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The Case for Investing in WHO FCTC Implementation in Georgia

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WHO FRAMEWORK CONVENTION ON TOBACCO CONTROL
SECRETARIAT

The Case for Investing in WHO FCTC Implementation in Georgia

National Center for Disease Control & Public Health of Georgia
United Nations Development Programme
RTI International
WHO FCTC Secretariat
World Health Organization

Report
December 2018

Funded by UK Government

11,400

Georgian citizens die every year due to **tobacco-related diseases**.

2,100

of those deaths are due to **secondhand smoking**.

Every year...

Tobacco costs Georgia

GEL 824.9 million

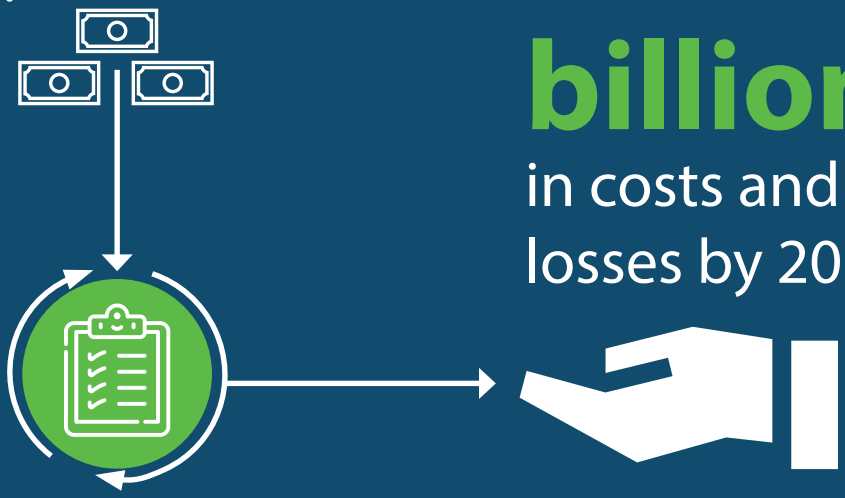
equivalent to

2.43% of GDP

Investments in

four FCTC measures

now...



will save

53,109 lives

and avert

GEL 3.6 billion

in costs and economic losses by 2033.

For every **GEL 1** invested in four FCTC interventions now **by 2023** Georgia receives **GEL 161** in averted costs and economic losses and **GEL 357 by 2033.**

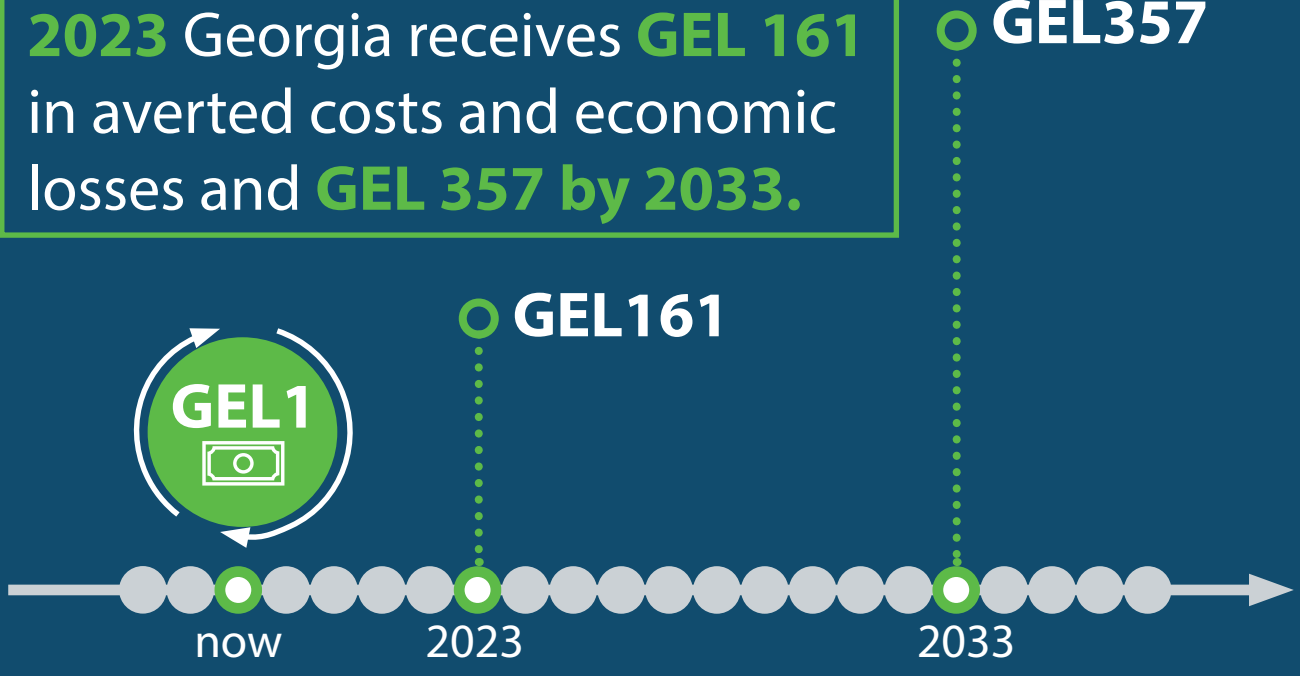


Table of Contents

List of Figures

Acknowledgements

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Executive Summary

This report presents the findings of the case for investing in key tobacco control measures in Georgia. It measures the costs and benefits – in health and economic terms – of implementation of four priority tobacco control measures, in line with the WHO FCTC and according the stated priorities of the Government of Georgia (Government of Georgia). These four priority measures are: (i) increased tobacco taxes, (ii) a complete ban on indoor smoking in public places, (iii) labeling and packaging and (iv) bans on tobacco advertising, sponsorship and promotion.

The results indicate that addressing tobacco use in Georgia will lead to significant returns – in both economic losses averted and lives saved.

- **Each year, tobacco costs the Georgian economy GEL 824.9 million, equivalent to 2.43% of Georgia's GDP in 2016.**[1] These costs include a) direct healthcare expenditures totaling GEL 327.3 million, and b) economic losses due to premature mortality, disability, and workplace costs totaling GEL 497.5 million.[2]

- **Tobacco takes a tremendous toll, causing the loss of 188,936 years of life every year.** These life years lost also cause lost years of economic productivity.

- **Economic losses due to premature mortality, disability, and workplace costs are projected to increase to a cumulative GEL 2.5 billion after 5 years, and GEL 7.5 billion after 15 years.** Economic losses – not healthcare costs – make up more than half (60%) of the total tobacco burden, indicating that all sectors are affected and have an inherent interest in investing and engaging in tobacco control.

- **If current trends in tobacco use in Georgia continue unabated, cumulative health-care expenditure due to tobacco-related disease will reach GEL 4.9 billion in 15 years.** This will hinder progress in achieving more efficient healthcare spending and reduced out-of-pocket health spending.

1 The model is using 2016 data estimates for GDP and assumed an annual GDP growth rate of 3.5%.
2 Note: there are no variance on workplace costs

The investment case findings indicate that fully implementing and enforcing the selected WHO FCTC priority interventions is a highly cost-effective way to reduce the burden of tobacco.

- **If Georgia fully implements and enforces all four interventions together, the country can avoid GEL 3.6 billion in cumulative health-care expenditures and economic losses over 15 years.** Of this, GEL 2.2 billion in economic productivity losses would be avoided, spurring economic growth and development.

- **Implementation and enforcement of the four tobacco control measures will help avert GEL 1.4 billion in direct healthcare expenditures over 15 years.** Of this 1.4 billion, GEL 800 million will be saved in out-of-pocket health-care costs, assisting the Government of Georgia in achieving goals under 'Georgia 2020'. Moreover, for every GEL 1 invested, the country can expect GEL 139 in averted health-care expenditures over a 15-year period.

- **The benefits of the four selected WHO FCTC interventions far outweigh their costs over 5- and 15-year periods with a return-on-investment (ROI) of GEL 357 for every GEL 1 invested.** Of the four interventions, raising cigarette taxes is the most cost-effective, allowing Georgia to avert over GEL 2.2 billion in economic losses and health-care expenditures over a period of 15 years with an ROI of GEL 1 to GEL 221.

- **If implemented together, the four tobacco control interventions will save a minimum of 53,000 lives over 15 years at a cost of GEL 1000 for 5.3 lives saved.** Of the four interventions, raising cigarette taxes is the most cost-effective saving 13 lives at a cost of GEL 1000. Advertising bans are second most cost effective, labeling and packaging third, and smoke-free policies cost the most per life saved.

Georgia currently enjoys significant political support for strengthening tobacco control measures, thanks to national development targets and the aim of economic integration with the European Union. Georgia has strong advocates for tobacco control and has taken advanced steps towards implementing the WHO FCTC by passing a new tobacco control law in 2017. Policy makers can capitalize on current momentum and use the investment case results to raise awareness and advocate for full implementation and enforcement of legislated tobacco control measures.

Introduction

Smoking is the second leading risk factor for death globally, killing more than 7 million people every year. Prevalence of tobacco use in Georgia is amongst the highest in the European region, as 33.3% of the adult population are current smokers (57% of men and 7 % women) [1]. Every year in Georgia tobacco use causes approximately 11,418 deaths, of which 2,093 result from exposure to second-hand smoke. The increasing prevalence of tobacco use [2] is not just a concern for the health system, it is also a major obstacle for Georgia's attainment of the 2030 Sustainable Development Agenda [3].

Georgia became a State Party to the WHO Framework Convention on Tobacco Control (WHO FCTC) in 2006 [4], [5] and has since made steady progress in implementing obligations under the Convention. In 2017, the Parliament of Georgia adopted a new comprehensive tobacco control package [6]. Among other provisions, the law contains provisions for three FCTC demand reduction measures.[3] Tobacco taxation rates are determined separately through the Georgian Tax Code. These four provisions were selected through consultations with the Government of Georgia for analysis under the current investment case:

1. increasing tobacco taxation to reduce the affordability of tobacco products (FCTC Article 6);
2. banning smoking in indoor public places (FCTC Article 8);
3. implementing WHO FCTC-recommended standards on labeling and packaging (FCTC Article 11); and
4. enforcing a comprehensive ban on tobacco advertising sponsorship and promotion (FCTC Article 13).

By legislating and funding these important tobacco control measures, Georgia is already ahead of other countries in curbing the tobacco epidemic. However, success is not guaranteed, as the impact from these measures will depend on concerted and coordinated efforts from multiple sectors of the government and cooperation from the private sector. For successful implementation of bans on indoor-smoking, a change in acceptable norms is required across wide segments of society, giving true meaning to the 'whole-of-society' approach.

In addition, while the new law enters into force in May 2018, plain packaging requirements do not go into effect until 2022, and the indoor smoking ban will be expanded to hotels starting only in 2020 [6].

3 The law also mandates provisions to counter tobacco industry interference (Art. 5.3), and strengthens regulations on the production, trade and sales of any tobacco products defined as electronic cigarettes, chewing tobacco or shisha.

Credit: UNDP/Daro Sulakauri

This may create barriers to full and effective implementation, for example by allowing the tobacco industry years to counter, weaken or further delay these provisions. Further, with each year passed, Georgia will forego substantial economic benefits, as evidenced by the investment case findings. **In light of these considerations, the purpose of the investment case is to furnish strong economic arguments for policy makers and tobacco control advocates in Georgia to:**

1. Raise awareness among the public and government of the true costs of tobacco and the benefits of tobacco control;
2. advocate for multisectoral action to fully implement and enforce Georgia's 2017 tobacco control law, while protecting it from tobacco industry interference;
3. help ensure adequate funding and resourcing of tobacco control measures and infrastructure;
4. accelerate implementation of all provisions under the new tobacco control law;
5. advocate for additional increases in tobacco taxes which is the most cost-effective for the four tobacco control measures examined here; and
6. drive further progress in implementing the WHO FCTC.

This summary report first discusses the institutional, political and economic factors in Georgia that are relevant to tobacco control. After providing an overview of the methodology for the economic analysis, the report highlights main findings from the analysis, discussing findings on the burden of tobacco and on the estimated effects of each of the four WHO FCTC tobacco control measures which were modeled. The report then touches on how the Government of Georgia may counter misinformation propagated by the tobacco industry and it concludes with recommendations for the Government and tobacco control advocates on next steps.

The Government is encouraged to identify within the model findings that it considers salient and relevant to furthering its tobacco control and development goals, and to use those findings to develop arguments and targeted messaging to the public and specific stakeholders.

Political and Institutional Context

Several factors currently support political will in Georgia to strengthen tobacco control measures. First and foremost, Georgia has strong advocates for tobacco control, including the Ministry of Labour, Health and Social Affairs, National Center for Disease Control and Public Health, Ministry of Education and Science, Ministry of Sports and Youth Affairs, civil society (Tobacco Control Alliance comprised of 15 NGOs), academia and the UN Country Team. Members of Parliament, such as those members serving on committees of Health and Social Welfare, Environment and Education, are also strong and key supporters of comprehensive tobacco control.

Many of these allies are currently represented on Georgia's National Tobacco Control Committee. First established in 2014, the committee is chaired by the Prime Minister and ten ministries are represented [3], [5]. The committee successfully drafted the new 2017 package of amendments to the National Tobacco Control Law but continuous and effective coordination is crucial to ensuring successful implementation of the provisions under the new law. This is true for all provisions, but perhaps especially so for enforcement of 100% smoking bans in public places.

According to the Administrative Code, the current authority responsible for monitoring compliance and for prosecuting violators is the police (the Ministry of Internal Affairs and LEPL Revenue Services). Given the administrative complexities of fully enforcing indoor smoking bans however, coordination may include the Food Safety Unit at the National Food Agency, for instance, where inspectors can be trained and incentivized to coordinate with the police in enforcing tobacco bans.

A second, and leading factor in maintaining support for strengthened tobacco control, is that the Government of Georgia is committed to the 2030 Sustainable Development Agenda and to accelerating progress by nationalizing the SDGs. Long-term inclusive economic growth and improving the welfare of the population have been identified as the major objective in Georgia 2020, the Government strategy for social-economic development.

The ***Georgia 2020*** strategy identifies three main challenges: 1) ***weak competitiveness of the private sector***, 2) ***weak development of human capital*** and 3) ***limited access to financing*** [7]. Full implementation of the new tobacco control legislation will contribute to improvements in all three dimensions (Fig.1). Perhaps most promising, comprehensive tobacco control measures will result in lower public expenditures, higher economic productivity and increased government revenue that can be re-invested in public goods such as health-care, catalyzing sustainable development and economic growth (last row in Fig.1).

Fig. 1: Synergies Between Tobacco Control Measures and National Sustainable Development Challenges

Challenge [7]	National Strategy to Address Challenge	How Tobacco Control Measures Could Contribute
Private Sector Competitiveness	1. Improving the investment and business environment; 2. Supporting innovation and technologies; 3. Facilitating the growth of exports; 4. Developing infrastructure and fully realizing the country's transit potential.	Help meet preconditions of the EU-Association Agreement to allow entry into the Deep and Comprehensive Free Trade Area (Article 1 (h)), thereby strengthening Georgia's export potential.
Development of Human Capital	1. Developing the country's workforce that meets labour market requirements; 2. Tightening the social security net; 3. Ensuring the accessible and quality healthcare	Minimize costs of smoking in the workplace; Minimize productivity losses due to tobacco-attributable premature mortality and disability; Reduce healthcare expenditures.
Access to Finance	1. Mobilizing of investments; 2. Developing financial intermediation.	Reduce healthcare costs and economic; losses while raising additional revenue to fund national policy priorities.

Georgia 2020 thus provides the rationale for Government action in tobacco control: strong tobacco control is an indispensable and highly effective way to deliver on the Government's commitments to the citizens of Georgia. In addition, the Georgia-EU Association Agreement (hereafter referred to as the 'Association Agreement') provides political momentum and a policy window for Georgia to implement the WHO FCTC and raise taxes on tobacco products by 2020 [8].

Signed in 2013 and entered into force in 2016, the Association Agreement allows for political association and gradual economic integration with the EU through the Deep and Comprehensive Free Trade Area (Article 1 (h)). However, the Association Agreement sets preconditions on Parties, including conditions related to regulations on tobacco products. Article 356 of the Association Agreement explicitly mentions cooperation in improving WHO FCTC implementation as a priority in cooperation in public health. Article 71 calls on parties to cooperate in preventing and combating illicit trade of tobacco products, while Article 283 requires parties to harmonize tobacco taxation with the EU and in line with the WHO FCTC (Box 1).

Box 1: Tobacco Control in the Georgia-EU Association Agreement

Article 356: *The Parties agree to develop their cooperation in the field of public health […] in particular:*

(c) prevention and control of non-communicable diseases, mainly through the exchange of information and best practices, promoting healthy lifestyles, physical activity, and addressing major health determinants, such as nutrition, addiction to alcohol, drugs and tobacco;
(f) effective implementation of international health agreements to which the Parties are party, in particular the International Health Regulations and the Framework Convention on Tobacco Control.

Article 71: *The Parties shall strengthen cooperation in the area of customs […] inter alia:*

(e) cooperate in preventing and combating illicit cross-border traffic in goods, including in tobacco products;

Article 283: *The Parties shall develop their cooperation and harmonize policies in counteracting and fighting fraud and smuggling of excisable products. This cooperation will include, inter alia, the gradual approximation of excise rates on tobacco products, as far as possible, taking into account the constraints of the regional context, and in line with the World Health Organization Framework Convention on Tobacco Control. To that end, the Parties will look to strengthen their cooperation within the regional context.*

EU directives provide further details on the above obligations and set the timelines for meeting these obligations. Within six years of entry into force of the Association Agreement – by 2022 – Georgia is obliged to implement laws, regulations and administrative provisions concerning the manufacture, presentation and sale of tobacco products (applicable for WHO FCTC Art. 11 and according to the Tobacco Products Directive 2001/37/EC of the European Parliament and of the Council).

Laws, regulations and administrative provisions related to the advertising and sponsorship of tobacco products (applicable for WHO FCTC Art. 13) are to be implemented within four years after the entry into force of the Agreement (2020). Directive 2011/64/EU on the structure and rates of excise duty applied on manufactured tobacco, holds the country accountable to both counter illicit trade of tobacco products and to bring tobacco tax rates in line with the WHO FCTC, within five years of the Agreement's entry into force (2021).

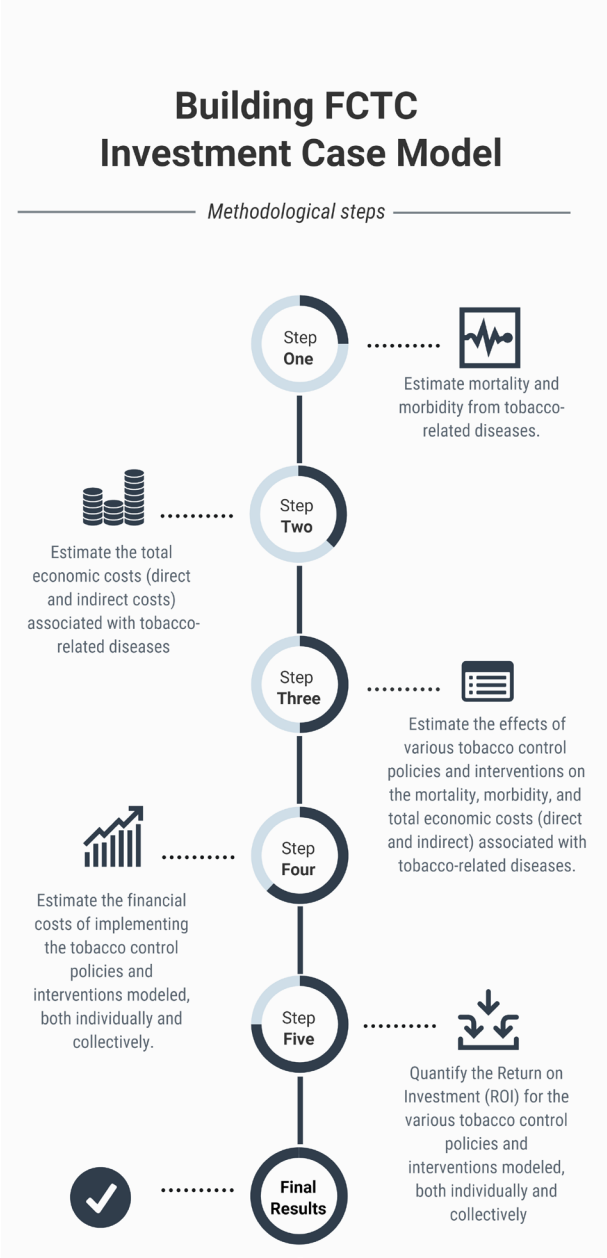
Methodology

In collaboration with the National Center for Disease Control (NCDC) and the National Statistics Department, the FCTC Investment Case team collected national data and, for additional country-specific indicators, used datasets from the Global Burden of Disease (GBD) platform. Developed by RTI, the FCTC Investment Case examines the impact of four tobacco control interventions on health and the Georgian economy. The interventions align closely with WHO FCTC recommended demand-reduction measures, as well as the recent amendments to Georgia's tobacco control law (Fig.1). Returns on Investment (ROI) for those four policies/ interventions was estimated individually and collectively, using financial costs of implementing the policy/intervention measures. Since the GBD provides a range for all metrics including lower and upper bounds, we estimated all calculations[4] with a range to account for the uncertainty in the GBD estimates.

OVERVIEW

There are two components and five main methodological steps in the economic analysis of the investment case. The Base Model is the first component and includes the first two methodological steps depicted in Figure 2; the second component is the policy/intervention scenario which entails methodological Steps 3–5 in Figure 2.

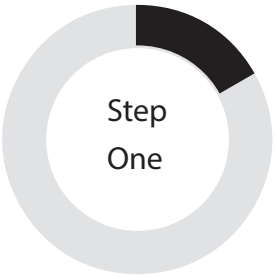
Fig. 2: Methodological Steps



4 Except the cost of smoking in the workplace to employees and employers

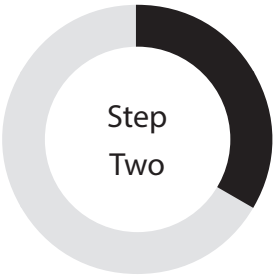
COMPONENT ONE:
BASE MODEL

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



Estimate mortality and morbidity from tobacco-related diseases.

The model includes a list of 27 diseases and conditions[5] from the article "*Smoking prevalence and attributable disease burden in 195 countries and territories: 1990–2015: a systematic analysis from the Global Burden of Disease 2015*", published in the Lancet in 2017[6] that provides global evidence of smoking-attributable diseases in 195 countries [9]. ICD-10 and ICD-9 codes associated with each of the 27 diseases can be found in Annex 1.



Estimate the total economic costs (direct and indirect costs) associated with tobacco-related diseases.

The model estimates total tobacco-related healthcare expenditures in Georgia as well as the indirect costs of tobacco use to the country's economy.

Direct costs of tobacco-attributable healthcare expenditures — include both public (government-paid) and private out-of-pocket and other tobacco-related healthcare expenditures. These costs were estimated using the smoking-attributable fraction of health expenditures for Georgia, which is 8.10% (range: 6.9%-13%)[7] of total healthcare expenditures.

Indirect costs of tobacco to the economy — consists of economic losses from morbidity and premature mortality resulting from 27 tobacco-related non-communicable diseases and other health conditions, such as tuberculosis. The model examines two different types or sets of indirect costs:

5 The list of diseases can be found in the table S5 of the Supplementary Appendix of the paper. www.thelancet.com/cms/attachment/2110592648/2083226575/mmc1.pdf

6 Reitsma MB, Fullman N, Ng M, Salama JS, Abajobir A, Abate KH, et al. Smoking prevalence and attributable disease burden in 195 countries and territories, 1990–2015: a systematic analysis from the Global Burden of Disease Study 2015. The Lancet. 2017;389(10082):1885-906

7 Determined in email consultations with Mark Goodchild. The correspondence was to get updated to his 2017 published paper which estimated country-specific smoking-attributable fractions for healthcare expenditures.

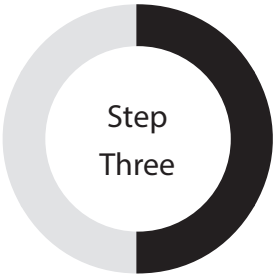
- *The cost of premature mortality due to tobacco use* — the number of individuals who died from smoking-attributable diseases multiplied by the amount of economic value they would have produced over their remaining years of working-age life expectancy had they not died from a smoking-related illness or disease (based on per capita GDP). [8] When individuals die early from tobacco-related illnesses and health conditions, they also exit the workforce early. As a result, there is a productivity loss associated with their premature death (age 30–69).

- *The cost of smoking in the workplace to employees and employers* [9] — consists of three subcategories of costs incurred due to (1) excess absenteeism – the estimated number of working days (2.6 days per year) missed due to active smoking, (2) excess presenteeism – the estimated loss of productivity (average 1% per year) among active smokers at the work place, (3) smoking breaks – the average number of working days (8.3 days and 249 working days per year) lost due to smoking breaks [10].

8 The economic cost of premature mortality from tobacco use is the present value of current and future earnings foregone due to premature mortality from tobacco use.
9 No range is provided for costs of smoking at the workplace to employers and employees.

COMPONENT TWO:
BASE MODEL

This component uses modified versions of the base model to estimate effects of tobacco control policies and interventions on mortality and morbidity, as well as on total economic costs (direct + indirect) associated with tobacco use.



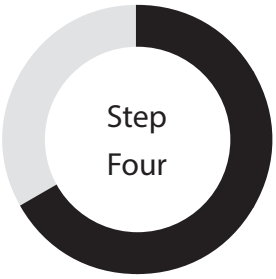
Estimate the effects of various tobacco control policies and interventions on the mortality, morbidity and total economic costs (direct and indirect) associated with tobacco-related diseases.

Four WHO FCTC policy/intervention measures were selected, as agreed in consultations with the Government. To assess the impact of these interventions, the model used estimates from a WHO Fact Sheet for Georgia [11] which applied the SimSmoke model to estimate prevalence reductions for each intervention.[10] The results from this step provide estimates of the risk factor attributable mortality and morbidity for tobacco-related diseases, as well as the total economic costs associated with tobacco-related diseases for each of the policies/interventions analyzed.

Fig. 3: Estimated Prevalence Reduction Per WHO FCTC Intervention

Four WHO FCTC Priority Intervention Package	Relative Change in Smoking Prevalence: First 5 Years	Relative Change in Smoking Prevalence: Years 6-15	Relative Change in Smoking Prevalence: 15 Years
Raise cigarette taxes (FCTC Art.6)	-18.2%	-9.1%	-27.3%
Smoke-free policies (FCTC Art.8)	-5.4%	-0.8%	-6.2%
Advertisement ban (FCTC Art. 11)	-10.0%	-2.0%	-12.0%
Labeling and packaging (FCTC Art.13)	-6.0%	-3.0%	-9.0%
All interventions combined	**-33.0%**	**-12.4%**	**-45.4%**

10 These estimates represent the effects of those tobacco control policies on smoking prevalence in isolation of other efforts (i.e. no other interventions/policies implemented simultaneously).



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

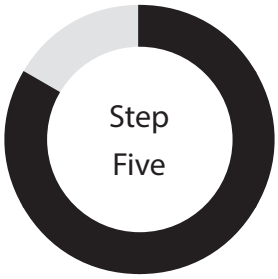
The model compared results for each of the tobacco policy/intervention scenarios modeled to the results from the base model (marginal effects)[11] and assessed the effects of expected reductions in tobacco use prevalence (from Step 3) resulting in (i) reductions in tobacco-related mortality and morbidity (lives saved) and (ii) savings in direct and indirect costs of tobacco use over a 15-year period. The four specific interventions/policies examined and their implementation costs[12] were estimated after 5 and 15 years are as follows:

Fig. 4: Estimated Implementation Costs of Selected Interventions

Four WHO FCTC Priority Intervention Package	Estimated Intervention Costs first 5 Years (millions)*	Estimated Intervention Costs after 15 Years (millions)*
Raise cigarette taxes (FCTC Art.6)	GEL 1	GEL 2.5
Smoke-free policies (FCTC Art.8)	GEL 1.8	GEL 3.6
Advertisement ban (FCTC Art. 11)	GEL 0.9	GEL 1.9
Labeling and packaging (FCTC Art.13)	GEL 0.9	GEL 1.8
All interventions combined	**GEL 4**	**GEL 10**

*The financial costs for implementing tobacco control interventions/policies were obtained from the WHO Costing Tool for Prevention and Control of Noncommunicable Diseases (NCDs). We obtained country-specific financial cost estimates for Georgia from the tool and adjusted the financial cost estimates for inflation. All financial cost estimates used for the FCTC Investment Case Analysis are in 2016 Georgian Laris (GEL).

11 The marginal effects represent the reduction in burden, or savings in terms of lives or costs, that could be achieved when the interventions are implemented.
12 The approach is a financial (as opposed to an economic or opportunity cost) approach; that is, the interest is in identifying the actual budgetary resources needed to develop and implement policies or strategies that have been shown to be technically efficient.



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

ROIs were calculated for (i) each of the four tobacco control policies and interventions modeled, (ii) total economic losses and (iii) specific outcomes, such as lives saved or healthcare expenditures. Estimates from Step 4, including the marginal effects of the interventions/policies and the costs of implementing them, were used to calculate ROIs for each year for a 15-year period.

$$\textbf{Return on Investment} = \frac{\text{Benefits of Intervention/Policy}}{\text{Costs of Implementing Intervention/Policy}}$$

The formula for ROI can also be expressed in terms of the marginal effects of the policy (as described in Step 4).

$$\textbf{Return on Investment} = \frac{\text{Marginal Effects of Intervention/Policy}}{\text{Costs of Implementing Intervention/Policy}}$$

Estimates of the total revenue from cigarette sales and cigarette tax revenue.

To estimate total government tobacco tax revenues, the model used 2014 data on total cigarette pack sales, excise tobacco tax rates, and average price per pack of cigarettes in Georgia [12].[13]

Total Amount Spent by Consumers = Total Pack Sales × Average Price Per Pack

Manufacturer/Retailer Revenue = Amount Spent by Consumers - Government Revenue

Government Revenue = Total Pack Sales × Excise Tax Per Pack

13 Tobacco tax rates were provided by the Georgian Ministry of Finance and National Statistics Office.

LIMITATIONS

The analysis has several limitations.

1 Calculation of population-attributable fraction (PAF)

First, due to limited availability of methods used in the 2016 GBD study, the population-attributable fraction (PAF) at the intervention smoking prevalence level was not recalculated/modeled. Instead, the risk factor attributable outcomes were directly adjusted. By doing so, the impact of interventions on tobacco-related outcomes are slightly overestimated.

2 Estimation of economic losses due to premature mortality

Second, economic losses due to premature mortality were estimated as the number of tobacco-related deaths times annual per capita Gross Domestic Product (GDP). This method values all individuals equally and calculates the value for each life lost based on a single year of GDP, with losses from deaths at all ages valued equally, not taking into account the potential for long-term, loss of lifetime income associated with premature mortality.

3 Estimation of tobacco-related healthcare expenditure

Third, given available data for Georgia, the estimated tobacco-related healthcare expenditure is based on a crude, top-down, approach of applying a smoking attributable fraction to total healthcare expenditures, instead of using expenditures for specific diseases associated with tobacco use. To address this, a rudimentary sensitivity analysis was performed with lower and upper bound estimates.

4 Estimation of workplace smoking costs

Fourth, the estimates for workplace smoking costs were based on official labour force data and do not account for the informal sector of the economy. Given that there was no information available on the range or variance of employment parameters (average time worked and average wage/salary) the model could not replicate the sensitivity analysis used in other components.

5 Estimation of intervention/policy costs

Fifth, estimates of intervention/policy costs are limited to the financial costs of implementation and enforcement which may overstate the impacts of these interventions on the total cost savings and ROI. Additionally, the effects of these interventions were modeled within a 15-year period, starting from 2017 until 2032. Thus, it does not account progressive enforcement of the recent amendments to the tobacco control legislation in Georgia.

6 Exclusion of increased tax revenue

Sixth, the model does not take into account the increased tax revenue that would result from raising excise taxes. Indeed, the additional tobacco tax revenue that would result from increasing taxes to 75% of the retail price of cigarettes would be substantial, making early implementation even more cost-effective. This is substantiated by the fact that after a 12% increase in excise taxes in on cigarettes, government tax revenues were projected to increase by GEL 200 million for the year 2017 over the previous year.

7 Assumption of no existing implementation of tobacco control intervention

Finally, the model assumes no existing implementation for the four tobacco control interventions. However, since the four interventions already exist in Georgia, strengthening these measures will have a marginal effect equal to the maximum potential effects if designed as per the WHO FCTC and fully enforced, minus the current effects of these interventions in Georgia. Figure 5 shows the current status of the four tobacco control measures, and how the new tobacco control law will improve on these measures.

Fig. 5: Current State of Implementation and New Tobacco Control Legislation

WHO FCTC Interventions*	Status of Tobacco Control Measures in Georgia [13]	New Tobacco Control Legislation [6]
Raise cigarette taxes (FCTC Art.6) **	Excise taxes are equal to 54% of the retail price of the most sold brand of tobacco	12% annual excise tax increase regulated by the Tax Code of Georgia.
Smoke-free policies (FCTC Art.8)	Smoking is banned in all public places, but is not well enforced in cafes, bars, and pubs.	Starting May 2018, smoking will be prohibited in all closed areas other than residential areas, penitentiaries and mental health institutions.
Labeling and packaging (FCTC Art.13)	Plain packaging is not mandated for tobacco products. Health warnings occupy 30% of the pack and there are no pictograms.	Starting September 2018, the size of health warnings will increase, pictograms introduced and plain packaging will be required by 2022.
Advertisement ban (FCTC Art. 11)	Banned advertising on TV & radio, but not on other form/s of direct and indirect advertising and promotion.	Starting May 2018, all forms of tobacco promotion will be banned.

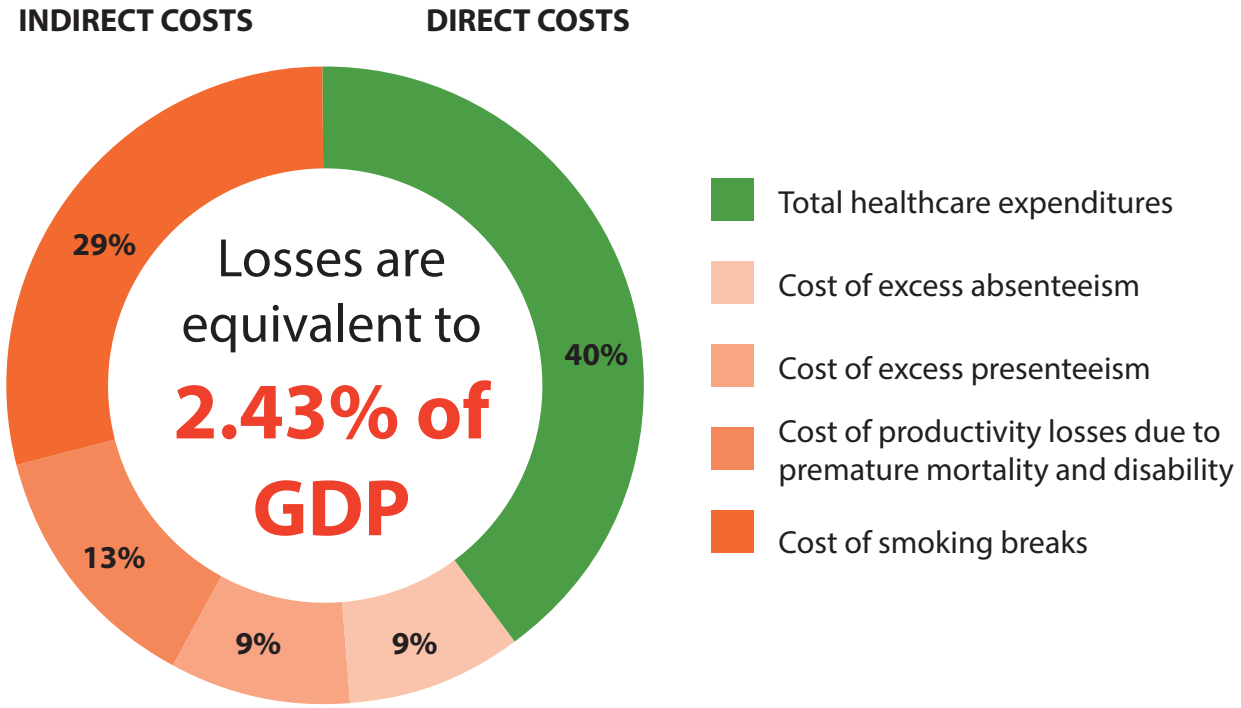
(*)Provisions listed in this table cover measures amended in the new tobacco control legislation and interventions used in the investment case model
(**) taxes are regulated by the Tax Code and are not included in the new tobacco control legislation. This provision was used in the investment case model

Results

Overall, the analysis indicates that the costs of inaction are far greater than the costs of pursuing effective tobacco control. Specifically, the current **total economic burden of tobacco use is equivalent to 2.43% of annual GDP,**[14] **or GEL 824.9 million**. This burden is comprised of 1) healthcare expenditures due to tobacco related diseases, and 2) indirect costs which in turn consist of a) economic losses due to premature mortality and disability b) productivity losses at the workplace, which are then further subdivided into costs due to smoking breaks, excess presenteeism, and excess absenteeism. Figure 6 provides estimated GEL values for each of the different categories of costs and economic losses.

As indicated in Figure 7 below, the estimated economic losses of direct costs, or healthcare costs, constitute 40% of the total tobacco burden while the remaining 60% are comprised of indirect costs due to premature mortality and disability and workplace costs. This underscores the fact that the tobacco burden is more than health-issue; it is an economic and sustainable development issue that affects all sectors of society, including the private sector.

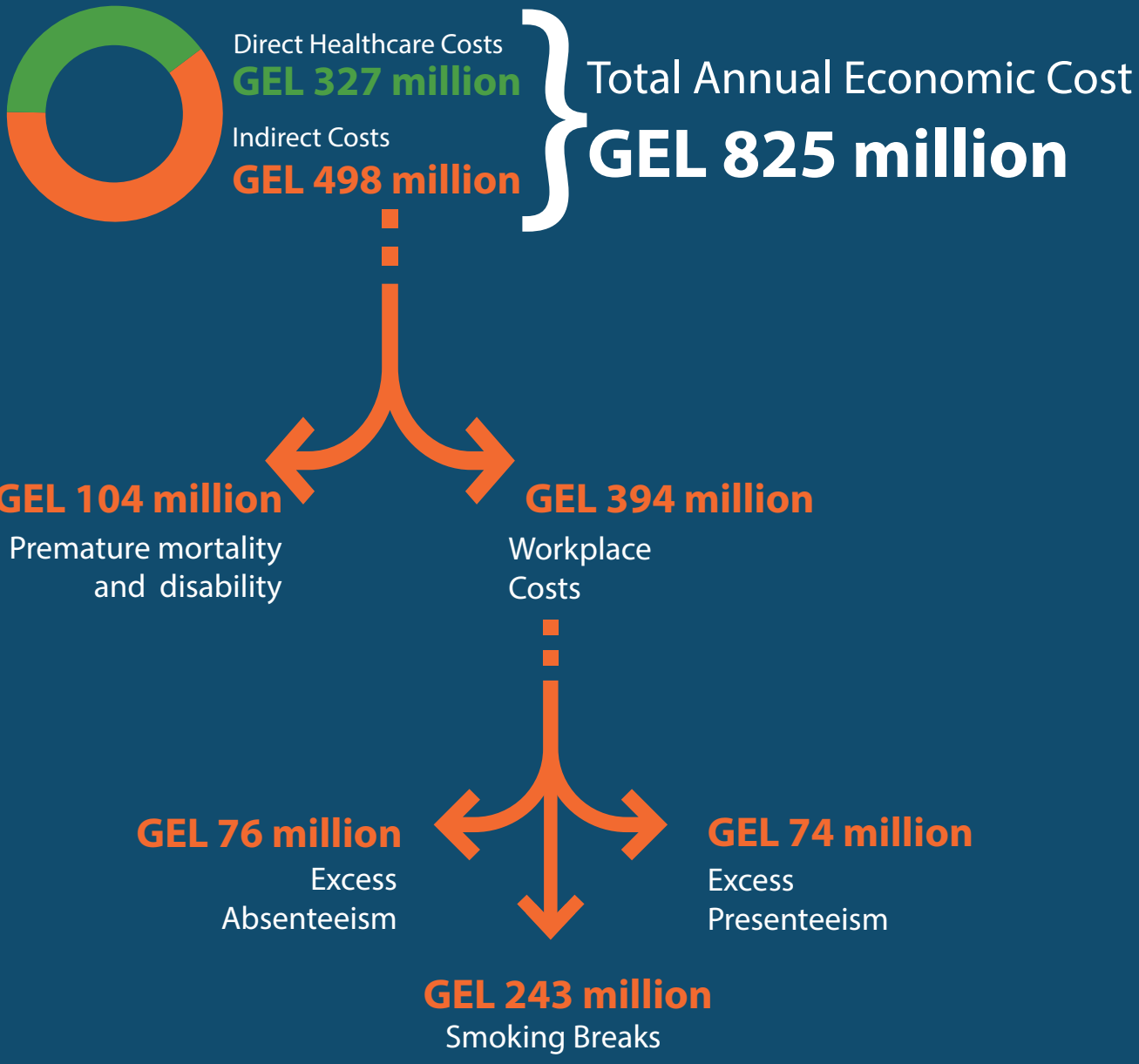
Fig. 7: Total Burden of Tobacco Use in Georgia



14 The model is using 2016 data estimates for GDP and assumed an annual GDP growth rate of 3.5%.

Total Burden of Tobbaco Use in Georgia

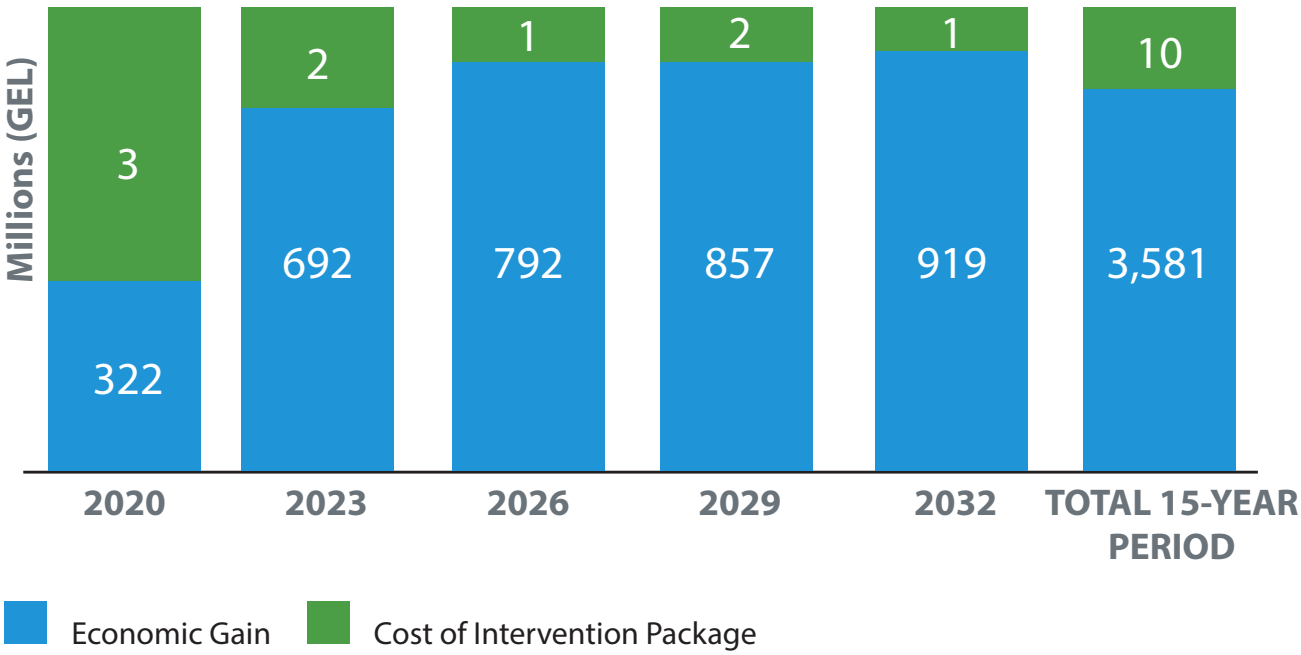
Fig. 6: Breakdown of Economic Losses and Costs



The economic costs tobacco places on the Georgian economy and society are alarming and will increase if no action is pursued. Fortunately, the investment case findings indicate that scaling up implementation of the four pre-selected tobacco control interventions/policy measures will result in significant averted economic losses, with the potential to spur economic growth.
Implementation of the four WHO FCTC measures will have an effect at multiple levels. Relative reductions in tobacco-use prevalence in Georgia will reduce indirect costs stemming from people dropping out of the workforce, dying prematurely, missing days of work and working at reduced capacities due to poor health and taking smoking breaks. Total averted economic losses in these areas would equal GEL 2.2 billion over 15 years. Further, enforcement of the four tobacco control interventions/policy measures will decrease government healthcare expenditure costs by GEL 506 million and out-of-pocket expenses by GEL 800 million over a 15-year period.

Figure 8 indicates cumulative averted economic losses (indirect and direct costs) as well as financial costs for implementation of the four FCTC interventions studied under the investment case. As tobacco use prevalence reductions accumulate over time, total averted economic losses for each three-year period increases. As seen in the far left column of Figure 8, implementation and enforcement of all four measures is estimated to result in GEL 322 million in averted economic losses by 2020, three years after starting enforcement in 2017. Meanwhile, the penultimate column to the right in Figure 8 indicates averted economic losses totaling GEL 920 million for the years 2029–2032. Finally, as indicated in the far right column, for the entire 15-year period, the total cumulative averted economic losses will reach GEL 3.6 billion.

Fig. 8: Cumulative averted economic losses vs. implementation costs (millions) of four FCTC interventions in three-year periods, starting in 2017



Further, findings indicate that that fully enforcing the four selected WHO FCTC priority interventions are extremely cost-effective measures at addressing the tobacco burden: if Georgia fully implements and enforces all four interventions together, the country can avoid GEL 3.6 billion in costs and economic losses over 15 years with an ROI of GEL 357 for every GEL 1 invested, as indicated in the bottom right box of Figure 9.

As indicated in the top two right boxes under Figure 9, raising cigarette taxes is the most effective intervention, allowing Georgia to avert over GEL 2.2 billion in economic losses and health-care costs over a period of 15 years. For every GEL 1 spent on implementing increased tobacco taxes, Georgian society receives GEL 221 in return, before accounting for the additional tax revenue that is likely to be substantial as a result of increased tobacco tax rates.

The second most effective intervention is advertisement bans, saving the government GEL 1.1. billion over 15 years and providing a return of GEL 117 over 15 years for every GEL 1 invested now. Due to the high cost of ensuring compliance, smoke-free policies confer the lowest averted costs and economic losses and have the lowest ROI. However, at GEL 66 in returns for every GEL 1 invested, this is still a considerably cost-effective intervention. Further, by inducing behavioral change and establishing new norms, indoor smoking bans have the potential to catalyze lasting system- and society-wide change.[15] Once smoking bans are enforced to a certain point, and enough people do not smoke where it is prohibited by law, smoke-free policies become increasingly self-enforcing.[16] This will lead to reduced administrative costs related to implementation and enforcement, increasing the cost-effectiveness of smoke-free policies.

Also, as per recommendations in WHO FCTC guidelines for Article 8, investments in education on the harms of smoking and awareness raising around new smoke-free policies, can be a very effective way of promoting compliance.

15 The phenomenon of 'tipping points', whereby a small change tips the balance of a system and brings about a large change is relevant here. For more information on tipping points: http://www.economist.com/node/13522500
16 As per WHO FCTC guidelines on Article 8: "…experience shows that smoke free legislation quickly becomes self-enforcing (that is, predominantly enforced by the public). Only a few prosecutions may be necessary if the legislation is implemented carefully and active efforts are made to educate businesses and the public."

Fig. 9: Returns on Investment Over 5 and 15 Years

Four WHO FCTC priority intervention package	Over 5 years			Over 15 years		
	Cost of intervention (millions)	Total averted costs (millions)	ROI	Cost of intervention (millions)	Total averted costs (billions)	ROI
Raise cigarette taxes (Art.6)	GEL 1	GEL 446	GEL 94/1	GEL 2	GEL 2.2	GEL 221/1
Smoke-free policies (Art.8)	GEL 1.8	GEL 151	GEL 32/1	GEL 3.6	GEL 0.660	GEL 66/1
Advertisement ban (Art. 11)	GEL 0.9	GEL 256	GEL 55/1	GEL 1.8	GEL 1.17	GEL 117/1
Labeling and packaging (Art.13)	GEL 0.9	GEL 165	GEL 35/1	GEL 1.8	GEL 0.814	GEL 81/1
All interventions combined	**GEL 4.7**	**GEL 764**	**GEL 161/1**	**GEL 10**	**GEL 3.581**	**GEL 357/1**

COST CATEGORY 1: DIRECT HEALTHCARE COSTS

Based on data provided by the Ministry of Labour, Health and Social Affairs (MoLHSA), Georgia's current annual healthcare expenditure is GEL 2.5 billion, out of which the Government spends over GEL 900 million, while out-of-pocket (OOP) expenditures are GEL 1.4 billion, or 57% of total healthcare spending. It should be noted that two-thirds of household out-of-pocket expenditures are spent on purchasing medicines [10].

The ***Georgia 2020*** national development strategy 'aims to implement evidence-based policies that will increase accessibility to primary healthcare services and reduce private expenditures to 30% of total spending. Shifting expenditures towards the public sector through the Universal Healthcare Programme requires investments in cost-effective interventions and strengthened primary-healthcare. By investing in tobacco control, Georgia can reduce healthcare spending, making progress towards health-sector goals and broader development goals alike [7] , [14].

Current trends in tobacco-use – if continued unabated – hinder progress on achieving more efficient healthcare spending and reduced out-of-pocket health spending. Thirteen percent, or GEL 327 million of Georgia's current total healthcare expenditure is attributable to tobacco use. Projecting tobacco-attributable healthcare expenditures in a 'no-action scenario' whereby current trends in tobacco-use in Georgia continue unabated, cumulative health-care expenditures due to tobacco-related diseases will reach GEL 4.9 billion over 15 years (Fig.10). The largest portion

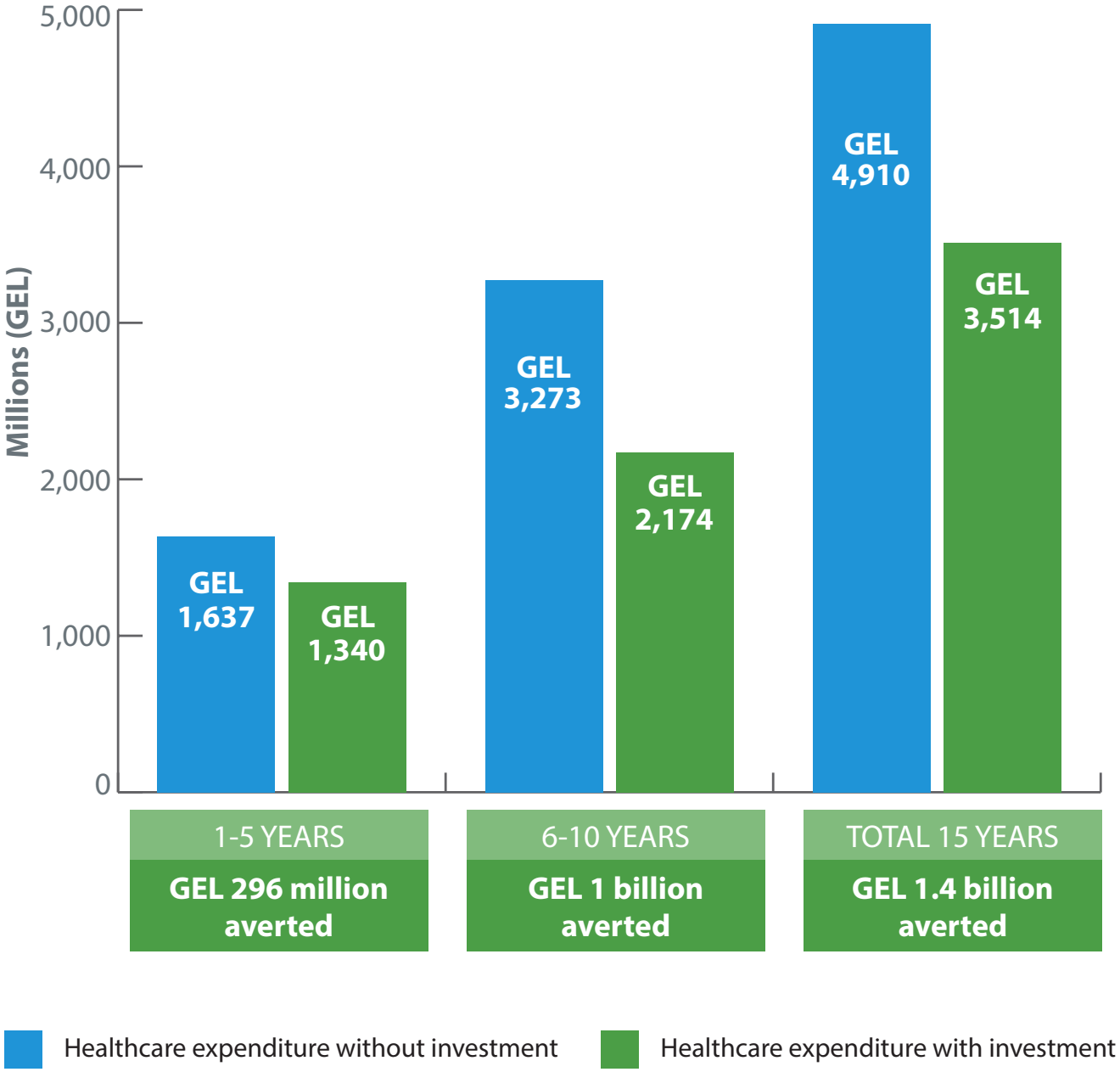
of tobacco-attributable spending will consist of OOP, placing burden on already vulnerable households and thereby exacerbating poverty [15].

Using estimates of the relative impact of tobacco control interventions on smoking prevalence (Annex 4), the model estimates that implementation and enforcement of the four tobacco control measures will help avert GEL 1.4 billion in direct healthcare expenditures over 15 years (Fig.11). Moreover, for every GEL invested, the country can expect GEL 139 in averted health-care costs over a 15-year period.

Fig. 10: Tobacco-Attributable Direct Healthcare Costs and Cost of Inaction Over 5 and 15 Years

	Current tobacco-attributable healthcare expenditure	**Tobacco-attributable healthcare expenditure over 5 and 15 years (i.e. Costs of inaction)**	
Costs per type of healthcare expenditure	GEL spent now (millions)	GEL spent over 5 years (millions)	GEL spent over 15 years (millions)
Government healthcare expenditures	GEL 118.7	GEL 539.4	GEL 1,780
Out-of-pocket healthcare expenditures	GEL 187.6	GEL 937.9	GEL 2,813
Other healthcare expenditures	GEL 21	GEL 105.3	GEL 315.9
Total direct healthcare cost	**GEL 327.3**	**GEL 1.6**	**GEL 4,910**

Fig. 11: Healthcare costs with/without interventions and total averted healthcare expenditures over 5, 10 and 15 years



COST CATEGORY 2: INDIRECT COSTS

Georgia 2020 intends to *increase productivity* to improve business and investment, *increase life expectancy* and ensure *sustainable economic development* [7]. In direct opposition to these development objectives, tobacco-attributable premature mortality as well as workplace absenteeism, presenteeism and smoking breaks, together impose *high productivity costs* and economic losses on Georgian society. **Full enforcement of amendments under the Tobacco Control Legislative Package will reduce economic losses due to premature mortality as well as tobacco-related costs at the workplace.**

Investment case findings indicate that **GEL 497.6 million** — or 60% of tobacco-attributable costs in Georgia — are indirect costs due to premature mortality and disability, as well as costs to employees and employers. Annually, **188,936** years of life are lost due to tobacco out of which **25,594** years are lost due to second-hand smoke and **91,352** years are lived with disability.

These life years lost cause lost years of productivity and foregone contributions to the national economy; the resulting costs, as estimated under the investment case model, are alarming. Total indirect costs are projected to increase to a cumulative GEL 2.5 billion after 5 years, and GEL 7.5 billion after 15 years (Fig.12). Roughly two-thirds of these costs are due to productivity losses at the workplace, which is a strong justification for private sector employers to assist in enforcing and implementing tobacco control provisions, especially indoor smoking bans at the workplace.

Fig. 12: Tobacco-Attributable Indirect Losses and Cost of Inaction Over 5 and 15 Years

	Current tobacco-attributable indirect losses	**Cost of inaction over 5 and 15 years of period (i.e. Cost of Inaction)**	
Cost per type of losses	GEL spent now (millions)	GEL spent over 5 years (millions)	GEL spent over 15 years (millions)
Economic losses due to premature mortality	GEL 104.1	GEL 528	GEL 1.625
Productivity losses to employers and employees	GEL 393.5	GEL 1,967	GEL 5,902
Total indirect costs	**GEL 497.6**	**GEL 2,495**	**GEL 7,527**

LIVES SAVED

Apart from economic gains, the selected interventions lead to substantial gains in life-expectancy and the future health and well-being of the population in Georgia.

Again, strengthened tobacco control aligns with and contributes to expected outcomes under Georgia 2020, specifically: 'to reform Georgia's healthcare sector to increase the population's life expectancy and improve its overall health'. As indicated in the bottom row of Figure 13, the model estimates that over 15 years, 53,100 tobacco-attributable deaths of citizens of Georgia will be avoided, which translates to **5.3 lives saved per GEL 1,000 invested**. Of the four interventions, raising cigarette taxes is the most cost-effective, saving **13.3 lives per GEL 1,000 invested**.

Advertisements bans are second most cost-effective, labeling and packaging third, and smoke-free policies cost the most per life saved. This is due to the higher implementation costs for some-free policies, which includes broad administrative measures for effective enforcement. However, as noted previously, smoke-free policies can become self-enforcing once social change has become entrenched and new norms are established. Thus, enforcement and administrative costs are likely to drop, and the cost-effectiveness of smoke-free policies likely to increase in the long-term.

Fig. 13: Lives Saved Per WHO FCTC Intervention Over 15 Years

Four WHO FCTC priority intervention package	Over 15 years	
	Total number of lives saved	Lives saved per GEL 1000
Raise cigarette taxes (FCTC Art.6)	35,000	13.3
Smoke-free policies (FCTC Art.8)	14,000	3.9
Advertisement ban (FCTC Art.11)	21,000	10.8
Labeling and packaging (FCTC Art.13)	16,000	8.5
All interventions combined	**53,100**	**5.3**

Tobacco Industry Interference

The tobacco industry's arguments and tactics are consistent across low- and middle-income countries and challenge economic growth. Georgia is not an exception, where the most common arguments against comprehensive tobacco control measures are (i) decreased government revenue (ii) increased smuggling and illicit trade, and (iii) negative impacts on the hospitality sector [16]. The Government should be prepared for the tobacco industry's response to strengthened tobacco control measures; the industry is likely to respond with a campaign of misinformation targeting policy makers and sectors of the Government and society. It may also aim to discredit the findings of this investment case.

The FCTC Investment Case Model does not quantify the potential impact of price and tax measures on government revenue and illicit trade, nor does it quantify the potential impact of smoke-free policies on the hospitality industry. However, desk review of available literature provides strong counterarguments which the Government of Georgia can use to respond to misinformation propagated by the tobacco industry.

Increasing taxes on tobacco products is likely to increase government revenue while not promoting illicit trade. Much global evidence exists to suggest that raising taxes on tobacco products not only reduces tobacco consumption, but also increases tax revenue. For example, a 2017 WHO and UNDP joint report finds by increasing the retail price of cigarettes by 50 percent the government would receive an additional USD 66 billion in tax revenue annually [17]. In the case of Georgia, experience suggests that increasing taxes will lead to additional tax revenues as well. In 2016, tobacco taxes generated GEL 574 million in government tax revenue and through the latest increase in tobacco taxes in 2017, government revenue was expected to increase by GEL 200 million [12].

Regarding illicit trade, the risk of illicit trade increases in relation to the differences in price between tobacco products domestically and those in neighboring countries. However, as the price per pack of cigarettes in Georgia is still below that of many countries in the region as well as that of bordering countries (Turkey, Azerbaijan and Armenia in Fig.14), there is more room for Georgia to increase taxes on tobacco products without incentivizing illicit trade of tobacco products into the country.

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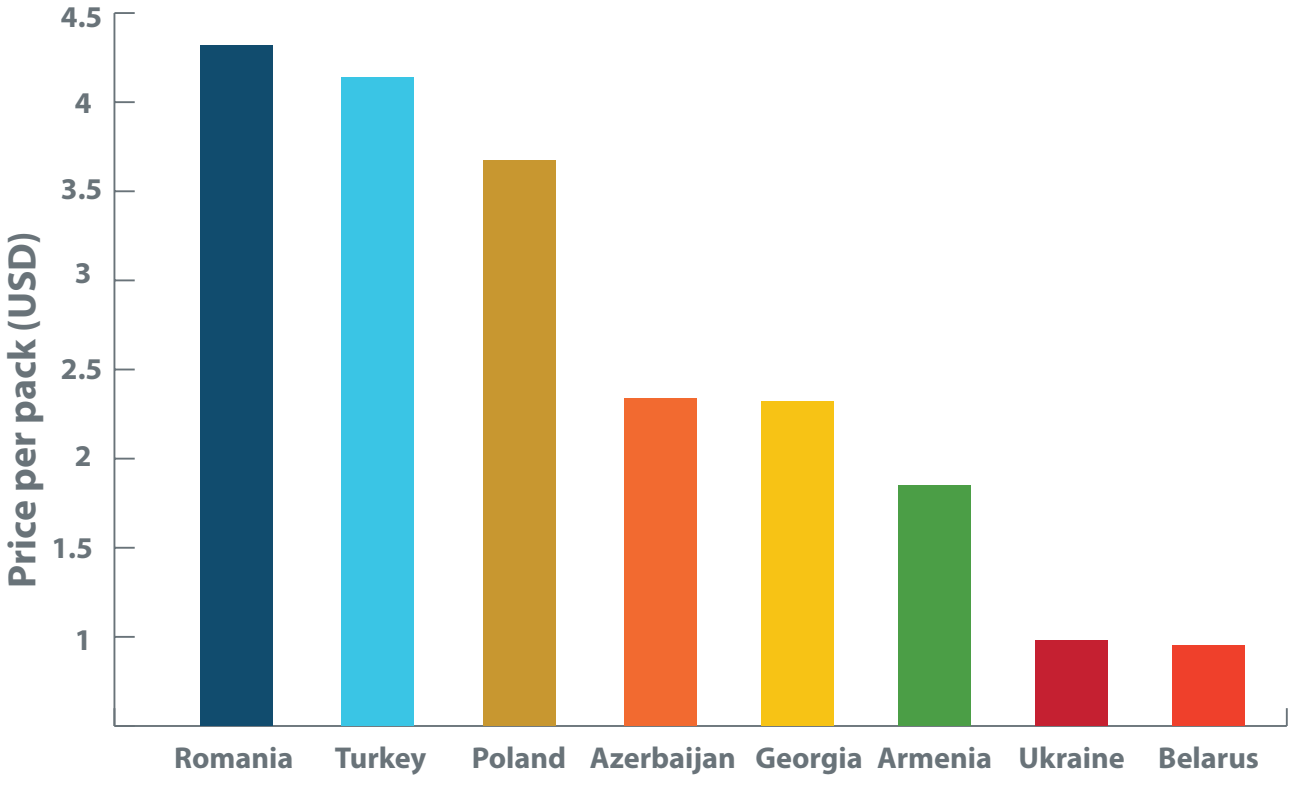
Fig. 14: Price Per Pack of Cigarettes (USD)



Increasing taxes on tobacco products can lead to additional economic benefits. To underscore that increased taxes on tobacco products will not lead to negative outcomes, there are several additional pathways by which increased tobacco taxes may lead to economic benefits. First, by raising taxes on tobacco products, the Government of Georgia will avert tobacco-attributable costs and economic losses. Of the four tobacco control interventions examined, the investment case model predicts that tobacco taxes have the greatest potential for savings lives and costs (see results section).

An additional pathway for how tobacco taxes can confer economic benefits and reduce poverty, is by decreasing tobacco consumption and thereby retaining consumer spending and capital within the country. Most of the money spent by Georgian consumers on tobacco products are funneled out of the country by multi-national companies.

In 2014, citizens of Georgia spent a total of GEL 1.1 billion on cigarettes, of which roughly GEL 750.5 million went to multinational corporations while only GEL 358.5 million was collected as government revenue from excise taxes. By reducing tobacco consumption, increased taxes lead to Georgian consumers spending more money on other products, goods, and services possibly resulting in a larger share of consumer expenditure directed towards local goods and production.

Finally, by harmonizing regulations with EU standards, increased tobacco tax rates have the potential to stimulate the national market by increasing international trade.

Smoke-free policies can have a positive impact on the hospitality industry. There is a global evidence that smoke-free legislation does not have a negative impact on the hospitality sector, and that in some cases smoke-free legislation improves business. Two meta-reviews comprising over 170 studies and two impact studies found that smoke free-laws do not have an adverse or no economic impact on the business activity of restaurants, bars, or establishments catering to tourists; a small number of studies found a positive effect of these policies [18] – [21]. Hence, policymakers can act to protect workers and patrons from the toxins in secondhand smoke, confident in rejecting industry claims that there will be an adverse economic impact.

Recommendations and Conclusion

The FCTC Investment Case findings show that tobacco poses a significant threat to the health of Georgian citizens and the sustainable development of the country. With the recent passage of Georgia's new tobacco control legislation, the country is taking advanced steps towards addressing the tobacco epidemic. However, impact of the new tobacco control measures mandated under the new law will – to a large extent – depend on the Government of Georgia's ability to successfully implement and enforce these measures while protecting them from tobacco industry interference.

As discussed in the introduction, the purpose of the investment case is to offer strong economic arguments for policy makers and allies to raise awareness around the harms of tobacco and the need for strengthened tobacco control. The following provides a list of possible action points and recommendations for the Government on how it might use the investment case findings to their greatest effect.

Credit: © Pablo Andrés Rivero via Flickr

1 Raise awareness among the public and government of the true costs of tobacco and the benefits of tobacco control.

Doing so will help sustain strong public support and political will in Georgia to strengthen tobacco control, while convincing line ministries, the private sector and the public of the need for their support and engagement. Policy makers are encouraged to share the investment case findings broadly among civil society, the public and all sectors of government. The attached advocacy strategy provides key messages that policy makers can use and disseminate.

2 Advocate for multi-sectoral action to fully implement and enforce Georgia's 2017 tobacco control law, while protecting it from tobacco industry interference.

The Government can leverage the investment case findings reported here and within the economic model to advocate for strong collaboration and coordination between sectors — coordination which is crucial to effective implementation and enforcement of provisions under the new tobacco control law. Under leadership of the Ministry of Labour, Ministry of Health and Social Affairs and the National Center for Disease Control, the National Tobacco Control Committee can be re-activated and issues such as enforcement of indoor smoking bans can be addressed collectively. Policy makers may craft targeted messages using investment case findings to convince other sectors of the need for increased engagement and coordination.

3 Help ensure adequate funding and resourcing of tobacco control measures and infrastructure.

The EU-Association Agreement allows Georgia to deepen political and economic integration with the EU only if it successfully meets preconditions including in areas of tobacco control. This provides strong economic incentives for the Government of Georgia and the private sector to support tobacco control efforts.[17] Tobacco control advocates can craft targeted messages to private sector stakeholders as well as the Ministry of Economy and Sustainable Development and Ministry of Finance that convey these economic benefits, alongside those outlined in this investment case.

17 Due to increased trade and economic growth once Georgia is accepted into the Deep and Comprehensive Free Trade Area of the EU.

Accelerate implementation of all provisions under the new tobacco control law.

For every year that implementation of provisions under the new tobacco control law are delayed, Georgia suffers a significant amount of costs and economic losses which could be averted. Government commitments to the people of Georgia set out in the Georgia 2020 national development strategy, provides a strong justification for swift and effective enforcement of new tobacco control measures. The Government is encouraged to frame investment case findings in terms of social and economic development, linking outcomes to national development goals of Georgia 2020.

Advocate for additional increases in tobacco taxes which is the most cost-effective for the four tobacco control measures examined.

Tobacco tax increases of 12% for 2018 are scheduled under the Georgian Tax Code, increasing tobacco excise taxes from 54% to 66% of the retail price. This is still below WHO FCTC recommended levels of 75%, as modeled by the investment case. Policy makers can advocate for additional tobacco-tax increases, citing evidence provided here that tobacco tax increases are estimated to be the most cost-effective tobacco control measure among the four modeled measures. Further, tobacco tax increases will lead to increased government tax revenue which can be reinvested into development priorities of the country.

Drive further progress in implementing the WHO FCTC.

Georgia has strong allies for tobacco control. The Government can leverage here the capacities of its national and international allies such as the Ministry of Labour, Health and Social Affairs, Members of Parliament, National Center for Disease Control and Public Health, Ministry of Education and Science, Ministry of Sports and Youth Affairs, civil society (Tobacco Control Alliance comprised of 15 NGOs), academia and the United Nations. Together, these partners can support further implementation of the WHO FCTC by advocating, coordinating and integrating tobacco control into laws, policies, strategies, plans, objectives and programmes.

Annexes

ANNEX 1: Diseases with Evidence Supporting a Causal Link with Smoking That Are Included in the FCTC Investment Case Model

Disease	ICD-10 Codes
Tuberculosis	A10-A14, A15-A19.9, B90-B90.9, K67.3, K93.0, M49.0, P37.0
Lower Respiratory Infections	A48.1, A70, B97.4-B97.6, J09-J15.8, J16-J16.9, J20-J21.9, P23.0-P23.4, U04-U04.9
Lip and Oral Cavity Cancer	C0-C8, D0, D10-D11, D37
Nasopharynx Cancer[1] (mortality only)	C11, D00.08, D10.6, D37.05
Esophageal Cancer	C15, D0, D13
Larynx Cancer	C32, D2, D14, D38
Stomach Cancer	C16, D00.2, D13.1, D37.1
Colon and Rectum Cancer	C18-C21, D1, D12-D12, D37
Liver Cancer	C22-C22.9, D13.4
Pancreatic Cancer	C25, D13.6-D13.7
Tracheal, Bronchus, and Lung Cancer	C33-C34, D02.1-D02.3, D14.2-D14.32, D38.1
Cervical Cancer	C53, D6, D26
Kidney Cancer	C64-C65, D30, D41
Bladder Cancer	C67, D9, D30, D41, D49
Leukemia	C91-C95
Ischemic Heart Disease	I20-I25
Ischemic Stroke	G45-G46, I63, I65-I67, I69
Hemorrhagic Stroke	I60-I62, I67-I69
Hypertensive Heart Disease	I11-I11.9
Atrial Fibrillation and Flutter	I48
Aortic Aneurysm[1] (mortality only)	I71
Other Cardiovascular and Circulatory Diseases	A39.5-A39.50, A39.53, I28-I28.8, I30-I31.1, I31.8-I32.8, I34-I37.9, I47-I47.9, I51.0-I51.3, I68.0, I72-I72.9, I77-I83.93, I86-I89.9, I91.9, I98
Chronic Obstructive Pulmonary Disease	J40-J44, J47
Asthma	J45-J46
Other Chronic Respiratory Diseases	G47.3-G47.39, J30-J35.9, J37-J39.9, J66-J68.9, J70-J70.1, J70.8-J70.9, J82, J91-J92, J92.9

ANNEX 1 (CONTINUED): Diseases with Evidence Supporting a Causal Link with Smoking That Are Included in the FCTC Investment Case Model

Disease	ICD-10 Codes
Peptic Ulcer Disease	K25-K28.9, K31, K31.1-K31.6, K31.8, K31.82-K31.89
Diabetes Mellitus	E10-E14, P70, R73
Peripheral Artery Disease[2] (morbidity only)	I70, I73
Rheumatoid Arthritis[2] (morbidity only)	M05-M06.9, M08.0-M08.89
Cataract[2] (morbidity only)	H25-H26.9, H28-H28.8
Macular Degeneration[2] (morbidity only)	H35.3-H35.389

25 of the 31 diseases included in the FCTC Investment Case Model for Georgia are associated with, and have available data for Georgia for, both mortality and morbidity.

1 Two of the 31 diseases included in the FCTC Investment Case Model for Georgia are only included in the mortality component of the model due to available data for Georgia: nasopharynx cancer and aortic aneurism.
2 Four of the 31 diseases included in the FCTC Investment Case Model for Georgia are only included in the morbidity component of the model due to associations between smoking and morbidity (and not mortality) as well as available data for Georgia: peripheral artery disease, rheumatoid arthritis, cataract, and macular degeneration.

ANNEX 2: List of Tobacco-Related Directives from the Georgia-EU Association Agreement

Directive 2001/37/EC of the European Parliament and of the Council on the approximation of the laws, regulations and administrative provisions of the Member States concerning the manufacture, presentation and sale of tobacco products.
Directive 2003/33/EC of the European Parliament and of the Council on the approximation of the laws, regulations and administrative provisions of the Member States relating to the advertising and sponsorship of tobacco products.
Recommendation of the European Parliament and of the Council on the prevention of smoking and on initiatives to improve tobacco control (2003/54/EC).
Council Recommendation of 30 November 2009 on smoke-free environments (2009/C 296/02).
Council directive 2011/64/EU of 21 June 2011 on the structure and rates of excise duty applied to manufactured tobacco.
Council Directive 2007/74/EU of 20 December 2007 on the exemption from value added tax and excise duty of goods imported by persons travelling from third countries.

ANNEX 3: Parameters Estimates Used in the Calculation of the Economic Cost of Workplace Smoking-Related Productivity Losses (Berman Et Al., 2014)

Parameter	Estimate from Berman et al. (2014)
Excess Absenteeism	U.S. Studies 2.6 days per year (average) 2.3 to 2.9 days per year (range) (U.S. studies) International Studies Results range from: 1.0 days per year (Taiwan) 7.7 days per year (Sweden)
Excess Presenteeism Rate	1% (conservative estimate) 4% (upper bound)
Elective Smoking Breaks	15 minutes per day (average) 8-30 minutes per day (range)

ANNEX 4: Estimated Impacts for Tobacco Interventions and Policies in Georgia

Year	**Relative Change in Smoking Prevalence:** All Four Interventions Combined	**Relative Change in Smoking Prevalence:** Increase Taxes	**Relative Change in Smoking Prevalence:** Smoke-Free Air Laws	**Relative Change in Smoking Prevalence:** Enforce Marketing Restrictions	**Relative Change in Smoking Prevalence:** Cigarette Package Warnings
1	-6.60%	-3.64%	-1.08%	-2.00%	-1.20%
2	-6.60%	-3.64%	-1.08%	-2.00%	-1.20%
3	-6.60%	-3.64%	-1.08%	-2.00%	-1.20%
4	-6.60%	-3.64%	-1.08%	-2.00%	-1.20%
5	-6.60%	-3.64%	-1.08%	-2.00%	-1.20%
6	-1.24%	-0.91%	-0.08%	-0.20%	-0.30%
7	-1.24%	-0.91%	-0.08%	-0.20%	-0.30%
8	-1.24%	-0.91%	-0.08%	-0.20%	-0.30%
9	-1.24%	-0.91%	-0.08%	-0.20%	-0.30%
10	-1.24%	-0.91%	-0.08%	-0.20%	-0.30%
11	-1.24%	-0.91%	-0.08%	-0.20%	-0.30%
12	-1.24%	-0.91%	-0.08%	-0.20%	-0.30%
13	-1.24%	-0.91%	-0.08%	-0.20%	-0.30%
14	-1.24%	-0.91%	-0.08%	-0.20%	-0.30%
15	-1.24%	-0.91%	-0.08%	-0.20%	-0.30%

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