sustainable Development Goals (SDGs), particularly SDG Target 3.4 that calls for action to achieve a one-third reduction in premature mortality from NCDs by 2030. Target 3.a is a means of implementation of SDG 3.4 and calls for strengthened implementation of the WHO FCTC. But beyond health, tobacco control is also a proven approach to reduce poverty and inequalities, strengthen and expand the economy and advance sustainable development more broadly. Tobacco control is an SDG accelerator as it can contribute to many goals simultaneously across the economic, social, and environmental spheres [21]. In addition, reducing tobacco use is one of the nine targets of the WHO Global action plan for the prevention and control of NCDs 2013-2030 [22].

Box 1. 2030 Agenda for Sustainable Development

In 2015, all UN Member States adopted the 2030 Agenda for Sustainable Development, outlining actions to achieve greater peace and prosperity. The core components of the Agenda are the 17 SDGs which are an urgent call for all countries to act together, recognizing that efforts to address poverty, inequalities, health, education, economy and climate change must be undertaken in unison done in [23].

Since joining the WHO FCTC as a Party in 2004, Mongolia passed the Tobacco Control Law (amended in December 2015). The Tobacco Control Law is the primary tobacco control legislation in Mongolia and contains provisions on smokefree areas, health warnings on tobacco products, bans on tobacco advertising, promotion and sponsorship, and establishes the Health Promotion Foundation.

to reduce tobacco consumption and promote health lifestyles [24]. In 2014, Mongolia became the first WHO FCTC Party in the Western Pacific Region to ratify the protocol to Eliminate Illicit Trade in Tobacco Products [25]. By implementing these important measures, Mongolia is helping to address the tobacco epidemic. Strengthening existing policies and implementing new measures can reduce tobacco use prevalence and generate additional health and economic gains.

Though Mongolia has implemented provisions aligned WHO FCTC obligations, several key demand reduction measures within the WHO FCTC remain to be implemented and some require strengthening. Opportunities for Mongolia to improve implementation of the WHO FCTC include: strengthening tobacco tax structures and increasing tax rates; strengthening smoke-free policies; enacting a comprehensive ban on all forms of TAPS; promoting and strengthening awareness of tobacco control issues; implementing plain packaging for tobacco products; and promoting cessation of tobacco use and treatment for tobacco dependence by training health professionals to provide brief advice to quit tobacco use.

In 2015 Mongolia undertook a WHO FCTC Needs Assessment that made recommendations for the country to accelerate implementation of the Convention by establishing a national multisectoral coordinating mechanism, strengthening and enforcing the Tobacco Control Law, activating the Health Promotion Foundation, ensuring all indoor public places are 100 percent smoke-free and increasing taxes on tobacco products, among other recommendations [26]. Realizing the full benefits of all of the above measures depends on concerted and coordinated efforts from multiple sectors of government with support from civil society.

In 2021, the Secretariat of the WHO FCTC, UNDP, and WHO undertook a virtual joint mission with partners in Mongolia to initiate this investment case. This investment case is part of support made available to Mongolia as an [FCTC 2030](#) project country.³

Investment cases for tobacco control analyse the health and economic costs of tobacco use as well as the opportunities for potential gains from scaled-up implementation of key WHO FCTC measures. It identifies which WHO FCTC demand reduction measures are likely to produce the largest health and economic returns for Mongolia, based on the return on investment (ROI). Taking into account the current implementation of WHO FCTC measures in Mongolia, the investment case models the impact of the following six key WHO FCTC provisions:

3 The FCTC 2030 project is a global initiative funded by the Governments of Australia, Norway and the United Kingdom to support countries to strengthen WHO FCTC implementation to achieve the SDGs. As of 2022, Mongolia is one of 33 countries worldwide that have participated in the FCTC 2030 project [27].

- 1 Increase tobacco taxation to reduce the affordability of tobacco products.**
(WHO FCTC Article 6).
- 2 Expand and enforce 100 percent smoke-free public places and workplaces to protect people from the harms of tobacco smoke** (WHO FCTC Article 8).
- 3 Implement plain packaging⁴ of tobacco products** (WHO FCTC Guidelines for Implementation of Article 11 and WHO FCTC Guidelines for Implementation of Article 13).
- 4 Enact and enforce a comprehensive ban on all forms of tobacco advertising (TAPS), promotion, and sponsorship** (WHO FCTC Article 13).
- 5 Promote and strengthen public awareness of tobacco control issues, including the health risks of tobacco use and tobacco smoke, addiction, and the benefits of cessation** (WHO FCTC Article 12).
- 6 Promote cessation of tobacco use and treatment for tobacco dependence by training health professionals to provide brief advice to quit tobacco use** (WHO FCTC Article 14).

Chapter 2 of this report provides an overview of tobacco control in Mongolia, including tobacco use prevalence as well as challenges and opportunities. **Chapter 3** summarizes the methodology of the investment case (see the annex on methodology and the separate Technical Appendix, available upon request, for more detail). **Chapter 4** reports the main findings of the economic analysis. **Chapter 5** details the results of complementary analyses examining the impact of increasing cigarette taxes on government revenue, as well as the projected impact on government revenue. Further, it also details the contribution of the WHO FCTC demand reduction measures to meeting SDG Target 3.4 to reduce premature mortality due to NCDs by one third by 2030. **Chapter 6** summarizes the results and provides recommendations to the government to further tobacco control. The annex provides information on the methods underlying the various analyses described in the report.

4 Plain (or standardized) packaging is defined as “measures to restrict or prohibit the use of logos, colours, brand images or promotional information on packaging other than brand names and product names displayed in a standard colour and font style”. Further information is available at: Guidelines for implementation of Article 11 of the WHO Framework Convention on Tobacco Control (decision FCTC/COP3(10)) November 2008, available at: <https://fctc.who.int/publications/m/item/packaging-and-labelling-of-tobacco-products>, and Guidelines for implementation of Article 13 of the WHO Framework Convention on Tobacco Control, available at: <https://fctc.who.int/who-fctc/overview/treaty-instruments/tobacco-advertising-promotion-and-sponsorship>

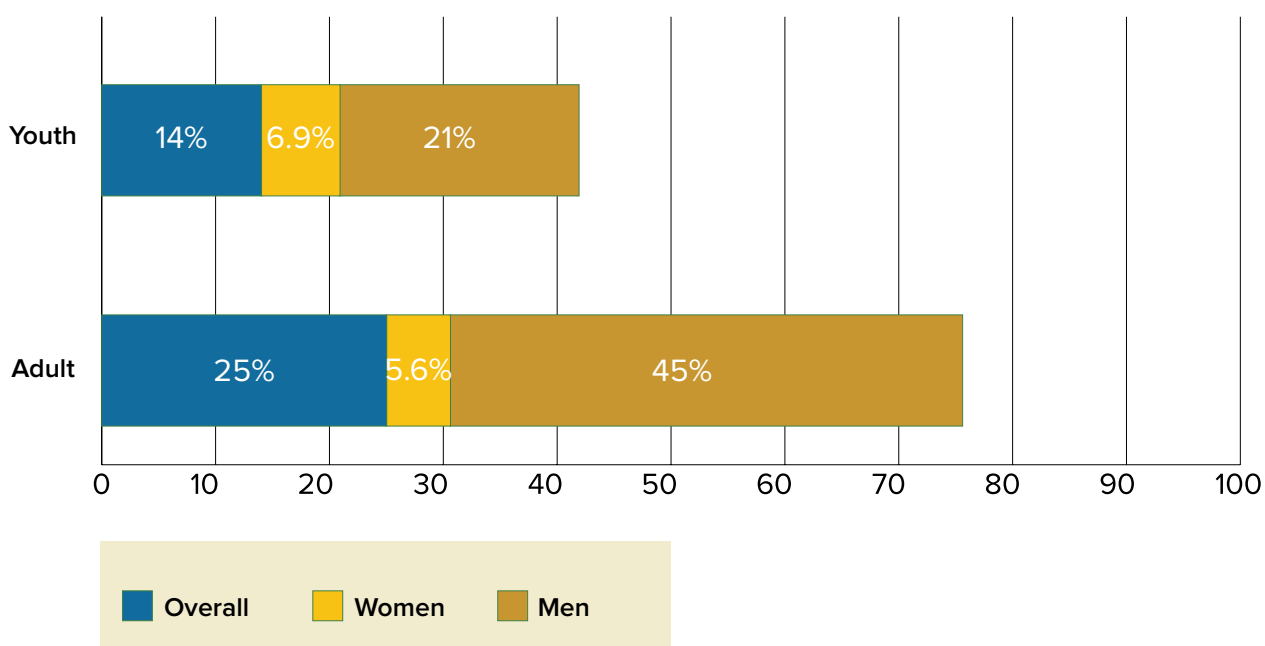
2. Tobacco control in Mongolia: status and context

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

In Mongolia, 25 percent of adults are current tobacco users, with a higher prevalence among men (45 percent) than women (5.6 percent) [6]. Smoked tobacco is the most common form of tobacco consumed with 24 percent of Mongolians being current tobacco smokers (44 percent of men and 5.6 percent of women) [6], and 22 percent smoke tobacco daily [6]. Cigarettes are the most popular smoked tobacco product, with 43 percent of Mongolians reporting current cigarette smoking (43 percent of men and 4.8 percent of women) [6].

In Mongolia, 33 percent of adults are exposed to secondhand smoke at home, with a higher exposure rate among women (36 percent) than among men (30 percent) [6]. Twenty-three percent of adults are exposed to secondhand smoke at workplaces, with a higher exposure among men (29 percent) than among women (16 percent) [6]. A study published in 2017 using a population of pregnant women in the Darkhan-Uul Province of Mongolia revealed that 45 percent of non-smoking pregnant women were exposed to secondhand smoke. Additionally, younger women and women with low education had greater odds of being exposed to secondhand smoke compared to older women and women with higher education respectively [28].

According to the most recent Global Youth Tobacco Survey (GYTS), among students aged 13-15 years old, 14 percent currently use tobacco products, with a higher prevalence among boys (21 percent) than among girls (6.9 percent) [29] (**Figure 1**). Smokeless tobacco is the most common form of tobacco consumed (8.2 percent of students), followed by smoked tobacco (7.5 percent of students). As with adults, boys tend to consume all forms of tobacco at higher rates than girls in Mongolia (**Figure 1**).

Fig. 1: Current tobacco use among adults and youth

Source: Data on tobacco use among youth comes from GYTS 2019 [29], while data among adults comes from 2019 STEPwise approach for non-communicable disease surveillance [6].

While 86 percent of students tried to stop smoking in the past 12 months and 82 percent currently wanted to quit smoking, only 13.2 percent of current tobacco smokers 13-15 years old had ever received help or advice to stop smoking [29].

Forty-three percent of students are exposed to tobacco smoke at home, and 52 percent are exposed to tobacco smoke inside enclosed public places. The majority of students (84 percent) favour banning smoking inside enclosed public spaces [29]. Less than half (49 percent) of students were taught about the danger of tobacco use in the past 12 months. Only 43 percent of students believe that other people's tobacco smoking is harmful to them and only 8.7 percent definitely think it is difficult to quit once someone starts smoking [29].

Making tobacco products less affordable is one of the best ways to control tobacco use, and young people are particularly sensitive to the price of tobacco [30]. Higher tobacco prices from tax increases can make smoking too costly for young people and reducing the incentive to start or continue to smoke. A 2021 study demonstrated that higher tobacco prices, such as through tax increases, are associated with a decreased risk of smoking initiation among youth and young adults [31].

Box 2. Tobacco and gender

While worldwide women and girls tend to use tobacco at lower rates than men, they can still be subjected to the harms of tobacco use—including exposure to secondhand smoke [32] and the effects of household income diverted to tobacco use. Since tobacco use prevalence is often lower for women than men, the tobacco industry see this as an opportunity to scale up marketing targeted at women and girls [33]. In Mongolia, women are disproportionately more exposed to secondhand smoke than men. Thirty-six percent of women report being exposed to second hand smoke at home, compared to 30 percent of men [6]. Among girls, 63 percent have been exposed to second hand smoke in any outdoor public space, 57 percent in enclosed public places and 41 percent at home [29].

Box 3. Tobacco and pregnancy

Tobacco use during pregnancy imposes significant health risks on the fetus, infant and mother. It increases the likelihood of miscarriages, stillbirths, preterm births, low birth weight, birth defects, and sudden infant death syndrome, among others [34], [35]. Exposure to secondhand smoke during pregnancy also increases the risks of having low birthweight babies, in turn increasing the risk of a mother and child developing health issues [35]. Mothers face additional health risks as pregnant smokers are more likely to experience heart and lung complications than pregnant nonsmokers [36]. Despite the strong evidence, the tobacco industry continues to aggressively target women and girls [35]. It is estimated that the global prevalence of smoking during pregnancy is 1.7 percent [37].

2.2 National tobacco control legislation, strategy and coordination

Mongolia ratified the WHO FCTC and became a Party to the Convention in 2004 [20]. In 2005, Mongolia enacted the Tobacco Control Law. In December 2015, this law was revised and is the primary source of legislation on tobacco control in the country [24].

The Tobacco Control Law mandates that health warnings must cover at least 50 percent of front and back sides of a cigarette package; prohibits the sale of tobacco to and by persons under the age of 21; prohibits the sale of tobacco within 500 meters from secondary schools and dormitories; prohibits the sale of less than 20 cigarettes in a pack; bans certain forms of tobacco advertising, promotion and sponsorship; restricts smoking in some public areas (while still authorizing designated smoking areas), and establishes the Health Promotion

Foundation (discussed below), among other measures [24]. As of 2022, the Tobacco Control Law is again being revised.

In 2013, Mongolia developed the National Strategy to Combat and Prevent Tobacco Harms covering the period 2014-2020. The goal of this plan is to achieve a 25 percent reduction in tobacco consumption by 2025, through the implementation of WHO FCTC measures [26]. There has not been an updated strategy since it expired in 2020.

While there is a designated focal point for tobacco control housed in the Ministry of Health (MoH), this focal point also has other responsibilities. There is no multisectoral coordinating mechanism for tobacco control in operation.

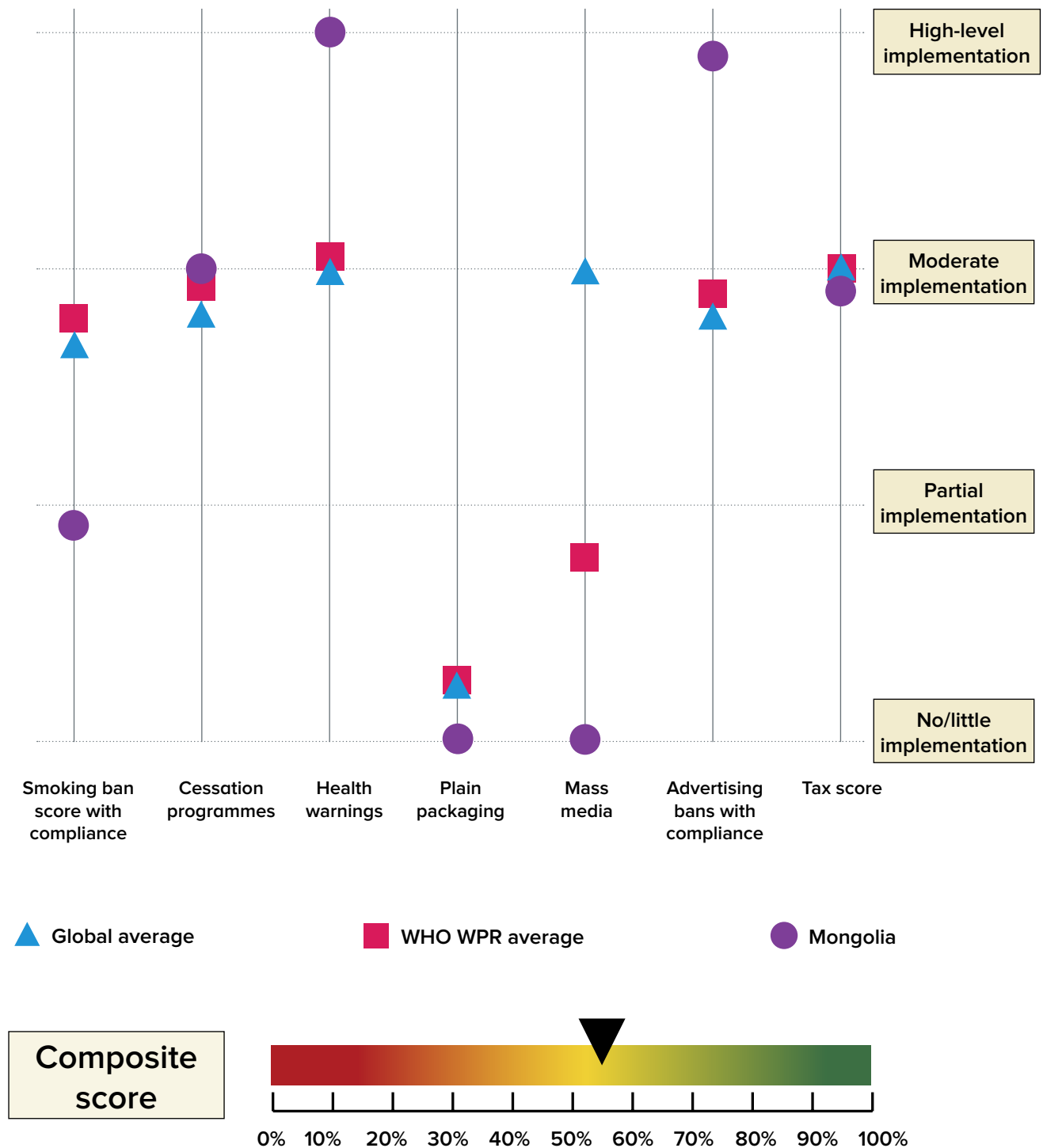
2.3 The status of WHO FCTC demand reduction measures

Strong fiscal and regulatory measures influence societal norms by signalling that tobacco use is harmful, not only for users but for the people around them—including family, colleagues, and co-workers.

While Mongolia has demonstrated strong progress to implement key demand reduction measures, more than half a million Mongolians continue to smoke [6]. Implementing additional demand reduction measures or intensifying existing ones can draw Mongolia into closer alignment with the WHO FCTC and reduce the substantial costs imposed by tobacco use. Below, the status of each of the demand reduction measure in relation to WHO FCTC recommendations is discussed.

Figure 2 summarizes the status of tobacco control demand reduction measures in Mongolia from the WHO Report on the Global Tobacco Epidemic, 2021 [38] and, for each, progress toward meeting the WHO FCTC obligations. Overall, Mongolia is assessed to be 55 percent of the way toward fulfilling the key WHO FCTC demand reduction measures, slightly above the global average of 53 percent.⁵

⁵ This composite score represents a status quo implementation level of tobacco control demand reduction measures developed by economists intentionally for tobacco control investment cases.

Fig. 2: Implementation of WHO demand reduction measures in Mongolia

Source: WHO Report on the Global Tobacco Epidemic, 2021 [38]

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

In Mongolia, total taxes comprise 45 percent of the retail price of the most sold brand of cigarettes. Specific excise taxes account for 36 percent and value added tax (VAT) or sales tax equal to 9 percent. As of 2020, the price of a 20-cigarette pack of the most sold brand in Mongolia is MNT 2,300 (US\$0.81). Compared to other countries in the region, Mongolia's cigarette price is among the lowest. For instance, a pack of 20 cigarettes of the most sold brand costs US\$2.19 in China and US\$2.15 in Russia [38].

There is substantial scope for action to reach what is considered in the WHO Report on the Global Tobacco Epidemic as a high-level of achievement, which is for total taxes to represent at least 75 percent of the retail price⁶ [38]. On tax design for tobacco products, WHO makes a number of recommendations including that governments should rely more on specific tobacco excises to drive price increases (rather than rely only on ad valorem excises), increase tobacco taxes significantly to reduce the affordability of tobacco products and automatically adjust specific tobacco taxes for inflation and income growth [39]. Additionally, WHO recommends that governments have an excise tax that represents at least 70 percent of the retail price of tobacco products [39].

In 2012, the cigarette excise tax was increased by 300 percent and resulted in an almost two-fold increase of cigarette prices. However, in 2015, a decision to convert the excise tax into local currency resulted in a tax cut, causing a loss of tax revenue of around MNT 30 billion while also generating extra profit for the tobacco industry [40]. Cigarette affordability has not changed since 2010 [41]. Additionally, duty-free import of tobacco products is permitted in certain quantities and tobacco can be purchased at duty-free shops in Mongolia [40].

The *Global Cigarette Tax Scorecard* that assesses countries' cigarette tax policy performance gave Mongolia a score of 1.63 out of a maximum score of 5 in 2020. This is significantly lower than the Western Pacific regional average of 2.14 and represents a decrease for Mongolia, which scored 2.13 in 2014 and 1.75 in 2016. Within the Tax Scorecard, Mongolia rated lowest on cigarette affordability⁷ change (0 out of 5), absolute price (1 out of 5), and tax share (1.5 out of 5) components in 2020 [43], [44].

6 The WHO Report on the Global Tobacco Epidemic classifies total tax share of 75 percent or more of the retail price as a high-level of achievement [38].

7 Measured as the percentage of a country's GDP per capita needed to buy 100 packs of the most sold brand of cigarettes [42].

The investment case examines the impact of **raising cigarette taxes** to levels considered in the WHO *Report on the Global Tobacco Epidemic, 2021* as a high-level of achievement, bringing the total tax share to 84 percent by the end of the analysis and the excise tax share to 75 percent (see annex on methodology annex for detailed information). Further economic gains will be made in Mongolia with substantial tax increases on all tobacco products.

2. Create smoke-free public places and workplaces to protect people from the harms of tobacco smoke (WHO FCTC Article 8)

Under the Tobacco Control Law, smoking is prohibited in most indoor places, including public transportation, public transportation stations, public lounges of hotels, hospitals, schools, playgrounds, parks, entertainment areas, and public service areas. However, designated smoking areas are allowed in restaurants, shopping centres, bars and businesses [24]. Compliance of the smoking restrictions is reportedly low, receiving a 5 out of 10 for compliance in the 2021 WHO report on the global tobacco epidemic [38].

The investment case examines the impact of **enacting and enforcing comprehensive smoke-free measures for all indoor public places and workplaces**.

3. Require tobacco packaging to carry graphic health warnings describing the harms of tobacco use (WHO FCTC Article 11)

The Tobacco Control Law in Mongolia mandates health warnings covering 50 percent of the front and back of the package [24]. In 2018 however, MoH passed an Order to increase the size to 65 percent [45]. Other smoked products are required to have 32.5 percent of the principal display areas covered by health warning. Misleading packaging and labelling, which could include terms such as “light” and “low tar” and other signs, is prohibited [41]. It is also mandated by law for health warnings to include pictures and be in Mongolian [24]. Given that the requirements under WHO FCTC Article 11 obligations are being met and there is a good level of implementation, this intervention has not been modeled in the investment case.

4. Implement plain packaging of tobacco products

(WHO FCTC Guidelines for Implementation of Article 11 and WHO FCTC Guidelines for Implementation of Article 13)

Plain packaging is not currently mandated in Mongolia. The investment case models the impact of implementing and enforcing plain packaging requirements.

5. Promote and strengthen public awareness of tobacco control issues, including the health risks of tobacco use and tobacco smoke, addiction, and the benefits of cessation

(WHO FCTC Article 12)

No national **mass media campaign on tobacco control** was conducted in Mongolia between 2018 and 2020 [41]. Some awareness raising initiatives and media campaigns have been conducted by civil society and non-governmental organizations. In 2019, the LGBT Centre in Mongolia conducted a three-month social media campaign on tobacco control [46]. World Wildlife Fund Mongolia has also conducted awareness raising initiatives on the dangers of throwing cigarette butts in or near rivers [47]. The investment case examines implementing a best-practice mass media campaign in Mongolia.

6. Enact and enforce a comprehensive ban on all forms of tobacco advertising, promotion, and sponsorship (TAPS)

(WHO FCTC Article 13)

There is a ban on direct tobacco advertising, including national and international television and radio, local and international magazines and newspapers, billboards and outdoor advertising [42]. Overall compliance with direct tobacco advertising is high and there are fines for violating the ban. Tobacco promotion and sponsorship are also banned, including a complete ban on sponsorship and corporate social responsibility activities (CSR). The appearance of tobacco products on television is not banned, however, nor is the display of tobacco products at point-of-sale, and compliance with indirect bans is lower than that for direct (score of 5 in the *WHO Report on the Global Tobacco Epidemic 2021*) [41]. The investment case models the impact of enacting and enforcing a comprehensive TAPS ban.

7. Promote cessation of tobacco use and treatment for tobacco dependence by training health professionals to provide brief advice to quit smoking (WHO FCTC Article 14)

Smoking cessation support is available in some health clinics and primary care facilities but is not currently available in hospitals or in the offices of health professionals. Moreover, the cost of support is only partially covered. Nicotine replacement therapy (NRT) is legally sold and can be purchased at pharmacies without a prescription. However, there is no toll-free telephone quit line in Mongolia [41]. The investment case models the impact of training primary care health providers to identify tobacco users and to provide tobacco cessation advice (see the annex on methodology detailed information). Further gains would be possible with the provision of further support to tobacco users, such as offering specialized tobacco dependence treatment services, a national toll-free quit line and/or internet based quit support and making pharmacotherapies free of cost, if possible.

Table 1 summarizes the existing state of WHO FCTC demand reduction measures and compares them against a target that would represent a best practice of implementation for each measure. The impact of each policy measure—individually and in combination—is described in **Annex Table A4**.

Table 1: Summary of the current state of WHO FCTC demand reduction measures in Mongolia and modeled implementation targets based on the *WHO Report on the Global Tobacco Epidemic, 2021* [38]

Tobacco control policy	Mongolia baseline	Modeled implementation target
Increase tobacco taxation to reduce the affordability of tobacco products (WHO FCTC Article 6)	Total tax share is equivalent to 45% of the most sold brand of cigarettes (with specific excise taxes accounting for 36%).	Increase total taxes on cigarettes to at least 75% of the retail price and specific excise taxes to at least 70% of the retail price. Implement regular tax increases to outpace inflation and income growth.
Create smoke-free public places and workplaces to protect people from the harms of tobacco smoke (WHO FCTC Article 8)	Smoking is restricted in some indoor public places and workplaces, however the law permits smoking areas in bars, restaurants, shopping centres and businesses	Remove provision for designated smoking areas to make all indoor work and public places 100% smoke free.
Implement plain packaging of tobacco products (WHO FCTC Guidelines for implementation of Article 11 and WHO FCTC Guidelines for implementation of Article 13)	Plain packaging requirements are currently not in place.	Implement and enforce plain packaging of tobacco products.
Promote and strengthen public awareness of tobacco control issues, including the health risks of tobacco use and tobacco smoke, addiction, and the benefits of cessation (WHO FCTC Article 12)	There were no national anti-tobacco campaigns conducted between July 2018 and June 2020 with a duration of at least 3 weeks	Implement a nationwide anti-tobacco use 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, promotion, and sponsorship (TAPS) (WHO FCTC Article 13)	Mongolia has a comprehensive ban on direct tobacco advertisement and a ban on many forms of tobacco promotion and sponsorship. Tobacco products at the point of display are not explicitly banned.	Ban all forms of direct and indirect TAPS, with strengthened enforcement to ensure compliance.
Promote cessation of tobacco use and treatment for tobacco dependence by training health professionals to provide brief advice to quit tobacco use (WHO FCTC Article 14)	Smoking cessation support is available in some health clinics and primary care facilities, but is not currently available in hospitals, the offices of health professionals, or in the community, with the cost of support only partially covered. NRT is available but there is no national toll-free quit line.	Expand training of primary health care providers to identify tobacco users and to provide tobacco cessation advice; implement the provision of tobacco cessation services at the primary care level

Source: WHO Report on the Global Tobacco Epidemic, 2021 [38]

2.4 Tobacco use and the COVID-19 pandemic

The global coronavirus disease (COVID-19) pandemic has strained health systems worldwide, and the economic impact of the outbreak has been immense. According to WHO, evidence indicates that smokers are more likely to suffer more severe outcomes of COVID-19, such as admission into intensive care units and death, than never smokers. Furthermore, severe forms of COVID-19 or deaths due to COVID-19 are more frequent in people with comorbidities that are related to tobacco use, including chronic obstructive pulmonary disease, lung cancer and cardiovascular diseases [48]. Moreover, tobacco use is also proven to worsen the outcomes of other communicable diseases including such as tuberculosis and HIV [49].

2.5 Financing

In 2018, current health expenditure in Mongolia amounted 3.79 percent of GDP, below the 5 percent target set by the WHO [50]. Out-of-pocket (OOP) expenditures in Mongolia account for 41 percent of total health expenditure [51]. While Mongolia provides free access to primary health care for its citizens, deficiencies have been identified in the areas of diagnostic capacity, supply of essential medicines and availability of basic equipment [52]. While there is health insurance coverage of almost 90 percent of the population, the benefit package is mostly limited to hospital services [51]. Moreover, a report published by the World Bank found disparities in health-care expenditures in Mongolia by poverty status. Low-income households in Mongolia often face situations where they cannot afford medical care services, and they use health services less frequently than higher income households. On average, low-income household health-care expenditures is one sixth of the expenditures spent by higher income households [53].

The current structure of budgeting for tobacco control policies and interventions in Mongolia is outlined in the Tobacco Control Law [24]. In 2018, government expenditure of tobacco control totalled MNT 70 million [41]. The Tobacco Control Law established the Health Promotion Foundation, a semi-autonomous agency that works to promote healthy lifestyles and reduce tobacco consumption among Mongolians. The foundation is funded by 2 percent of the tobacco excise tax, 1 percent of excise tax on alcoholic beverages, 2 percent on drug registration, and donations by citizens or international organizations [104]. It aims to promote tobacco control programmes and projects, finance activities to prevent diseases caused by tobacco consumption, improve the supply of medicine, and conduct research on tobacco consumption and its consequences [26]. At present, however, the Health Promotion Foundation is not active.

2.6 Illicit trade in tobacco products

Illicit trade in tobacco products poses a serious threat to public health. Illicit trade increases the accessibility and affordability of tobacco products, thus fuelling the tobacco epidemic and undermining tobacco control policies. It also causes substantial losses in government revenues, and at the same time contributes to the funding of transnational criminal activities [54]. Despite the tobacco industry's claims, changes in illicit tobacco trade levels are very loosely connected with changes in tobacco taxes. Increasing tobacco taxes does not necessarily lead to more tobacco smuggling, as demonstrated by multiple studies [55].

The Government of Mongolia is taking efforts to combat illicit trade of tobacco products and participated in the Intergovernmental Negotiating Body drafting the Protocol to Eliminate Illicit Trade in Tobacco Products from 2008 to 2012. In 2014, Mongolia became the first country in the Western Pacific Region to endorse and ratify the Protocol [25]. The Protocol supplements the WHO FCTC as a comprehensive tool to counter and eventually eliminate illicit trade in tobacco products and to strengthen legal dimensions for international health cooperation. Mongolia has also implemented tax stamps. All tobacco producers and sellers are required to have an excise tax stamp indicating the origin of the product, the manufacturer and manufacturing date and the permission to sell in Mongolia [40].

There is no track and trace system for tobacco products in Mongolia [26]. Furthermore, data on illicit trade of tobacco products in Mongolia remains difficult to access and can be unreliable. While there is no official data on the percentage of illicit tobacco products on the national tobacco market, researchers estimate that between 6.3 percent and 15.4 percent of collected cigarette packs are illicit⁸ [40]. This study also included an assessment of the impact of increasing tobacco taxes import taxes on tobacco by 30 percent and excise taxes on tobacco by 10 percent from May 2017 to January 2018. The researchers found that the share of illicit cigarettes decreased despite the tax increases [40].

2.7 Tobacco industry presence and interference in policymaking

There is evidence of tobacco industry interference in policymaking of Mongolia. For example, in 2014, the tobacco industry delayed the ratification of the Protocol to Eliminate Illicit Trade in Tobacco Products [25].

⁸ This is based on an analysis of discarded cigarette packs on the ground in Ulaanbaatar, and two border provinces Bayan-Ölgii and Dornod between 2017 and 2018 [40].

Under Mongolia's Law on Anti-Corruption, there are prohibitions on government-affiliated or political persons using their official position to exert illegal pressure, grant illegal preferences or use their official position for illegal gains [56]. Government interaction with tobacco industry must consider this legislation.

The Tobacco Control Law includes provisions to prevent industry interference, including prohibiting the tobacco industry from making financial and material donations, engaging in social responsibility activities and being involved in tobacco control policy making, among other prohibited actions [24]. Any public health policy makers and those involved in public education activities are also required to avoid partnering with the tobacco industry under this law [24].

However, the Tobacco Control Law recommends to not give rewards, tax discounts and other benefits to the tobacco industry, meaning these actions are not prohibited [24]. The industry has previously received preferential tax credits, with one company paying 14.8 times less in taxes than other importers. Additionally, Mongol Tobacco SO Co. Ltd – occupying 40 percent of the tobacco market share in Mongolia – has provided support to the education, cultural and sports sectors as part of corporate social responsibility activities prior to 2019 [57].

In the *Global Tobacco Industry Interference Index 2021*,⁹ Mongolia ranks 7th out of all 80 countries analysed (receiving a score of 38 in a ranking system where a lower score indicates less interference) [58]. While Mongolia scores in the top ten for its vigilance against tobacco industry interference, there remains room for improvement including by implementing a code of conduct for all public officials for interactions with the industry and mandating the disclosure of tobacco industry entities or individuals acting on their behalf [58].

2.8 Civil society organizations (CSOs)

The Government of Mongolia understands the importance of engagement with non-governmental organizations (NGOs) and civil society to support tobacco control, including the Tobacco Control Law, but current levels of engagement are minimal. In the past, the two government established entities, the Health Promotion Foundation of Mongolia and the Millennium Challenge Account Mongolia Health Project, have been active in tobacco control initiatives. However, they are no longer operational. As of 2015, the NGO Association of Mongolian Public Health Professionals is active in Mongolia as and has engaged in tobacco control activities such as awareness raising efforts [26]. Additionally, there are other NGOs addressing tobacco control in Mongolia including Focus [59], Mongolian Mental Health Association [60], and the Association to Protect Population from Drug and Opium [61]. Still more efforts are needed to increase engagement with civil society.

9 The Global Tobacco Industry Interference Index measures efforts by governments to address tobacco industry interference: It is accessible at <https://globaltobaccoindex.org/>.

3. Methodology

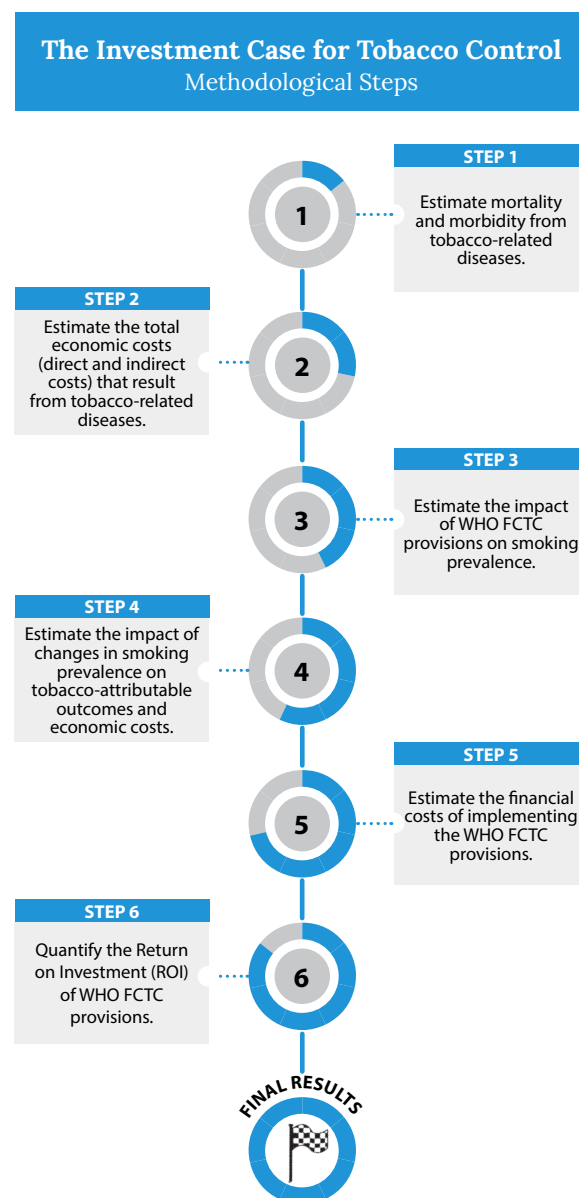
The purpose of the investment case is to quantify the current health and economic burden of tobacco use in Mongolia (in the context of WHO FCTC measures that are currently in place), and to estimate the impact that implementing new WHO FCTC measures—or strengthening existing ones—would have on reducing this burden. A static model was developed to conduct the investment case and to perform the methodological steps in **Figure 3**. This methodology has been used for previous national WHO FCTC investment cases under the FCTC 2030 project.

The tools and methods used to perform these steps are described in this report's annex on methodology. Interested readers are also referred to this report's separate *Technical Appendix*¹⁰ for a more thorough account of the methodology.

The investment case team worked with the MoH and other stakeholders in Mongolia 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 WHO, the World Bank database, the Global Burden of Disease study by the Institute for Health Metrics and Evaluation's (IHME), and academic literature.

Within the investment case, costs and monetized benefits are reported in constant 2020 Mongolian tögrög (MNT) and discounted at an annual rate of 5 percent.

Fig. 3: Building the investment case



¹⁰ Available upon request.

4. Results

4.1 The current burden of tobacco use: health and economic costs¹¹

Tobacco use undermines economic growth. In 2019, tobacco use caused an estimated 4,297 deaths in Mongolia, 72 percent of which were premature i.e. occurred among those under 70 years [62]. These deaths amount to 71,600 years of life lost (YLLs), which are lost productive years in which many of those individuals would have contributed to the workforce [62]. Monetizing YLLs due to tobacco use, the investment case identifies MNT 496 billion in losses due to tobacco-attributable mortality.

While the costs of the tobacco-attributable 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 MNT 54 billion in 2020 and caused Mongolian citizens to spend MNT 30 billion in OOP health-care expenditures. Private insurance and non-profit institutions serving households spent MNT 3.4 billion on treating tobacco-attributable diseases in 2020. In total, health-care expenditures attributable to smoking amounted to MNT 87 billion.

In addition to health-care costs, as people become sick, they are more likely to miss days of work (absenteeism) or to be less productive at work (presenteeism). In 2020, the cost of excess absenteeism due to tobacco-related illness was MNT 60 billion and the cost of presenteeism due to cigarette smoking was MNT 158 billion.

In total, tobacco use caused MNT 801 billion in economic losses in 2020, equivalent to about 2.1 percent of Mongolia's 2020 GDP. **Figure 4** summarizes the current social and economic burden of tobacco use and contextualizes the losses. The burden of tobacco use far exceeds the revenue from taxing tobacco products. Tobacco-attributable social and economic losses are about 22 times as large as collected government revenue. Social and economic losses per licit cigarette pack sold equate to about MNT 23,332 per pack, outweighing the financial value—represented by the per pack price—that accrue in the value chain to growers, manufacturers, vendors, other supply chain stakeholders, and the government (through taxation). Given the dominance of multinational corporations in the tobacco trade and the high-profit margins on cigarettes, much of the profit from tobacco sales in Mongolia leaves the country and goes into the pockets of international shareholders.

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

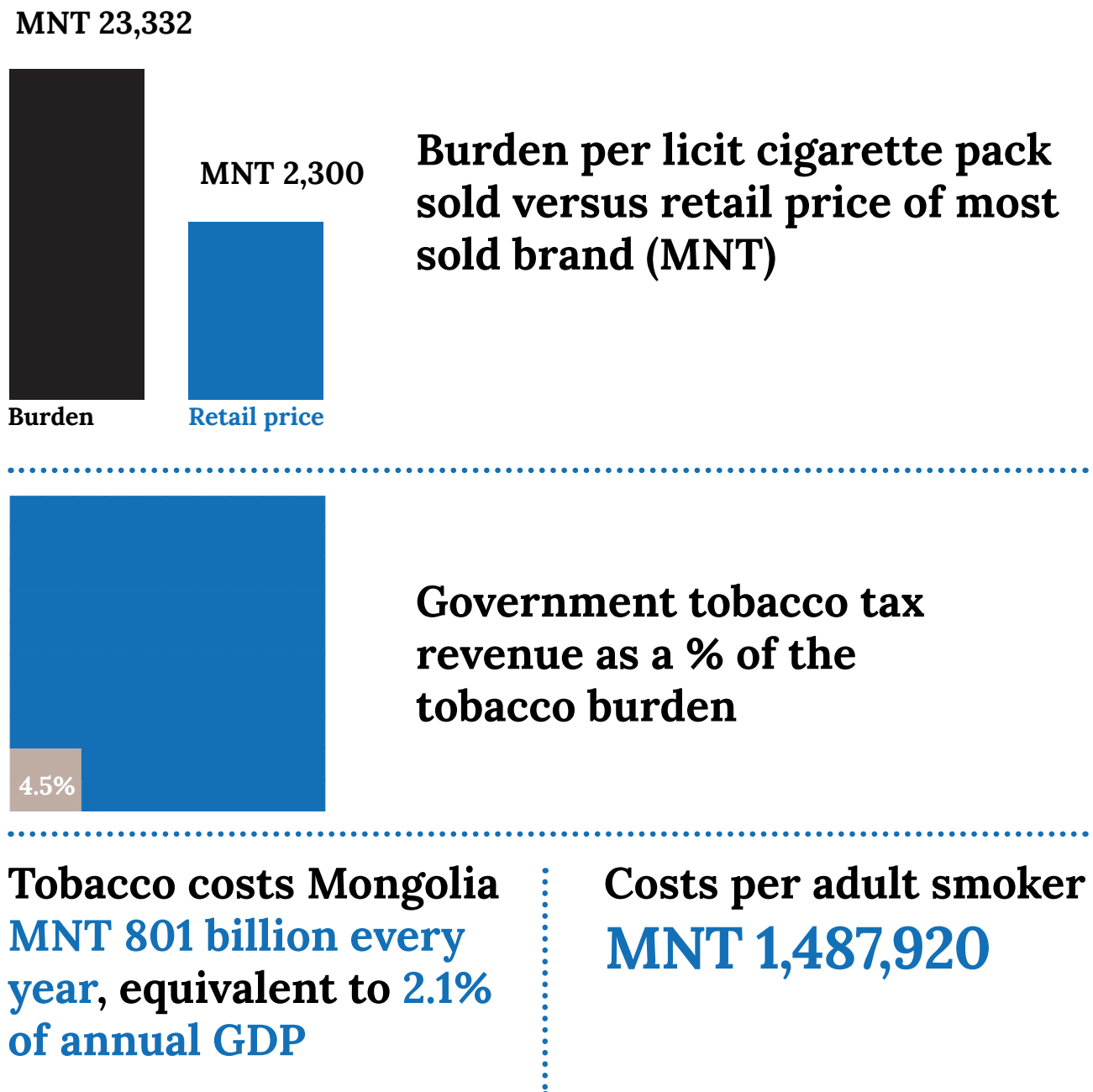
Fig. 4: Contextualizing the burden of tobacco use¹²

Figure 5 breaks down the share of the burden of tobacco-attributable mortality, workplace costs, and health-care costs. **Figure 6** and **Figure 7** illustrate the annual health losses that occur due to tobacco use.

¹² Figures subject to rounding. Tax revenue comparisons are provided for context and are not meant to suggest that taxes should be increased to levels that equalize revenue with the tobacco burden. Government tobacco tax revenue (MNT 36 billion in 2020) and the retail price of the most sold brand are from WHO Global Tobacco Control Report 2021 (analysts added estimated VAT taxes to the 28.7 billion specific excise taxes reported in the GTCR). The number of licit cigarette packs sold (34.3 million) is estimated by dividing total specific excise tax revenue by the specific excise tax per pack of cigarettes, as reported in the 2020 GTCR.

Fig. 5. Breakdown of the share of the cost of tobacco-attributable mortality, workplace costs, and health-care costs (MNT billions) in 2020

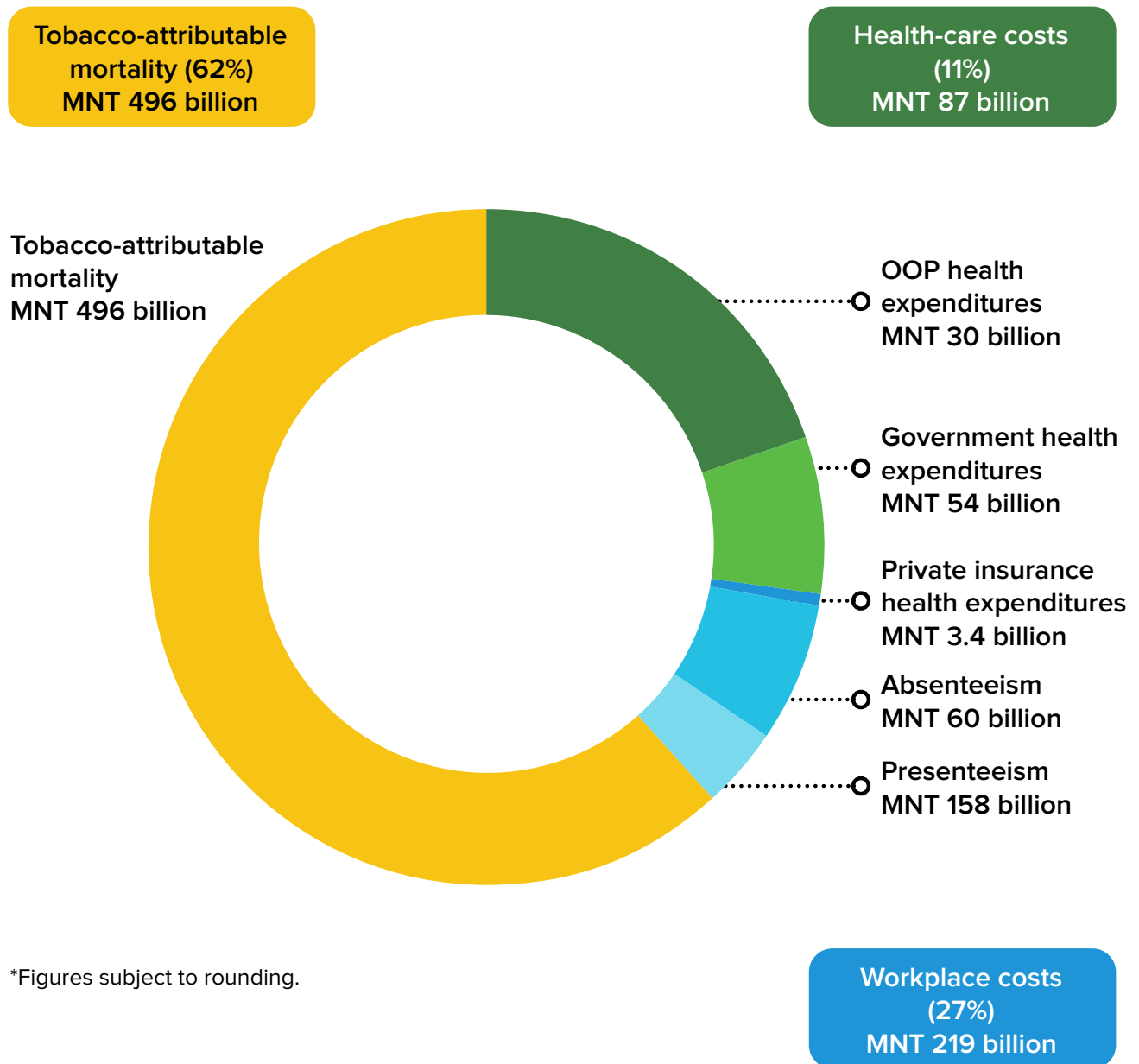
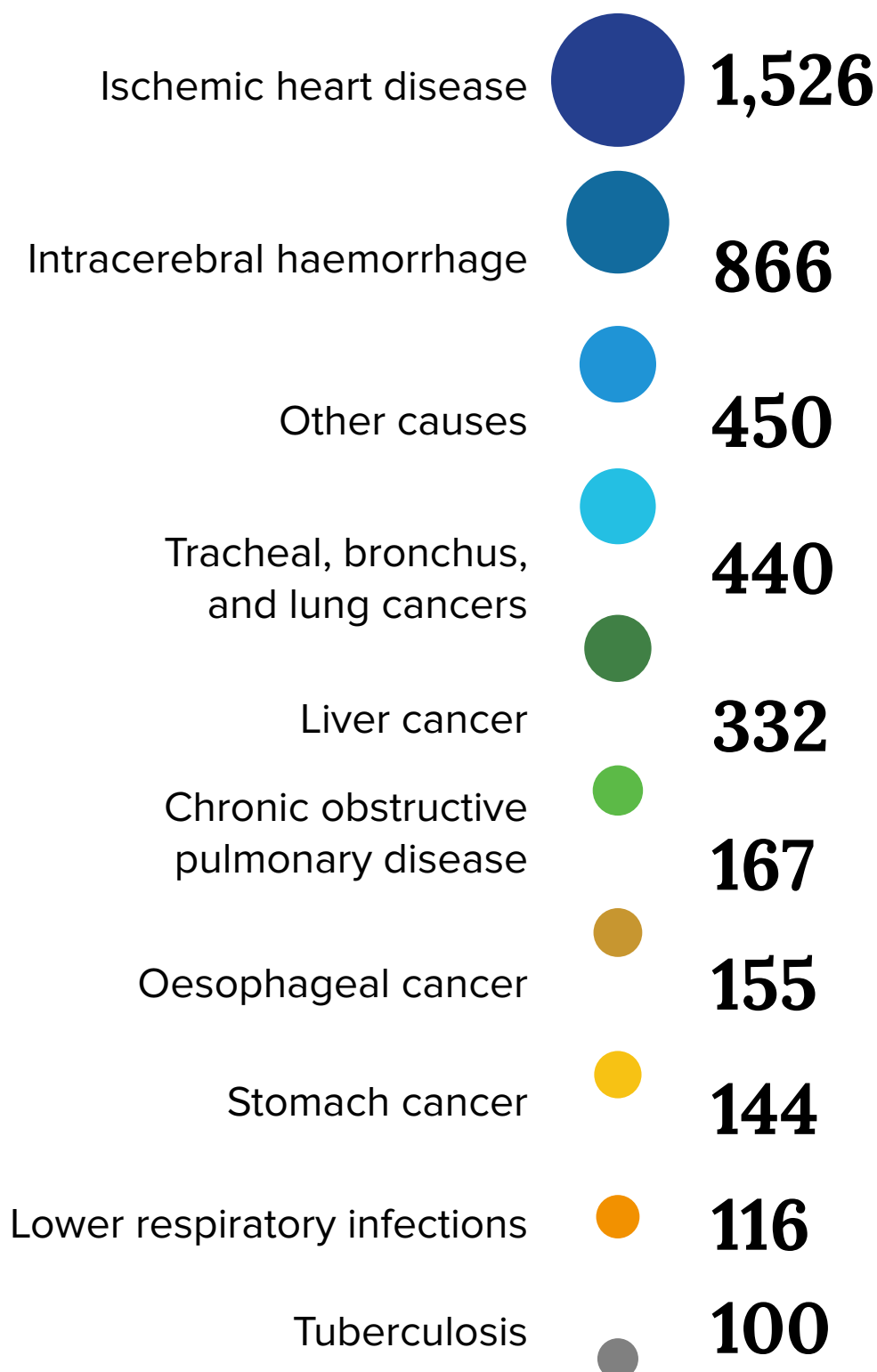
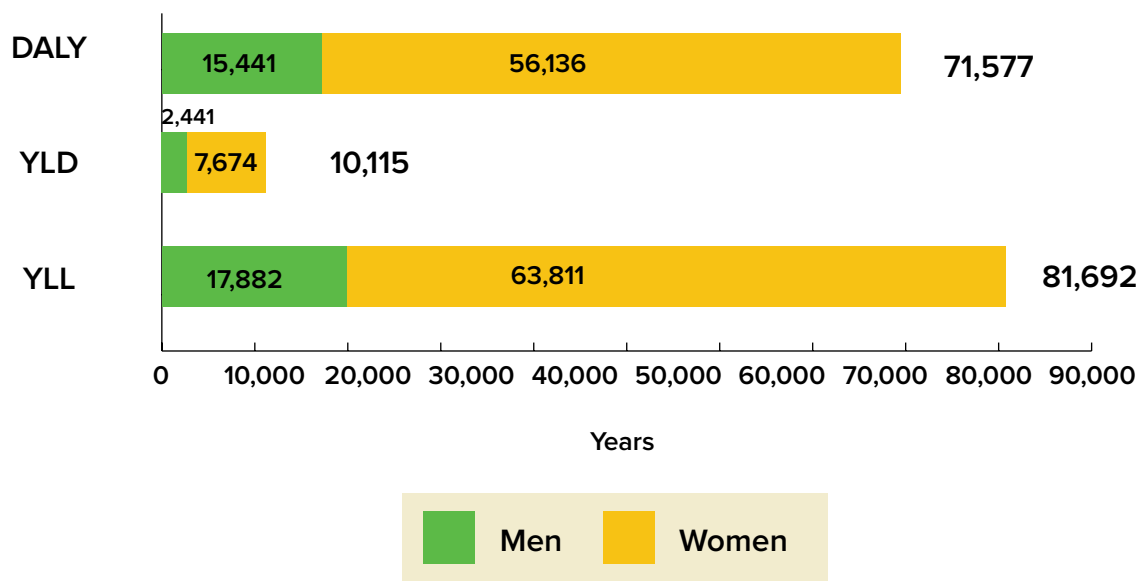


Fig. 6: Tobacco-attributable deaths by disease in Mongolia, 2019

Source: Results are from the IHME Global Burden of Disease Results Tool. Other causes include ischemic stroke, subarachnoid haemorrhage, peptic ulcer disease, Alzheimer's disease and other dementias, diabetes mellitus type 2, pancreatic cancer, larynx cancer, colon and rectum cancer, lip and oral cavity cancer, asthma, cervical cancer, leukaemia, aortic aneurysm, bladder cancer, kidney cancer, breast cancer, other pharynx cancer, prostate cancer, atrial fibrillation and flutter, gallbladder and biliary diseases, nasopharynx cancer, and rheumatoid arthritis.

Fig. 7: Tobacco-attributable DALYs, YLDs, and YLLs in Mongolia, by gender, 2019

A Disability-adjusted life year (DALY) is a universal metric that allows comparison between different populations and health conditions across time. DALYs equal the sum of years of life lost (YLLs) and years lived with disability (YLDs). One DALY equals one lost year of healthy life. Years of life lost (YLL) are years lost due to premature mortality. Years lived with disability (YLD) can also be described as years lived in less-than-ideal health. A YLD is calculated by taking the prevalence of the condition multiplied by the disability weight for that condition [63].

4.2 Implementing policy measures that reduce the burden of tobacco use

The WHO FCTC provides a framework for tobacco control measures to be implemented by Parties at the national and international levels to reduce continually and substantially the prevalence of tobacco use and exposure to tobacco smoke. Through the full implementation of the tobacco control measures in the WHO FCTC, Mongolia can secure significant health and economic returns, and begin to reduce the MNT 801 billion in annual economic losses from tobacco use.

The next two subsections present the health and economic benefits that result from six WHO FCTC policy actions: 1) to increase tobacco taxation to reduce the affordability of tobacco products; 2) to expand and enforce 100 percent smoke-free public places and workplaces to protect people from the harms of tobacco smoke; 3) to implement plain packaging of tobacco products; 4) to enact bans on tobacco advertising, promotion, and sponsorship (TAPS); 5) to promote and strengthen public awareness of tobacco issues ; and 6) to promote cessation of tobacco use and treatment for tobacco dependence by training health professionals to provide brief advice to quit tobacco use.

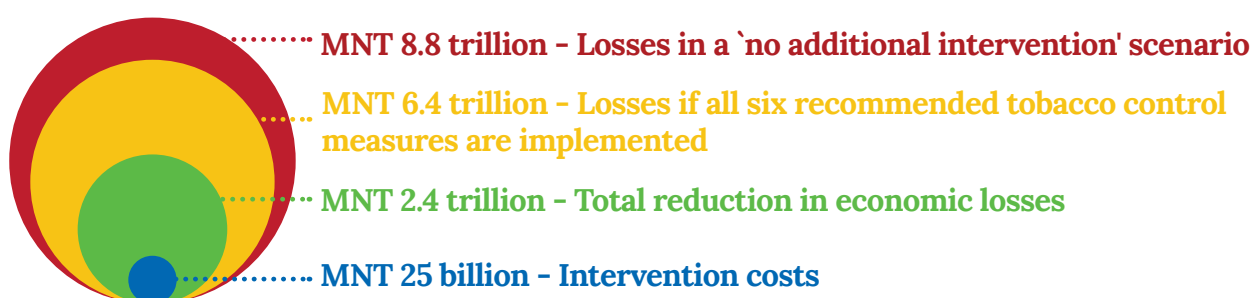
4.2.1 Health benefits – lives saved

The full implementation of the WHO FCTC in Mongolia (inclusive of all six of the measures listed above) would lower the prevalence of tobacco use, leading to substantial health gains for the country. Implementing the package of six WHO FCTC policy actions that are the focus of this investment case would reduce the prevalence of cigarette smoking by 50 percent (in relative terms) over 15 years, saving 19,211 lives over 2023-2037, or 1,281 lives annually.

4.2.2 Economic benefits – costs averted

Implementing the package of six key WHO FCTC policy actions that are the focus of this Investment Case would result in Mongolia avoiding 27 percent of the economic loss that it is expected to occur from tobacco use over the next 15 years. **Figure 8** illustrates the extent to which Mongolia can shrink the economic losses it is expected to incur under the status quo.

Fig. 8: Tobacco-related economic losses over 15 years, 2023-2037

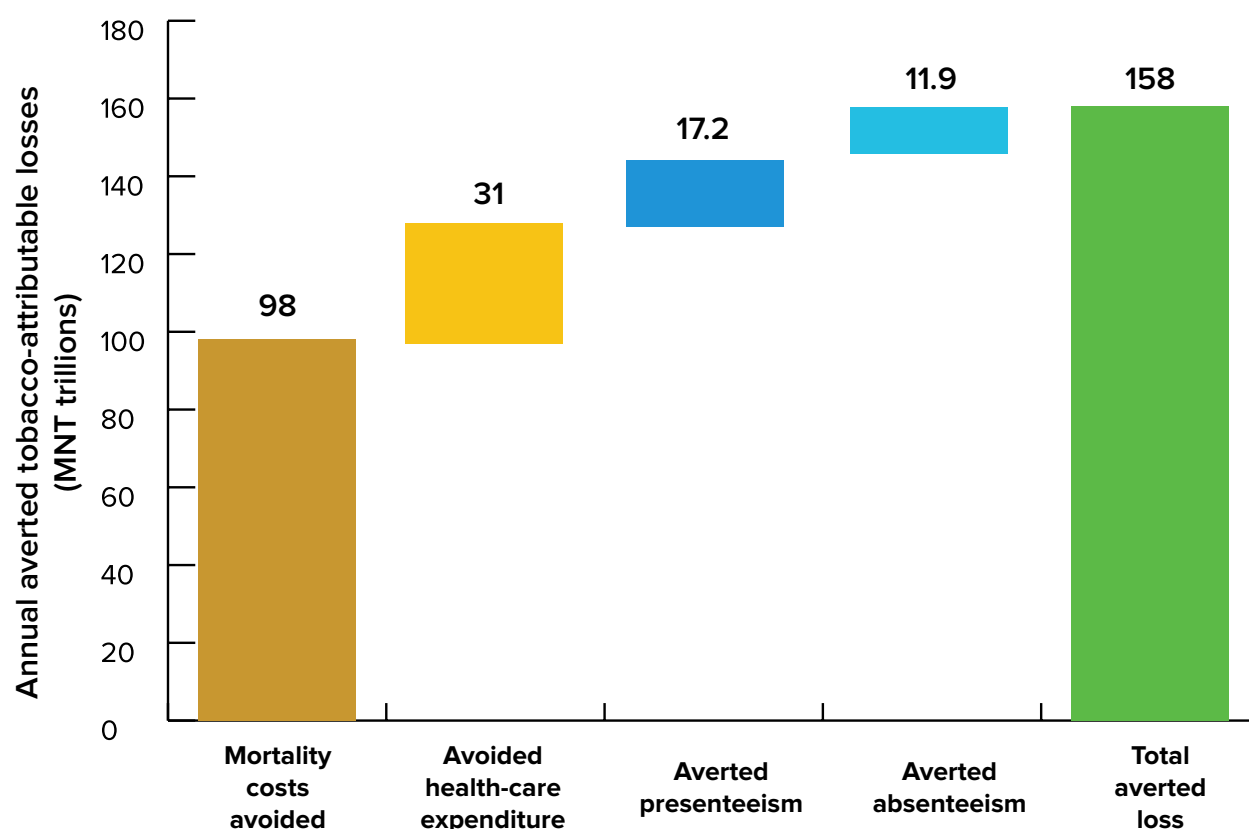


In total, over 15 years Mongolia would save about MNT 2.4 trillion that would otherwise be lost if the package of six key WHO FCTC policy actions are not implemented. This is equivalent to around MNT 158 billion in annual avoided losses.

With better health that would arise from the implementation of the WHO FCTC, fewer individuals would need access to health-care services due to tobacco-related diseases, resulting in direct cost savings to the government and citizens. Better health also leads to increased productivity. Fewer working-age individuals leave the workforce prematurely due to death. Workers miss fewer days of work (absenteeism) and are less hindered by health complications while at work (presenteeism).

Figure 9 breaks down the sources from which annual avoided costs accrue from implementation of the package of six WHO FCTC policy actions. The largest annual avoided costs result from averted tobacco-attributable mortality (MNT 98.2 billion). The next highest source is averted presenteeism (MNT 31.2 billion), averted health-care expenditures (MNT 17.2 billion) and reduced absenteeism (MNT 11.9 billion).

Fig. 9: Sources of annual avoided economic costs as a result of implementing the tobacco control policy package in Mongolia*



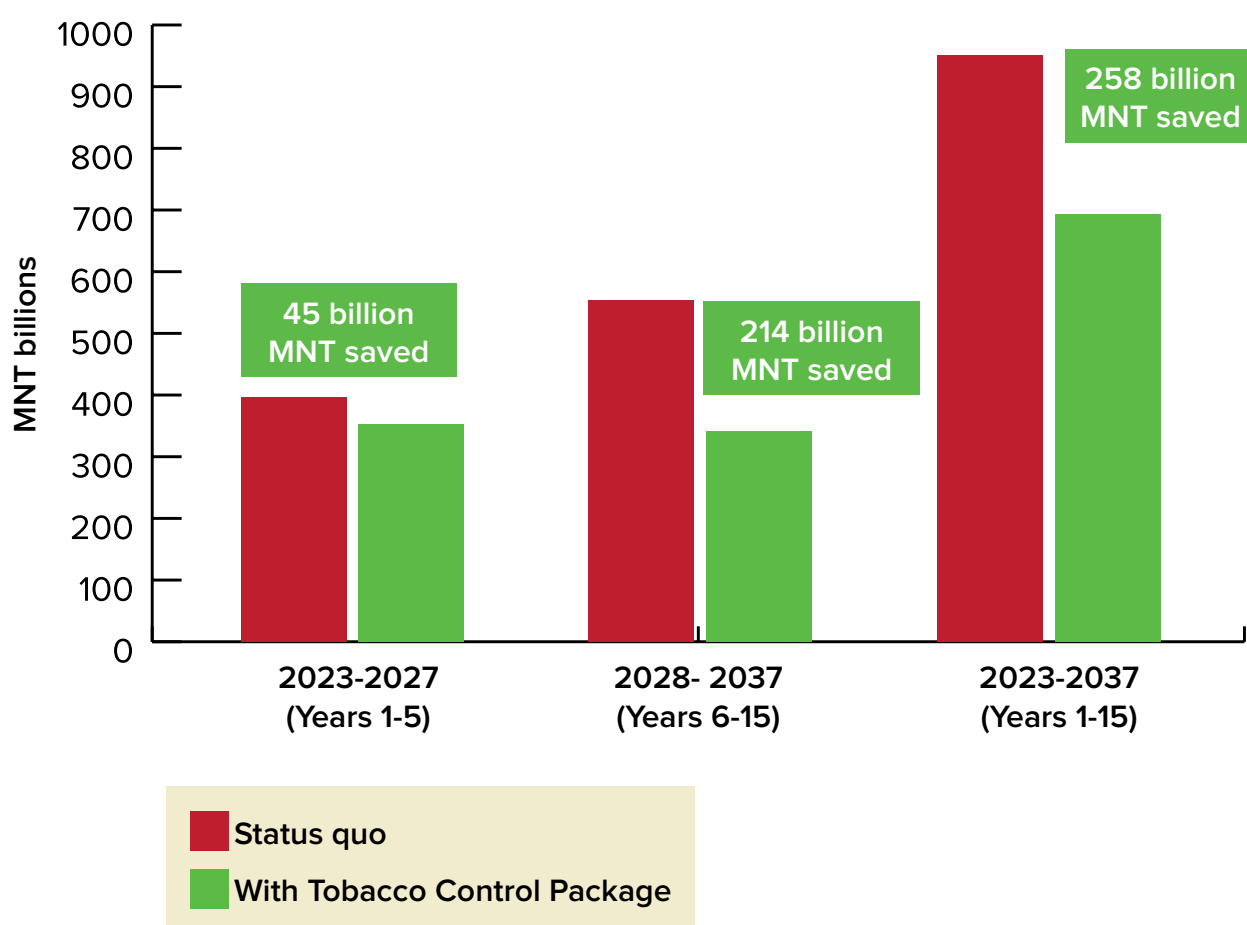
*Figures subject to rounding.

Implementing the package of six WHO FCTC policy actions examined in the investment case will reduce medical expenditure both for citizens and the government. Presently, total private and public health-care expenditures in Mongolia are about MNT 1.6 trillion annually [64], and 5.3 percent of this amount is directly related to treating disease and illness due to tobacco use [7] ($\approx$ MNT 87.3 billion).

Year-on-year, the package of interventions would lower tobacco use prevalence, leading to less illness, and consequently less health-care expenditure (see **Figure 10**). Over the 15-year time horizon of the analysis, the package of interventions averts MNT 258 billion in health-care expenditures, or MNT 17.2 billion annually. Of these savings, 61 percent of savings would go to the government and 35 percent would go to individual citizens who would have had to

make OOP payments for health care. The remainder of savings would go to private insurance and other sources of health-care expenditures. Thus, from reduced health-care costs alone, the government would expect to save about MNT 158 billion over 15 years. Simultaneously, the government would successfully reduce the health expenditure burden that tobacco imposes on Mongolians through OOP payments, supporting efforts to reduce economic hardship on families. For families with tobacco users who quit, spending that would have been on tobacco products or health care, could instead be invested in nutrition, education, and other productive inputs to secure a better future.

Fig. 10: Private and public health-care costs (and savings) in Mongolia over the 15-year time horizon, 2023-2037



*Figures subject to rounding.

4.2.3 *The return on investment*

While the health gains from strengthening tobacco control in Mongolia are by themselves enough to justify the cost of the interventions, the economic gains that will also accrue make the case for WHO FCTC implementation even stronger.

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 WHO FCTC tobacco control investments by the costs of the investments.

For this investment case, the ROI for each intervention was evaluated in the short-term (five years), to align with planning and political cycles, and in the medium-term (15 years) to align with the original timeframe allotted for the SDGs. The ROI was also evaluated for the full package of six WHO FCTC policy actions. Total benefits (avoided economic losses due to tobacco-attributable mortality, health-care expenditures, and diminished workplace productivity) 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. All interventions deliver an 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 gain economic benefits ranging from between 4 to 79 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.. Given the long-term nature of many tobacco-related illnesses, with disease often only developing after years of tobacco use, the ROIs for each intervention would continue to grow over time, reflecting the compounding gains from planning and development stages to full implementation.

Table 2: Return on investment, by tobacco control policy/intervention (MNT billions)

Return on investment, by tobacco control measure	First 5 years (2023-2027)			All 15 years (2023-2037)		
	Total costs (billions)	Total benefits (billions)	ROI	Total costs (billions)	Total benefits (billions)	ROI
Tobacco control package* (all policies/interventions implemented simultaneously)	10.5	411	39	25	2,377	97
Increase tobacco taxation (cigarette taxation modeled)¹³ (WHO FCTC Article 6)	1.4	113	79	2.8	730	262
Create smoke-free public places and workplaces (WHO FCTC Article 8)	1.9	129	69	3.4	877	259
Implement plain packaging (WHO FCTC Guidelines for Implementation of Article 11 and WHO FCTC Guidelines for Implementation of Article 13)	1.0	33	33	1.8	229	126
Public awareness of tobacco control issues (WHO FCTC Article 12)	1.6	122	76	3.9	836	216
Enact and enforce a comprehensive TAPS bans (WHO FCTC Article 13)	1.0	65	66	1.9	451	242
Promote tobacco cessation and treatment for dependence by training health professionals to provide brief advice to quit (WHO FCTC Article 14)	2.6	11.7	4	8.5	147	17

* 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 [65]. 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, increasing tobacco taxes on cigarettes is expected to have the highest return on investment (262:1).¹⁴ The return will be even higher with increasing tax on all tobacco products. Creating smoke-free public places and workplaces to protect people from the harms of tobacco smoke is expected to have the next highest return on investment (259:1), followed by enacting and enforcing a comprehensive ban on all forms of tobacco advertising,

13 Raise taxes to what is considered in the WHO Report on the Global Tobacco Epidemic, 2021 as a high-level of achievement, which is for total taxes to represent at least 75 percent of the retail price[38]. In the scenario modeled, cigarette taxes would meet the 75 percent threshold in 2032.

14 Rounded to the nearest whole number

promotion, and sponsorship (TAPS) (242:1), public awareness of tobacco control issues (216:1), implementing plain packaging of tobacco products (126:1), and finally promoting cessation of tobacco use and treatment for tobacco dependence by training health professionals to provide brief advice to quit tobacco use(17:1).

5. Examining additional impacts: government revenue, equity, and the SDGs

The investment case examines how increasing taxes would impact government revenue and the contributions that stronger WHO FCTC implementation would make towards Mongolia's fulfilment of SDG Target 3.4.

5.1 Tax analysis: the impact of increasing cigarette taxes on government revenue

The Addis Ababa Action Agenda on Financing for Development [66], aligned with the adoption of the Sustainable Development Goals, noted that tobacco price and tax measures “represent a revenue stream for financing for development”.

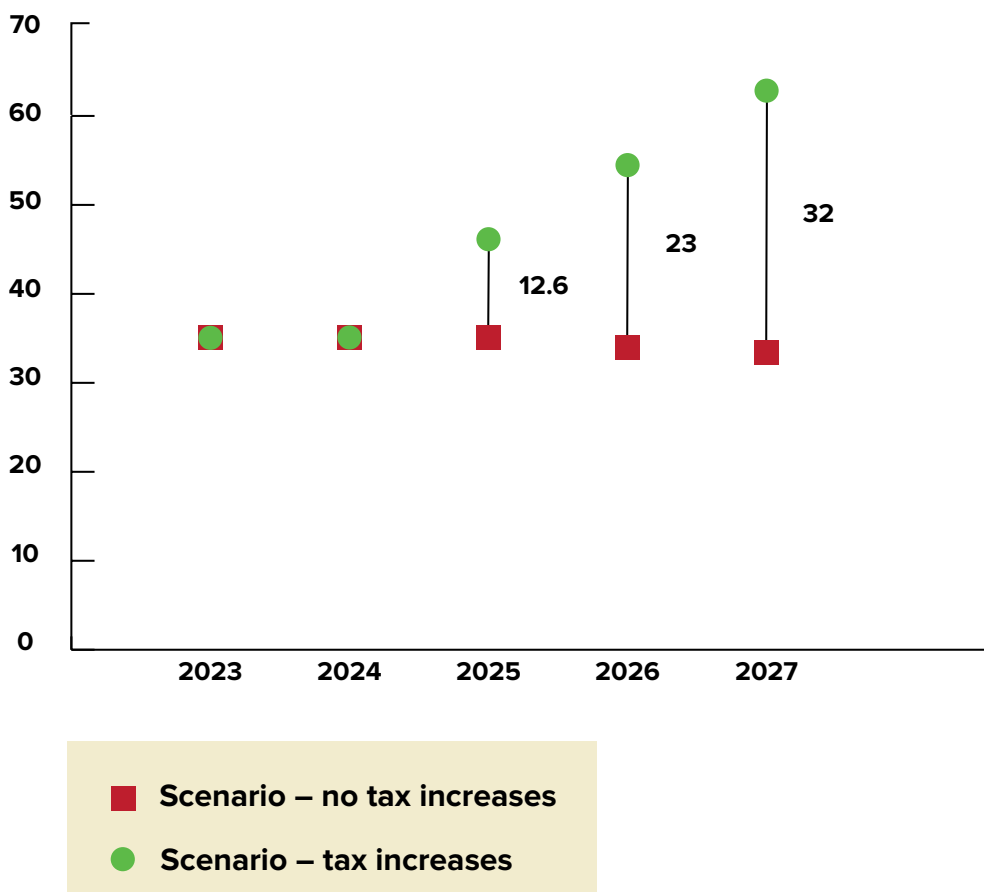
This section analyses a scenario in which Mongolia chooses to increase tobacco taxes towards levels considered in the WHO Report on the Global Tobacco Epidemic, 2021 as a high-level of achievement. The modelling in the investment case only considers tax on cigarettes and uses a hypothetical scenario in which over five years, Mongolia gradually increases the specific excise tax in real terms from its current level MNT 836 to MNT 1,816, in 2027.

Evidence from countries in the Asia-Pacific region shows that on average a 10 percent increase in price results in a 4.9 percent reduction in consumption [67]. Accounting for the rise in demand that results from income increases, under the described tax increase pattern and demand elasticities, licit cigarette consumption would drop from the present amount of about 34.3 million packs annually to about 30.3 million in 2027.

Even though there are drops in consumption, revenue gains will still occur. Although reducing the affordability of tobacco products leads people to quit smoking or reduce consumption, many people will continue to smoke, largely because of the addictive nature of tobacco, paying higher taxes to the government each time they purchase cigarettes.

Over a five-year period, **Figure 11** compares annual government cigarette tax revenue (undiscounted) in a hypothetical scenario where Mongolia enacts strong specific excise taxes to a scenario in which tobacco prices remain static over time. The figure depicts a growing gap in annual tax collection between the two scenarios. It is assumed that no change occurs during the first two years, allowing time for debate and legislation of the new tax increase. In 2025, large tax increases in an intervention scenario yield an additional MNT 12.6 billion in revenue, growing to MNT 32 billion in 2027. **Figure 11** demonstrates that under the hypothetical scenario with tax increases (in blue), government revenues will substantially grow even as many tobacco users quit because of the increased cost.

Fig. 11: Additional annual tax revenue (undiscounted) in comparison to the baseline scenario, in Mongolia, 2023-2027



5.2 The Sustainable Development Goals and the WHO FCTC

Implementing the package of six WHO FCTC policy actions will support Mongolia to meet SDG Target 3.a to strengthen implementation of the WHO FCTC. Moreover, acting now will contribute to Mongolia's efforts to meet SDG Target 3.4 to reduce by one third premature mortality from NCDs by 2030: the measures would contribute the equivalent of around 19 percent of the needed reduction in mortality for Mongolia to achieve SDG Target 3.4.

The WHO FCTC is an accelerator for sustainable development, and its implementation will benefit the achievement of many SDGs, including those outside of the health and well-being domain [21]. For example, stronger tobacco control will contribute to the reduction of poverty and inequalities (SDGs 1 and 10, respectively) and economic growth (SDG 8).



SDG Target 3.4

By 2030 the WHO FCTC measures would contribute the equivalent of around 3 percent of the needed reduction in mortality for Mongolia to achieve SDG Target 3.4.



6. Conclusion and recommendations

Each year, tobacco use costs Mongolia MNT 801 billion in economic losses and causes substantial human development losses. Fortunately, as the investment case shows, there is an opportunity to reduce the social and economic burden of tobacco in Mongolia. Enacting the six key WHO FCTC policy actions would save 1,281 lives each year and reduce the incidence of disease, leading to savings from averted medical costs and averting productivity losses.

In economic terms, these benefits are substantial, adding up to MNT 2.4 trillion over the next 15 years. Further, the economic benefits of strengthening tobacco control in Mongolia greatly outweigh costs of implementation (MNT 2.4 trillion in benefits versus just MNT 24.5 billion in costs).

By investing now in the package of six WHO FCTC policy actions modeled under this investment case, Mongolia would not only reduce tobacco consumption, improve health, reduce government health expenditures, and grow the economy, it would also reduce the hardships faced by many Mongolians. Mongolia can also reinvest savings from government health-care expenditures and revenue from increased tobacco taxes into national development priorities such as universal health coverage and other social protection measures, as well as COVID-19 response and recovery efforts.

Based on the findings of this investment case, these key actions for Mongolia are recommended to be pursued simultaneously:

Recommendations

- 1** Commit to fully implement the WHO FCTC in Mongolia
- 2** Strengthen tobacco tax structures and increase tax rates (WHO FCTC Article 6)
- 3** Take action to strengthen, implement and enforce the other five key WHO FCTC policy actions modeled in this investment case
- 4** Strengthen multisectoral coordination for tobacco control in Mongolia by establishing a national coordination mechanism and encourage the participation of civil society in WHO FCTC implementation (WHO FCTC Articles 5.2(a) and 4.7)
- 5** Renew and update the National Tobacco Control Strategy for Mongolia (WHO FCTC Article 5.1)
- 6** Implement measures to protect public health policies from the commercial and other vested interests of the tobacco industry (WHO FCTC Article 5.3)
- 7** Fully implement the Protocol to Eliminate Illicit Trade in Tobacco Products, including by building capacity to combat illicit trade (Protocol and WHO FCTC Article 15)
- 8** Identify opportunities to link the implementation of the WHO FCTC with wider sustainable development strategies in Mongolia

1

Commit to fully implement the WHO FCTC in Mongolia

As a Party to the WHO FCTC, Mongolia has undertaken to fully implement the Convention. The WHO FCTC is an evidence-based treaty that sets out a clear blueprint for action to protect present and future generations from the devastating health, social, environmental and economic consequences of tobacco consumption and exposure to tobacco smoke. Mongolia is encouraged to commit to fully implementing the treaty, with a focus on the recommendations made for Parties in the Global Strategy to Accelerate Tobacco Control: Advancing Sustainable Development through the Implementation of the WHO FCTC 2019–2025, in relevant WHO FCTC implementation guidelines, in WHO FCTC Needs Assessment Reports and in this investment case.

Through the FCTC 2030 project, the WHO FCTC Secretariat's flagship development assistance project, Mongolia is receiving support to take policy actions towards the full implementation of the treaty. As a FCTC 2030 project country, Mongolia is accessing technical and financial resources, including intensive support from the WHO FCTC Secretariat, WHO and UNDP.

2

Given the effectiveness of tobacco taxation, strengthen tax structures for all tobacco products (including novel products) and increase tax rates (WHO FCTC Article 6)

Mongolia is encouraged to reform its tobacco taxation structure in accordance with recommendations made in the WHO FCTC implementation guidelines for Article 6 [70] and by WHO in the WHO Technical Manual on Tobacco Tax Policy and Administration [39]. It is also encouraged to substantially raise the total tax share of the retail price of tobacco to meet or exceed 75 percent of the retail price (considered in the WHO Report on the Global Tobacco Epidemic, 2021 as a high-level of achievement) [38].

In line with the 2015 Needs Assessment Report for the implementation of the WHO FCTC in Mongolia, it is recommended to regularly monitor tax rates and consider adjustment or revaluation processes. Robust tax administration and enforcement is encouraged to minimize tax evasion [26].

It is also recommended to ensure robust tobacco taxation policies are in place for all types of tobacco (including for smokeless tobacco and novel tobacco products), and that consideration is given to removing duty-free allowances for tobacco.

There is clear evidence that raising cigarette prices through increased taxes is a highly effective measure for reducing smoking among youth, young adults, and people from lower socioeconomic communities. Increasing the price of tobacco will have benefit for these vulnerable populations.

3

Take action to strengthen, implement and enforce the other five key WHO FCTC policy actions modeled in this investment case by:

- removing the allowance for designated smoking areas as well as expanding and enforcing other policies to ensure 100 percent smoke-free public places and workplaces to protect people from the harms of tobacco smoke. As Mongolia is revising the national Tobacco Control Law, this is a key opportunity to require all enclosed smoke-free public places and workplaces to be legally required to be smoke-free (WHO FCTC Article 8);
- considering the implementation of plain packaging to reduce the appeal of tobacco packaging and to make health warnings more prominent (WHO FCTC Guidelines for implementation of Article 11 and WHO FCTC Guidelines for implementation of Article 13);
- enacting and enforcing a comprehensive ban on all forms of TAPS, including by banning product display at point of sale (WHO FCTC Article 13);
- promoting and strengthening public awareness of tobacco control issues, including the health risks of the use of tobacco products (including novel products) and tobacco smoke, addiction, and the benefits of cessation (WHO FCTC Article 12); and
- promoting cessation of tobacco use and treatment for tobacco dependence by training health professionals to provide brief advice to quit tobacco use, especially in primary care settings. Further gains would be possible with the provision of additional support to tobacco users, such as offering specialized tobacco dependence treatment services, a national toll-free quit line and/or internet based quit support and making pharmacotherapies free of cost, if possible (WHO FCTC Article 14).

4

Strengthen multisectoral coordination for tobacco control in Mongolia by establishing a national coordination mechanism and encourage the participation of civil society in WHO FCTC implementation (WHO FCTC Articles 5.2(a) and 4.7)

Stronger multisectoral planning and coordination in line with WHO FCTC Article 5 are critical to take the investment case recommendations forward and advance WHO FCTC implementation in Mongolia. The investment case demonstrates the implications of tobacco use and importance of tobacco control for a wide range of national stakeholders, including the Ministry of Finance, MoH, and civil society organizations (CSOs). The investment case findings can be used to promote collaboration and coordination among sectors.

While Mongolia has established a focal point for tobacco control within MoH, Mongolia is recommended to officially establish a national coordination mechanism (NCM) on tobacco control. The previous Health Committee could be reactivated and designated as the official NCM on tobacco control in Mongolia and could be made responsible for coordinating implementation of the WHO FCTC. Beyond establishing an NCM, efforts should also be made to ensure the NCM is adequately resourced. In line with this, it is recommended to reactivate the Health Promotion Foundation and reinstate budgets as soon as possible to ensure sustainable financing for tobacco control in Mongolia. The revision process of the Tobacco Control Law presents an opportunity to establish an NCM for tobacco control in Mongolia by law. Action to establish and strengthen the NCM can be guided by the joint Convention Secretariat-UNDP publication, *National Coordinating Mechanism for Tobacco Control: Toolkit for Parties to Implement Article 5.2(a) of the WHO FCTC* [71].

The work of NCM will be enhanced by inviting the media and CSOs to support the work of the NCM, as appropriate, in the areas of advocacy, compliance building and fostering positive public opinion for tobacco control measures.

5

Renew and update the National Tobacco Control Strategy for Mongolia (WHO FCTC Article 5.1)

It is recommended that Mongolia renews and updates the expired National Strategy to Combat and Prevent Tobacco Harms 2014-2020. It is also encouraged to establish a stakeholder engagement plan for the updated strategy. This will, among other things, serve to guide the work of an NCM, as well as set out plans for strengthening tobacco control policies and legislation. The updated national tobacco control strategy for Mongolia should include actions that would:

- Outline a comprehensive workplan and timeline for the full implementation of the WHO FCTC.
- Strengthen capacity for compliance building and enforcement of the Tobacco Control Law.
- Reactivate and operationalize the Health Promotion Foundation.
- Establish an NCM for tobacco control.
- Prevent children and young people from taking up tobacco use.
- Increase education and awareness raising of the harms and health risks of tobacco use, especially for youth.
- Strengthen public awareness on tobacco control issues by consider sustained mass media anti-tobacco campaigns at the local and national levels.
- Ensure gender-sensitive approaches to policy, programs, and services.
- Prioritize vulnerable groups, including, but not limited to, women and girls, youth, those with less education, those with low literacy, and those with low incomes.
- Encourage and support current tobacco users to quit.
- Ensure enforcement of the Anti-Corruption Law when government and public officials interact with the tobacco industry.
- Address the impact of tobacco use on the environment.

The stakeholder engagement plan is important to establish a clear way forward on how the various sectors and key stakeholders will be involved in the dissemination of the strategy along with key anti-tobacco messaging. The plan should be developed in collaboration with relevant sectors of government and civil society.

6

Implement measures to protect public health policies from the commercial and other vested interests of the tobacco industry (WHO FCTC Article 5.3)

It is recommended that Mongolia takes action to protect the country's public health policies from the commercial and other vested interests of the tobacco industry. A resolution made by the World Health Assembly in 2001, citing the findings of the Committee of Experts on Tobacco Industry Documents, states that "the tobacco industry has operated for years with the express intention of subverting the role of governments and of WHO in implementing public health policies to combat the tobacco epidemic" [72].

The Preamble of the WHO FCTC recognizes that Parties "need to be alert to any efforts by the tobacco industry to undermine or subvert tobacco control efforts and the need to be informed of activities of the tobacco industry that have a negative impact on tobacco control efforts". The WHO FCTC includes a specific obligation that "in setting and implementing their public health policies with respect to tobacco control, Parties shall act to protect these policies from commercial and other vested interests of the tobacco industry in accordance with national law". The 2021 global progress report on implementation of the WHO Framework Convention on Tobacco Control reported that the most frequently mentioned barrier to the implementation of the Convention by Parties is the interference by the tobacco industry, including the industries producing novel and emerging tobacco products and nicotine products [73].

Mongolia is encouraged to review current policies and legislation in light of the Implementation Guidelines for WHO FCTC Article 5.3 [74], and then address outstanding gaps by implementing the recommendations made in those guidelines. Attention should also be given to ensuring policy coherence across government policy-making to prioritise public health and WHO FCTC implementation.

In particular, it is recommended that Mongolia strengthens existing tobacco control legislation by removing any opportunities for tobacco industry engagement in policymaking. It is also recommended for Mongolia to enforce the Anti-Corruption Law and ensure government and public officials adhere to this law when interacting with the tobacco industry. It is also recommended that the Government of Mongolia issue a code of conduct prescribing standards in accordance with WHO FCTC Article 5.3 for all government and public officials. Government and public officials should be required to disclose conflicts of interest including any involvement with the tobacco industry or any entities acting on behalf of the tobacco industry. Details of any meeting with the government and the tobacco industry should be made transparent and available to the public.

7

Fully implement the Protocol to Eliminate Illicit Trade in Tobacco Products, including by building capacity to combat illicit trade (Protocol and WHO FCTC Article 15)

It is recommended that Mongolia moves forward with the full implementation of the Protocol to Eliminate Illicit Trade in Tobacco Products. Mongolia has taken an important step in ratifying the Protocol to Eliminate Illicit Trade in Tobacco Products in 2014 and requiring excise tax stamps on tobacco products.

It is recommended that Mongolia provide greater transparency in the confiscation and destruction of illicit products; reward whistle-blowers who provide information on illicit trade of tobacco products; develop a track and trace system, and increase research efforts to monitor illicit trade of tobacco products.

In line with the 2015 Needs Assessment for the implementation of the WHO FCTC in Mongolia, it is recommended that the ministry responsible for issuing tobacco manufacturing, farming and import licences be more involved in the implementation of the WHO FCTC and Protocol.

8

Identify opportunities to link the implementation of the WHO FCTC with wider sustainable development strategies in Mongolia

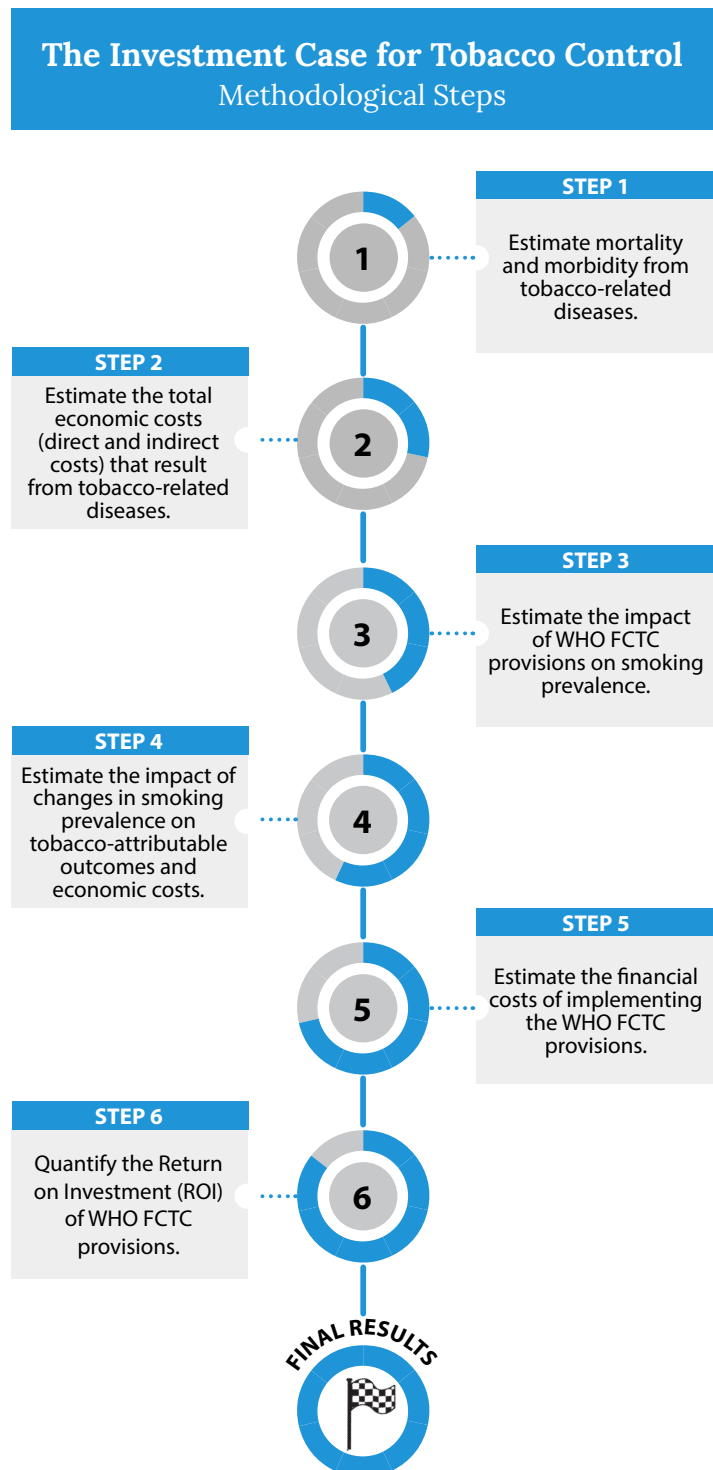
With the vast health, economic, social and environment costs of tobacco, the case is clear: implementing the WHO FCTC is a powerful means for Mongolia to improve the lives of citizens, achieve the SDGs, and better the conditions and future of the country. All sectors have a role to play in tackling tobacco use, and the benefits of full WHO FCTC implementation will enrich all aspects of life in Mongolia. While the Mongolia Sustainable Development Vision 2030 includes an objective to reduce NCDs, tobacco control and reducing tobacco use is not specifically mentioned [75]. The Government of Mongolia should continue prioritize tobacco control and the implementation of the WHO FCTC, as it has done in the Vision 2050 [76] and the Healthy Mongolian National Movement, in other national plans such as Mongolia's Sustainable Development Vision 2030, Mongolia's UN Sustainable Development Cooperation Framework 2023-2027 [77] and other sustainable development strategies.

Annex: Methodology

A1.1 Overview

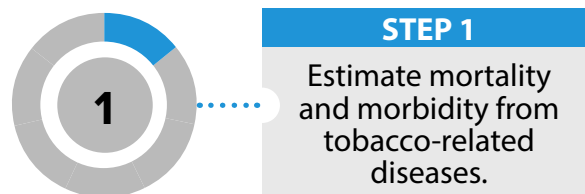
The economic analysis consists of two components: 1) assessing the current burden of tobacco use and 2) examining the extent to which WHO FCTC provisions can reduce the burden. The first two methodological steps depicted in Figure A1 are employed to assess the current burden of tobacco use, while methodological steps 3-6 assess the impact, costs, and benefits of implementing or intensifying WHO 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 investment case

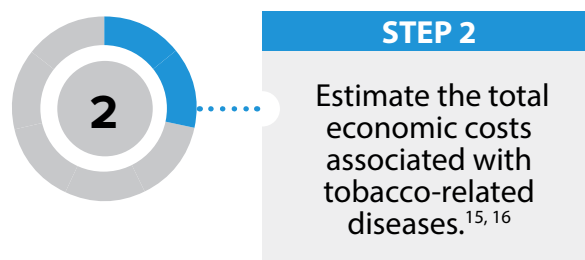


A1.2 Component one: current burden

The current burden model component provides a snapshot of the health and economic burden of tobacco use in Mongolia in the most recent year for which data are available.



The investment case model is populated with country-specific data on tobacco-attributable mortality and morbidity from the 2019 Global Burden of Disease Study (GBD) [5], [78]. 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.



Next, the model estimates the total economic costs of disease and death caused by tobacco use. The total economic costs include tobacco-attributable health-care expenditures, the value of tobacco-attributable mortality, and workplace productivity losses: absenteeism and presenteeism.

Health-care expenditures – Health-care expenditures include smoking-attributable public (government-paid), private (insurance, individual out-of-pocket), and other health-care expenditures. The proportion of health-care costs attributable to smoking was obtained using the formula for estimating smoking attributable fraction (SAF) of health-care expenditures from Goodchild et al. (2018) [81]. The SAF for Mongolia is estimated at 5.3 percent. To calculate the share of smoking-attributable health-care expenditures borne by public, non-profit, and

15 In assessing the current burden of tobacco use, the economic costs of mortality include the cost of deaths due to any form of exposure to tobacco (including 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 and presenteeism. While other forms of tobacco may also cause losses in these categories, no data are available to precisely ascertain those losses.

16 All diseases are assumed to decrease in proportion to smoking prevalence when the decrease in prevalence occurs. While the model overestimates how quickly health benefits will accrue for some diseases, for example cancers—recent evidence suggests notable declines in the risk of lung cancer incidence begin two to five years after smoking prevalence decreases [79]. On the other hand, the risk of incidence of other diseases, for example cardiovascular disease (CVD), declines significantly in the years immediately following quitting [80].

private entities, it was assumed that each entity incurred smoking-attributable health-care costs in equal proportion to the entity's contribution to total health expenditure. Health-care expenditures were obtained from the WHO Global Health-care Expenditure Database (GHED) [64]. The latest year for which data are available in WHO GHED is 2019. To obtain 2020 values, we took the average annual increase in health-care expenditures in Mongolia over the past 10 years and applied that increase to the 2019 health-care expenditure values.

Workplace costs and the cost of tobacco-attributable mortality – Workplace costs and the cost of tobacco-attributable mortality represent the monetized value of lost time, productive capacity, or quality of life as a result of tobacco-attributable diseases. The cost of tobacco-attributable mortality accrues when tobacco use causes mortality, eliminating the unique economic and social contributions that an individual would have provided in their remaining years of life. Workplace costs accrue when tobacco use results in productivity losses. Compared to non-tobacco users, individuals who use tobacco are more likely to miss days of work (absenteeism) and to be less productive at work due tobacco-related illnesses (presenteeism).

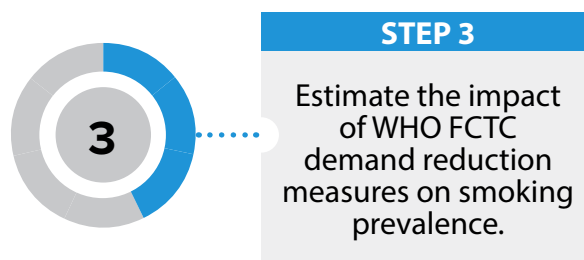
- *The economic cost of tobacco-attributable mortality.* Tobacco-attributable mortality was monetized using a “value of a statistical life” (VSL) measure. VSL is a measure of individuals’ willingness to pay for small changes in the risk of death and it is commonly used in economic evaluations of health programmes and policies to monetize health outcomes [80]. Few studies have assessed VSL in low- and middle-income countries [81]. We extrapolated a country-specific estimate of VSL following guidance from the Reference Case Guidelines for Benefit-cost analysis in Global Health and Development [80], estimating the value of one additional year of life for Mongolia at MNT 12.5 million (value of a statistical life year (VSLY)). 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 future year of life is multiplied by VSLY to calculate the cost of tobacco-attributable mortality.
- *Productivity costs.* Productivity costs consist of costs due to absenteeism and presenteeism and are counted only among employed cigarette smokers. The model uses estimates from academic literature on the number of extra working days missed due to active smoking (2.9 days per year) [82]. Presenteeism losses are obtained similarly, under research that shows that smokers in China, the United States, and five European countries experience about 22% more impairment at work because of health problems compared to never-smokers—losses equivalent to about 7.5 days of work [83]. The number of employed smokers is multiplied by days of work missed due to absenteeism or presenteeism by the average daily country wage to obtain estimates of losses.

A1.3 Component two: policy/intervention scenarios

This component estimates the effects of WHO FCTC measures on mortality and morbidity, as well as on total economic costs (direct and indirect) associated with tobacco use.

A static model using a population attributable fraction (PAF) approach was used to estimate the total impact of the tobacco control measures. In the model, aside from smoking prevalence, variables do not change throughout the 15-year time horizon. 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 [84], [85].

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



Selection of key WHO FCTC measures modeled within the investment case align with the [Global Strategy to Accelerate Tobacco Control](#) [86] 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, priority is given to enabling action to accelerate WHO FCTC implementation, including effective forms of technical and financial assistance to support Parties in the identified priority action areas. This includes Parties giving priority to, among other things, the implementation of price and tax measures (WHO FCTC Article 6) and time-bound measures of the Convention. The time-bound measures include creating smoke-free public places and workplaces (WHO FCTC Article 8), prominent health warnings on tobacco packaging (WHO FCTC Article 11) and comprehensive bans on tobacco advertising, promotion, and sponsorship (TAPS) (WHO FCTC Article 13).

In addition, given the importance of awareness in behaviour change and shaping cultural norms, the investment cases include promoting and strengthening public awareness of tobacco control issues, including the health risks of tobacco use and tobacco smoke, addiction,

and the benefits of cessation (WHO FCTC Article 12). Effect sizes for the WHO FCTC demand reduction measures are obtained from the literature. The impact of enforcing smoke-free air laws, implementing plain packaging, intensifying advertising bans, and promoting and strengthening public awareness of tobacco control issues are derived from Levy et al. (2018) [65] and Chipty (2016) [87], as adapted within the Tobacco Use Brief of Appendix 3 of the WHO Global Action Plan for the Prevention and Control of Non-communicable Diseases 2013-2020 [88], and adjusted based on assessments of Mongolia's baseline rates of implementation. The impact of basic evidence-based tobacco cessation in the form of brief advice to quit offered to tobacco users by health-care professions in primary care settings is from Levy et al. 2010 [89].

Except for taxes—the impact of which is dependent on the timing of increases in tax rates (see below)—and the brief advice intervention—the impact of which is guided by rates of training for primary health-care providers (see also below)—the full impact of the demand reduction policy measures is phased in over a five-year period. The phase-in period follows WHO assumptions [90] 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.

Tobacco taxes. The impact of cigarette tax increases on revenue and cigarette use prevalence was estimated using an Excel-based tool developed to analyse the impact of tax increases on a fixed population cohort. The tool is populated with data, including on current cigarette smoking prevalence, the tax structure and applied tax rates, cigarette prices, demand elasticities, and inflation and income projections (see **Table A1**).

Table A1: Key parameters used in the tax revenue analysis

Parameter name	Value	Source
Price elasticity of demand	-0.49	Ho et al (2018). Raising cigarette excise tax to reduce consumption in low-and middle-income countries of the Asia-Pacific region: a simulation of the anticipated health and taxation revenues impacts [91]
Prevalence elasticity of demand	-0.24	Goodchild et al (2016). Modelling the impact of raising tobacco taxes on public health and finance [92] Assumption – half of price elasticity
Income price elasticity of demand	0.32	Nargis et al (2021). Price, Income, and Affordability as the Determinants of Tobacco Consumption: A Practitioner's Guide to Tobacco Taxation [68]
Income prevalence elasticity of demand	0.16	Assumption – half of income price elasticity
Projected real income growth rate*	6.0%	International Monetary Fund (2020). Real GDP Growth – Annual percent change [69]
* Projected real income growth is used as a proxy for wage growth. The International Monetary Fund projects [69] real GDP growth at an average of 6.0 percent annually through 2025.		

The investment case analysis examines a tax increase scenario in which Mongolia chooses to enact strong tax increases. In the hypothetical scenario, over five years Mongolia gradually raises the specific excise tax in real terms from its current level MNT 836 to MNT 1,816 in 2027. In the scenario, the price net of taxes remains static (full pass through of the tax increase). **Table A2** breaks down cigarette pack price components from 2023 to 2027 under the described scenario. For the main investment case analysis, additional specific excise taxes triggering real price increases of an average of 8 percent annually are modeled from 2027 to 2037, bringing the total tax share to 84 percent by the end of the analysis and the excise tax share to 75 percent.

Table A2: Projected cigarette pack price in the tax increase scenario, 2023-2027 (GHC, in real terms)

Price component	2023	2024	2025	2026	2027
Price net of taxes	1,255	1,255	1,255	1,255	1,255
Specific excise	836	785	1,178	1,520	1,816
Ad valorem	0	0	0	0	0
Value added tax	209	204	243	277	307
Other taxes	0.00	0.00	0.00	0.00	0.00
Final consumer price *	2,300	2,244	2,676	3,052	3,378
* Figures subject to rounding.					

The impact of tax increases on revenue and cigarette use prevalence is dependent on prevailing elasticities: the extent to which individuals change use of a product (e.g., decrease consumption or quit) because of changes in the price of a tobacco product. Changes are calculated following Joosens and colleague's (2009) [93], who use a log-log function to ensure large price increases do not result in implausible reductions in consumption or prevalence.

Below, **Equation A1** provides an example of calculations to ascertain the impact of a change in price on smoking prevalence, considering changes in income.

Equation A1: The impact of changes in price on smoking prevalence

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

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

There are several limitations to the tax analysis. First, the tax tool assumes that the price and tax structure of the most sold brand of cigarettes is representative of the market, and it does not incorporate other market segments (high or low-end cigarettes). More detailed models that account for switching between segments or between products (e.g., movement to hand-rolled cigarettes) would capture nuance helpful to framing tobacco tax policy and estimating impact. Second, the analysis assumes a full pass through the tax increases. This assumption reflects a “middle ground” approach, but the tobacco industry may increase or decrease prices in reaction to the price increase. Third, we did not obtain Mongolia-specific estimates of price and income elasticities.

Brief advice to quit tobacco. We calculate the effect of scaling up the provision of brief advice to quit tobacco use at the primary care level. First, we calculate the baseline population quit rate (PQR, the percent of smokers who quit annually) drawing on previously published methods by Levy and colleagues (2010) [89]. The PQR is calculated (see **Equation A2**) using three parameters: quit attempts; treatment utilization rates (i.e. counselling, pharmaceutical therapy); and treatment effectiveness.

Equation A2: Calculating Population Quit Rate, from Levy et al (2010) [89]

$$PQR = QA * \sum_{i=1, \dots, 4} (TxUse_i * TxEff_i)$$

Where:

PQR = Population quit rate

QA = % of smokers who make a quit attempt at least once annually

TxUse = the percent of those who make a quit attempt who use treatment category i

TxEff = The percent of those who use a given treatment who succeed in quitting annually (Treatment efficacy)

i = is one of four treatment categories: 1) no evidence-based treatment; 2) counselling; 3) pharmacological treatment (e.g. nicotine replacement therapy), or 4) both counselling and pharmacological therapy.

Again following Levy et al (2010), “to account for the effect of multiple quit attempts among those who fail at their first attempt, it was assumed that half of those that make at least one quit attempt per year go on to make a second attempt, and half of those [who make a second attempt] make a third, and so on,” and that treatment effectiveness does not change based on whether it is a persons’ first quit attempt or a succeeding one.

After establishing baseline PQR, we calculated how the population quit rate would change if provision of brief advice to quit at the primary care level became more prevalent. In this “intervention scenario”, over the 15-year time horizon of the analysis, half of all primary health care providers are trained to provide brief advice to quit to adult tobacco users—a value selected based on evidence of the current intervention coverage gap; on average, in low- and middle-income countries less than half (47.8 percent) of adult smokers who visit a health provider are advised to quit. Once trained, it is assumed that the provider administers the brief advice when they encounter a patient who uses tobacco.

Taking into account the number of primary health-care providers in the country, the patient panel size per provider, adult smoking rates, and the percent of adult smokers who present within the health system for at least one primary care visit per year, in each year of the analysis we calculate the number of adult tobacco users who would encounter a newly trained health provider and receive the brief intervention—which increases the likelihood that an individual makes a quit attempt by 60 percent over baseline levels [89]. With increases in population quit attempts driven by the provision of brief advice, we recalculate PQR to estimate the number of smokers who quit as a result of the intervention. Data used to inform these calculations are shown in **Table A3**.

Table A3: Provision of brief advice – key parameters to calculate intervention impact

Parameter name	Value	Source
Population quit rate (PQR)		
Annual quit attempt rate (QA)	41%	Average values from the Global Adult Survey (GATS) of low- and middle-income countries (LMICs) conducted between 2009 to 2018*
Increase (%) in QA as a result of receiving brief advice	60%	Levy et al (2010). Modelling the impact of smoking-cessation treatment policies on quit rates [89]
Treatment use (Tx Use)		
No evidence-based treatment	81%	Average values from GATS of LMICs conducted between 2009 to 2018*
Pharmaceutical assistance	7%	Average values from GATS of LMICs conducted between 2009 to 2018*
Counselling	11%	Average values from GATS of LMICs conducted between 2009 to 2018*

Both pharmaceutical assistance and counselling	1%	Average values from GATS of LMICs conducted between 2009 to 2018*
Treatment effectiveness		
No evidence-based treatment	7%	Levy et al (2010). Modelling the impact of smoking-cessation treatment policies on quit rates [91]
Pharmaceutical assistance	15%	Abrams et al (2010). Boosting population quits through evidence-based cessation treatment and policy [96]**
Counselling	12%	Abrams et al (2010). Boosting population quits through evidence-based cessation treatment and policy [96]**
Both pharmaceutical assistance and counselling	22%	Abrams et al (2010). Boosting population quits through evidence-based cessation treatment and policy [96]**
% of adult smokers who visit primary care clinic annually	38%	Average values from GATS of LMICs conducted between 2009 to 2018*
% of smokers who relapse after successfully quitting	60%	WHO (2017). Tobacco Interventions for the Appendix 3 of the Global Action Plan for Non Communicable Disease [90]. García-Rodríguez et al (2013). Probability and predictors of relapse to smoking: Results of the National Epidemiologic Survey on Alcohol and Related Condition [97]
Number of primary care health providers	73,025	WHO (2021). Global Health Observatory [98]***
Annual patient panel size per health provider (# of patients)	550	Altschuler et al (2012). Estimating a Reasonable Patient Panel Size for Primary Care Physicians With Team-Based Task Delegation [99]****

* Analysts pulled data from GATS conducted between 2009 to 2018 and averaged values from low- and middle-income countries.

** Compared to quit attempts that are made with no assistance from any form of evidence-based therapy, pharmaceutical assistance is 100 percent more effective, counselling 60 percent more effective, and combined therapy 200 percent more effective

*** Sum of two indicators in the WHO Global Health Observatory (GHO) for the latest year for which information was available: 1) number of general physicians and 2) number of nursing personnel. Given that specific estimates for primary care nursing personnel are not given from the source, we assume the proportion of primary care nurses is the same as the proportion of generalist doctors to all doctors as given in the GHO.

**** Study results show that a primary care health provider working under a nondelegated model of care can reasonably care for a panel of 983 patients in a year and that in a conservative scenario where non-physician providers assume some responsibility for care patient panel sizes can expand to 1387 patients. In most countries, a nondelegated model of care is the status quo. However, in this analysis, nurses are trained to offer brief advice and assume some responsibility for administering it. Therefore a patient panel size is likely to be somewhere in the range of 983 to 1,387 patients. We assume a panel size of 1,100 and that an individual practitioner on the team covers half of the patients (550) per year.

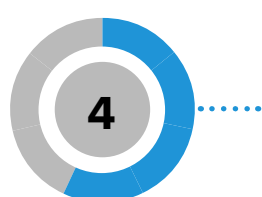
Summary: the impact of tobacco demand reduction measures. The impact sizes of all policy measures examined in the investment case are displayed in **Table A4**. Additional information on their derivation can be found in the *Technical Appendix*.¹⁷

Table A4: Impact size: Relative reduction in the prevalence of current smoking by tobacco

¹⁷ Available upon request.

control policy/intervention, over a period of five (2023-2027) and 15 years (2023-2037)

WHO FCTC policy actions	Relative reduction in the prevalence of current smoking	
	First five years (2023-2027)	Over 15 years (2023-2037)
Tobacco control package* (all policies/interventions implemented simultaneously)	30.0%	50.0%
Increase cigarette taxation (WHO FCTC Article 6)	7.32%	16.09%
Create smoke-free public places and workplaces (WHO FCTC Article 8)	9.6%	16.0%
Implement plain packaging of tobacco products (WHO FCTC Guidelines for Implementation of Article 11 and WHO FCTC Guidelines for Implementation of Article 13)	2.4%	4.0%
Promote and strengthen public awareness of tobacco control issues (WHO FCTC Article 12)	9.12%	15.20%
Enact and enforce a comprehensive TAPS ban (WHO FCTC Article 13)	4.80%	8.00%
Promote tobacco cessation and treatment for dependence by training health professionals to provide brief advice to quit tobacco (WHO FCTC Article 14)	0.92%	4.09%
* 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" [65].		

**STEP 4**

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

To analyse 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 2037 (end of the analysis), no change occurs from the tobacco control provisions that are currently in place. In the "intervention scenario", Mongolia 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 Mongolia can achieve by taking targeted actions to reduce tobacco use.

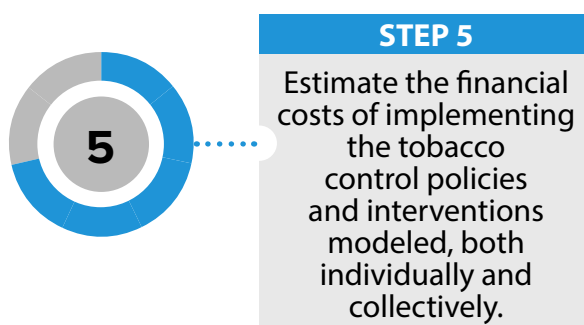
The marginal effects of the policies are calculated using the status quo scenario as the

comparison group. To calculate marginal effects, the model subtracts the outcome (risk factor attributable deaths, health-care 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 health-care 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.



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 [90]. The Costing 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 Costing Tool estimates the cost of surveillance, human resources—for programme management, transportation, advocacy, and enacting and enforcing legislation—trainings and meetings, mass media, supplies and equipment, and other components. Within the Costing Tool, costs accrue differently during four distinct implementation phases: planning (year 1), development (year 2); partial implementation (years 3-5); and full implementation (year 6 and onward).

Across these categories, the Costing Tool contains default costs from 2011, which are sourced from the WHO CHOICE costing study. Following Shang and colleagues, the Costing Tool is updated to reflect 2020 costs by updating several parameters: the US\$ to local currency unit exchange rate (2020); purchasing power parity (PPP) exchange rate (2020); GDP per capita (US\$, 2020); GDP per capita purchasing power parity (PPP, 2020); population (total, and share of the population age 15+, 2020); labour force participation rate (2020); gas per liter; and government spending on health as a percent of total health spending (2019) [97]. Unless government or other in-country parameters are received, data are 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.

To cost the scale up of the provision of brief advice to quit tobacco use, the analysis adds to the programmatic costs embedded in the WHO Costing Tool by including costs to train health providers and the direct costs of the primary care visits in which the brief advice is administered. Over the 15-year time horizon of the analysis, half of all primary care health providers are trained to administer brief advice to quit tobacco.¹⁸ Based on WHO's training package for treating tobacco dependence in primary care [99], we assume that training sessions last 2.5 days, are conducted with a maximum of 30 participants, and are led by a team of two facilitators. We further assume that the training occurs in person in a rented facility space. Costs of training include those to rent the facility,¹⁹ pay facilitators, and provide per diems to facilitators and attendees, and we also assume that trainees (doctors and nurses) are compensated for their time at their wage rate.²⁰ Once trained, providers are assumed to provide brief advice if they encounter a patient who smokes. The cost of providing brief advice during primary care visits is based on modeled, country-specific estimates from WHO-CHOICE of the cost of primary care outpatient visits [101]. The derivation of these estimates is detailed elsewhere [102], but in overview, the estimates reflected the "hotel cost" of a 10-minute visit²¹ to a health facility with beds. We updated the estimates to 2020 local currency units, using

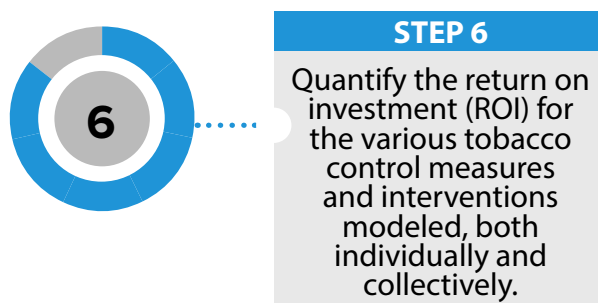
18 The analysis assumes a 10 percent of health workers turn over annually [98].

19 Rental costs per square foot are obtained from the WHO Costing Tool with the room size estimated is based on square feet per person estimates for collaboration rooms [100].

20 Compensation costs for trainers, per diem estimates, and provider salaries are obtained from the WHO Costing Tool.

21 The analysis assumes that the mean duration of a clinic visit is 10-minutes, following guidance from the WHO NCD Costing Tool.

2010 PPP conversion factors and local consumer price indices [103]. For the purposes of the investment case, administration of the 5A's (Ask, Advise, Assess, Assist and Arrange) brief intervention is assumed to take 10 minutes [105]. Following WHO CHOICE methodology, we estimate the cost of those extra 10 minutes as an extra 21 percent of the original cost of the primary care visit.



The 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 six tobacco control policy actions modeled, and for the six interventions together as a package. Estimates from Steps 3, 4 and 5 were used to calculate ROIs at 5- and 15-year intervals.

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

A1.4 Summary of WHO FCTC demand reduction measure status

Figure 2 in the main text is based on data from the *WHO Report on the Global Tobacco Epidemic, 2021* [38]. In the Figure, the level-of-implementation categories of “no/little implementation”, “partial implementation”, “moderate implementation”, and “high-level implementation” are mapped to the descriptions in **Table A5**, as specified and further detailed in Technical Note I of the WHO report (see page 119).

Investment case analysts assigned scores between 0 to 3 for each demand reduction measure, depending on the level of implementation. For four measures—graphic warning labels, plain packaging, mass media campaigns, and tobacco cessation—we assigned whole number scores (i.e. 0, 1, 2, or 3) that mapped to the four levels of implementation described above and detailed in **Table A5**. For increases in cigarette taxation, smoke-free public places and workplaces, and TAPs bans, we adjusted the level-of-implementation score creating a

decimal value as follows:

- For 1) smoke-free public places and workplaces and 2) TAPS bans, we adjusted the score to account for reported levels of compliance in the *WHO Report on the Global Tobacco Epidemic* (Compliance Score). Following previously published assumptions by Levy and colleagues (2013), we assumed that respectively 25 percent and 50 percent of the effect of these measures depends on levels of compliance [105]. Thus, for a country with “moderate implementation” of TAPS bans but a compliance score (as detailed in the GTCR) of 5 out of 10, we calculated the score as follows: $\text{Measure Score} - (0.5 * \text{Compliance Score} / 10) = 2 - (0.5 * (5 / 10)) = 1.75$. For countries that did not report a compliance score we assumed the average of compliance scores worldwide.
- For 3) cigarette taxation, all countries in which the total tax share equalled 75 percent or above received a score of 3. All countries below that mark were assigned a score as follows: $3 * (\text{Total tax share} / 0.75)$. Thus a country with a total tax share of 35 percent received a score of 1.4 ($3 * (.35 / .75)$).

Ultimately, most measures are weighted equally (counting as 3 points if fully implemented) except for plain packaging (counting as 1 point if fully implemented). Analysts selected 1 point for plain packaging because: 1) Unlike for the other measures, plain packaging operates on a 0,1 scale—either the measure is in place or it is not (i.e. there are no gradations of the policy—there is little benefit to mandating that half of the package is “plain” while the rest is open to colouring or other attributes); 2) In the GTCR plain packaging is scored as a “star” on top of the graphic warning labels acting as a supportive add on to other labelling requirements.

The total score a country can receive for implementation of the key demand reduction measures (i.e. composite tobacco control score) is 19. A country with a composite tobacco control score of 12/19 may be said to have implemented about 63 percent of the WHO FCTC key demand reduction measures agenda.

Table A5: Definition of WHO FCTC implementation status in Figure 2 (main text)

WHO FCTC demand reduction measure	No/little implementation	Partial implementation	Moderate implementation	High-level implementation
Increase cigarette taxation to reduce the affordability of tobacco products (WHO FCTC Article 6)	0% of retail price is tax, or no data is reported.	≥ 25% and <50% of retail price is tax.	≥ 50% and <75% of retail price is tax.	≥ 75% of retail price is tax.
Create smoke-free public places and workplaces to protect people from the harms of tobacco smoke (WHO FCTC Article 8)	Complete absence of ban, or up to two public places completely smoke-free, or no data is reported.	Three to five public places completely smoke-free.	Six to seven public places completely smoke-free.	All public places completely smoke-free (or at least 90% of the population covered by complete subnational smoke-free legislation).
Require tobacco packaging to carry graphic health warnings describing the harmful effects of tobacco use (WHO FCTC Article 11)	No warnings or small warnings, or data not reported.	Medium size warnings missing some appropriate characteristics or large warnings missing many appropriate characteristics.	Medium size warnings with all appropriate characteristics or large warnings missing some appropriate characteristics.	Large warnings with all appropriate characteristics.
Implement plain packaging of tobacco products (WHO FCTC Guidelines for Implementation of Article 11 and WHO FCTC Guidelines for Implementation of Article 13)	Plain packaging is not mandated.	-	-	Plain packaging is mandated.

WHO FCTC demand reduction measure	No/little implementation	Partial implementation	Moderate implementation	High-level implementation
Promote and strengthen public awareness about tobacco control issues and the addictive nature and harms of tobacco use through mass media information campaigns (WHO FCTC Article 12)	No national campaign conducted between July 2018 and June 2020 with a duration of at least 3 weeks, or no data is reported.	National campaign conducted with one to four appropriate characteristics.	National campaign conducted with five to six appropriate characteristics.	National campaign conducted with at least seven appropriate characteristics including airing on television and/or radio.
Enact and enforce a comprehensive ban on all forms of tobacco advertising, promotion, and sponsorship – TAPS (WHO FCTC Article 13)	Complete absence of ban, or ban that does not cover national television, radio and print media.	Ban on national television, radio and print media only.	Ban on national television, radio and print media as well as on some but not all other forms of direct and/or indirect advertising.	Ban on all forms of direct and indirect advertising (or at least 90% of the population covered by subnational legislation completely banning tobacco advertising, promotion and sponsorship).
Develop infrastructure to support tobacco cessation and treatment of tobacco dependence (WHO FCTC Article 14)	None, or no data are reported.	Nicotine Replacement Therapy (NRT) and/or some cessation services (neither cost-covered).	NRT and/or some cessation services (at least one of which is cost-covered).	National quit line, and both NRT and cessation services routinely cost-covered.

Source: Information in this table is based on the *WHO Report on the Tobacco Epidemic, 2021* [4].

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