



Empowered lives.  
Resilient nations.



**FCTC**  
WHO FRAMEWORK CONVENTION  
ON TOBACCO CONTROL  
SECRETARIAT

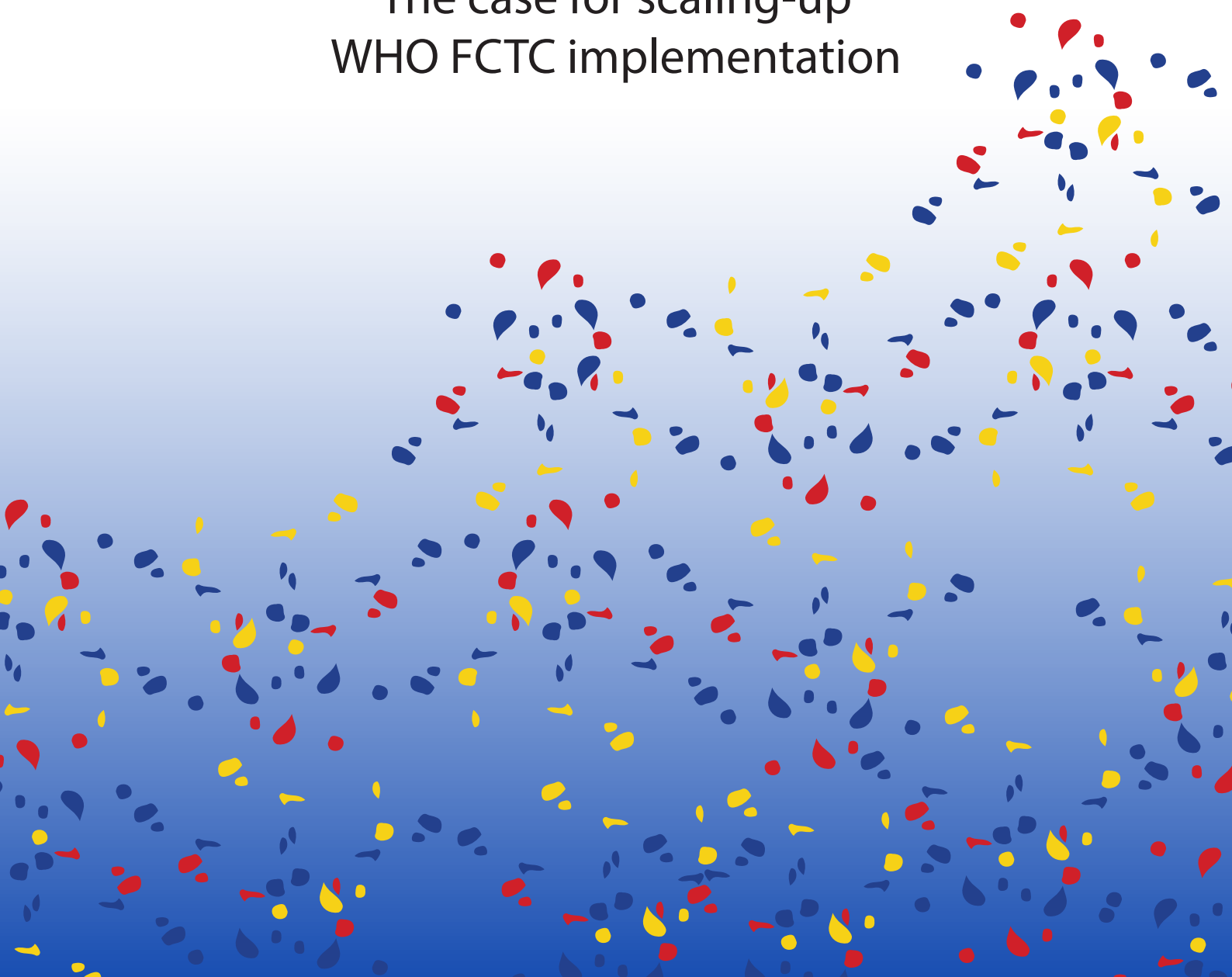
MINISTÉRIO DA  
SAÚDE E DA  
SEGURANÇA SOCIAL



World Health  
Organization

# Investment Case for Tobacco Control in Cabo Verde

The case for scaling-up  
WHO FCTC implementation



This report was translated by Fabio Carvalho and Tomas Krejici. It was laid out graphically by Zsuzsanna Schreck.



*Empowered lives.  
Resilient nations.*

Copyright © UNDP

All rights reserved

July 2019

### **Disclaimer**

The views expressed in this publication are those of the authors and do not necessarily represent those of UNDP or the Convention Secretariat, WHO FCTC.

United Nations Development Programme

One United Nations Plaza, New York, NY, 10017, USA.



Empowered lives.  
Resilient nations.



**FCTC**  
WHO FRAMEWORK CONVENTION  
ON TOBACCO CONTROL  
SECRETARIAT

MINISTÉRIO DA  
SAÚDE E DA  
SEGURANÇA SOCIAL

GOVERNO DE  
**CABO  
VERDE**  
A TRABALHAR PARA TODOS.

**RTI**  
INTERNATIONAL



World Health  
Organization

# **The case for scaling-up WHO FCTC implementation in Cabo Verde**

Prepared by  
RTI International  
Ministry of Health, Cabo Verde  
United Nations Development Programme  
WHO FCTC Secretariat  
World Health Organization

---

July 2019



Funded by  
UK Government



*Credit: © Rey Perezoso/World Bank via Flickr*

Tobacco costs Cabo Verde

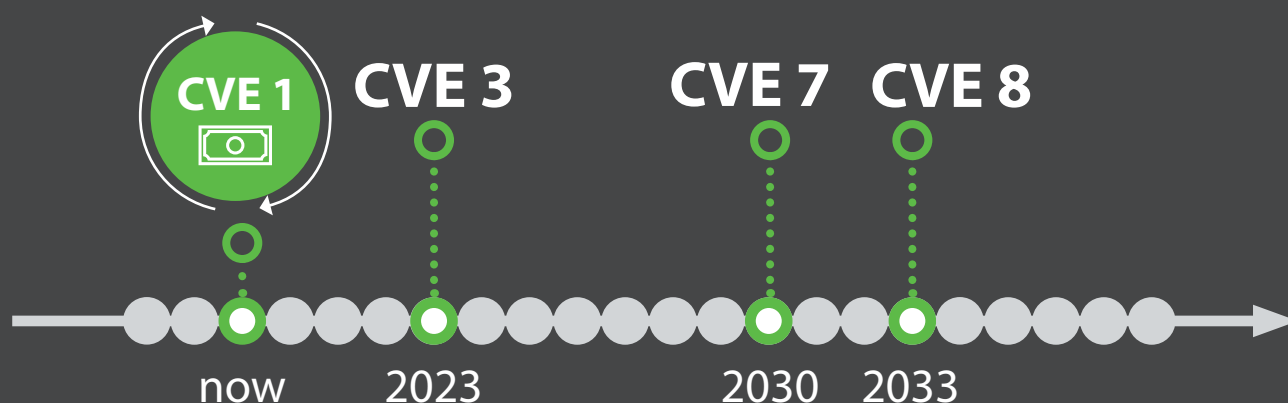
**CVE 1.62 billion  
every year**



equivalent to

**1.1% of its GDP**

For every CVE 1 invested in six WHO FCTC interventions, Cabo Verde will receive **CVE 3** in averted healthcare costs and avoided economic losses by 2023 and **CVE 8** by 2033.



# Table of Contents

<b>List of figures and tables .....</b>	<b>vii</b>
<b>1. Executive summary .....</b>	<b>1</b>
<b>2. Introduction .....</b>	<b>5</b>
<b>3. Tobacco control in Cabo Verde: status and context .....</b>	<b>7</b>
3.1 Tobacco use prevalence, social norms, and awareness .....	7
3.2 Tobacco control regulatory measures .....	8
3.3 National coordination, strategy, and planning .....	11
<b>4. Methodology .....</b>	<b>12</b>
<b>5. Results .....</b>	<b>13</b>
5.1 The current burden of tobacco use: health and economic costs .....	13
5.2 Implementing policy measures that reduce the burden of tobacco use .....	17
5.2.1 Health benefits—Lives saved .....	17
5.2.2 Economic benefits .....	17
5.2.3 The return on investment .....	20
5.2.4 Tobacco control as an accelerator for the SDGs .....	21
<b>6. Conclusion and recommendations .....</b>	<b>23</b>
<b>7. Methodology annex .....</b>	<b>25</b>
7.1 Overview .....	26
7.2 Component one: current burden .....	26
7.3 Component two: policy/intervention scenarios .....	28
7.4 The impact of changes in smoking prevalence .....	30
7.5 The financial costs of implementing tobacco control measures .....	31
7.6 The return on investment (ROI) .....	32
<b>8. References .....</b>	<b>34</b>

## List of figures and tables

Fig. No.	Caption	Page No.
<b>FIG. 1</b>	<a href="#">Prevalence rates of smokers by age and sex</a>	<b>8</b>
<b>FIG. 2</b>	<a href="#">Building the FCTC Investment Case</a>	<b>12</b>
<b>FIG. 3</b>	<a href="#">Breakdown of the share of direct and indirect economic costs</a>	<b>15</b>
<b>FIG. 4</b>	<a href="#">Tobacco-attributable deaths by disease, 2017 (age 30+)</a>	<b>16</b>
<b>FIG. 5</b>	<a href="#">Tobacco-related economic losses over 15 years: What happens if Cabo Verde does nothing, versus if the Government implements tobacco measures to reduce demand for smoking?</a>	<b>17</b>
<b>FIG. 6</b>	<a href="#">Sources of annual economic savings from implementing the tobacco policy package</a>	<b>18</b>
<b>FIG. 7</b>	<a href="#">Private and public healthcare costs (and savings) over the 15-year time horizon</a>	<b>19</b>
<b>FIG. 8</b>	<a href="#">Building the FCTC Investment Case</a>	<b>25</b>
<b>TABLE 1</b>	<a href="#">Summary of the current state of FCTC demand measures in Cabo Verde, and target goals modelled in the Investment Case</a>	<b>10</b>
<b>TABLE 2</b>	<a href="#">Return on investment, by tobacco package</a>	<b>20</b>
<b>TABLE 3</b>	<a href="#">Return on Investment through the SDG era (2030), by tobacco policy/intervention (CVE millions)</a>	<b>22</b>
<b>TABLE 4</b>	<a href="#">Impact size: Relative reduction in the prevalence of current smoking by tobacco control policy/intervention</a>	<b>29</b>



# 1. Executive summary

The human and economic costs of tobacco use in Cabo Verde are high. Given the comparatively low levels of tobacco use prevalence in Cabo Verde, and the near complete absence of comprehensive tobacco control legislation, the threat of an increased burden of tobacco-related illnesses is real. This investment case report maps out the most effective tobacco control interventions to reduce that health and economic burden—and demonstrates how scaled-up action now will pay dividends in both the near- and long-term.

This investment case measures the costs and benefits—in health and economic terms—of implementing six priority tobacco control provisions, in line with the WHO FCTC and according to the stated priorities of the Government of Cabo Verde. These six tobacco control provisions are: (1) Increase tobacco taxation to reduce the affordability of tobacco products (*FCTC Article 6*); (2) Enforce bans on smoking in all public places to protect people from tobacco smoke (*FCTC Article 8*); (3) Mandate that tobacco products carry health warnings that cover 50 percent of packaging (*FCTC Article 11*); (4) Implement plain packaging (*FCTC Article: 11 Guidelines for Implementation*); (5) Increase the frequency and coverage of mass media campaigns (*FCTC Article 12*); and (6) Enact and enforce a comprehensive ban on all forms of tobacco advertising, promotion and sponsorship (*FCTC Article 13*). The investment case finds:

**In 2017, tobacco use cost the Cabo Verdean economy CVE 1.62 billion, equivalent to 1.06% of its GDP.**

Tobacco-related healthcare expenditures totaled CVE 122.4 million. In addition, the economy lost CVE 1.5 billion in indirect productivity costs due to tobacco-attributable premature mortality, disability, and workplace smoking.

By acting now to curb tobacco use, the government of Cabo Verde can reduce the health and economic burden of tobacco use. The investment case findings demonstrate that over the course of the next 15 years, enacting and enforcing six FCTC tobacco-control measures would:

**Avert CVE 6.9 billion in economic losses.**

This would include about CVE 6.4 billion in economic output losses averted. The tobacco-control measures stimulate economic growth by ensuring that fewer citizens 1) drop out of the workforce due to premature mortality, 2) miss days of work due to disability or sickness, and 3) work at a reduced capacity due to smoking.



**Lead to CVE 525.5 million in savings through avoidance of tobacco-attributable healthcare expenditures.**

By preventing the onset of cardiovascular disease, diabetes, respiratory infections, cancer, and other smoking-attributable diseases, the tobacco-control measures improve the health of the population, lowering demand for expensive medical care and treatment. Seventy-one percent of the healthcare savings accrue to government and 26 percent of those savings accrue to citizens in the form of lower out-of-pocket health-care costs.


**Save 574 lives and reduce the incidence of disease.**

Enacting the six FCTC tobacco-control measures would contribute to Cabo Verde's efforts to meet SDG Target 3.4 to reduce by one-third premature mortality from NCDs by 2030. Enacting the FCTC measures would prevent 201 premature deaths from the four main NCDs by 2030, the equivalent of about 7 percent of the needed reduction in premature mortality to fulfill SDG Target 3.4.

**Provide economic benefits (CVE 6.9 billion) that significantly outweigh the costs (CVE 840 million).**

Each of the WHO FCTC provisions is highly cost-effective. Increasing requirements for health warning labels has the highest return on investment (ROI) over the 15-year period: for every escudo spent on implementing increased warning label requirements, the Government can expect to receive 26 escudos in return. Enacting more stringent bans on advertising has the next highest ROI (19:1), followed by raising taxes (16:1), implementing smoke-free policies to protect people from tobacco smoke (15:1), implementing plain packaging of tobacco products (10:1), and anti-tobacco mass media campaigns (10:1).

The FCTC Investment Case results for Cabo Verde show that there is an evidence-based opportunity to reduce the health, economic and other development burdens of tobacco through preventative actions that target tobacco use. By investing now in tobacco control measures, Cabo Verde can accelerate its efforts towards achieving the Sustainable Development Goals.



The report recommends concrete actions the Government of Cabo Verde can take to strengthen a whole-of-government approach to tobacco and its development consequences. Through the FCTC 2030 Project, the FCTC Secretariat, UNDP and WHO stand ready to support the Government of Cabo Verde to reduce the social, economic and environmental burdens that tobacco continues to place on its country.

*Credit: © Rey Perezoso/World Bank via Flickr*







## 2. Introduction

Tobacco is one of the world's leading health threats, and a main risk factor for non-communicable diseases (NCDs) including: cancers, diabetes, chronic respiratory disease and cardiovascular disease. In Cabo Verde, 9.3 percent of adults use some form of tobacco.<sup>1</sup> Tobacco use in Cabo Verde kills approximately 104 citizens per year, with 60 percent of deaths occurring under age 70.<sup>2</sup>

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

Tobacco use displaces household expenditure on basic needs, including food and education,<sup>7,8,9</sup> and can push families into poverty and hunger.<sup>10,11</sup> It imposes health and socio-economic challenges on the poor, women, youth and other vulnerable populations. Meanwhile, tobacco production causes environmental damage including deforestation, soil degradation, water pollution and non-biodegradable waste generation.<sup>12,13,14</sup> Given the far-reaching development impacts of tobacco, effective tobacco control requires the engagement of non-health sectors within the context of a whole-of-government approach.







In April 2005 Cabo Verde signed the WHO Framework Convention on Tobacco Control (WHO FCTC) and ratified the treaty.<sup>15</sup> As of 2017, Cabo Verde has made some progress toward fulfilling FCTC obligations, including passage of the Law No. 119/IV/95, which 1) bans most forms of tobacco advertisement, and; 2) mandates some smoke-free workplaces and bans smoking on public transportation.

By legislating and funding these important measures, Cabo Verde has set the stage for curbing the tobacco epidemic. Further intensifying existing policies and implementing new measures can draw the tobacco use prevalence curve further downward and generate additional health and economic gains. For example, opportunities exist in Cabo Verde to implement a ban on advertising and sponsorship at the point of sale, and to mandate smoke free indoor offices, casinos, prisons, and hotels. Additional opportunities include mandating warning labels on tobacco products, and plain packaging. Realizing the benefits of such measures depends on concerted and coordinated efforts from multiple sectors of government as well as high-level leadership and an informed public.

---

Given these considerations, a joint programming mission to Cabo Verde was undertaken to conduct an investment case as part of the FCTC 2030 project. The FCTC 2030 Project is a global initiative funded by the UK Government to support countries to strengthen FCTC implementation to achieve the Sustainable Development Goals (SDGs). Cabo Verde is one of just 15 countries worldwide receiving this dedicated project support.

An investment case analyses the health and economic costs of tobacco use as well as the potential gains from scaled up implementation of FCTC measures. It identifies which FCTC demand-reduction measures can produce the largest health and economic returns for Cabo Verde (the return on investment; ROI). In consultation with the Ministry of Health, six tobacco control provisions were selected to model in the investment case.

- 
**1 Increase tobacco taxation to reduce the affordability of tobacco products.** (*WHO FCTC Article 6*)
- 
**2 Implement and enforce bans on smoking in all public places to protect people from tobacco smoke.** (*WHO FCTC Article 8*)
- 
**3 Mandate that tobacco products carry health warnings that cover 50 percent of the packaging.** (*FCTC Article 11*)
- 
**4 Implement plain packaging.** (*FCTC Article 11, in accordance with COP Guidelines*)
- 
**5 Increase the frequency and coverage of mass media campaigns.** (*FCTC Article 12*)
- 
**6 Enact and enforce a comprehensive ban on all forms of tobacco advertising, promotion and sponsorship.** (*FCTC Article 13*)

This report proceeds in four sections. **Section 3** provides an overview of tobacco control in Cabo Verde, including a discussion of tobacco use prevalence as well as challenges and opportunities. **Section 4** summarizes the methodology of the investment case (see *Annex* and *Technical Appendix*<sup>i</sup> for more detail), and **Section 5** reports the main findings of the economic analysis. The report concludes under **Section 6** with a set of recommendations.

<sup>i</sup> Available upon request

## 3. Tobacco control in Cabo Verde: status and context

Cabo Verde has made progress in tobacco control in recent years, but more needs to be done to protect current and future populations.

The legislative environment for tobacco control in Cabo Verde is lacking. There is currently no law against tobacco sales to or by minors. Nor are there restrictions on sales of single cigarette sticks. Smoking is prohibited in schools, healthcare facilities and public transport, but not restaurants, bars, hotels or other workplaces. Warning labels on tobacco product packages are text only, too small to read, and cover only 25 percent of the front and back.

And yet smoking prevalence in Cabo Verde is low. Social de-normalization of smoking is very strong. The near monopoly by domestic cigarette manufacturers limits tobacco industry reach into policy making.

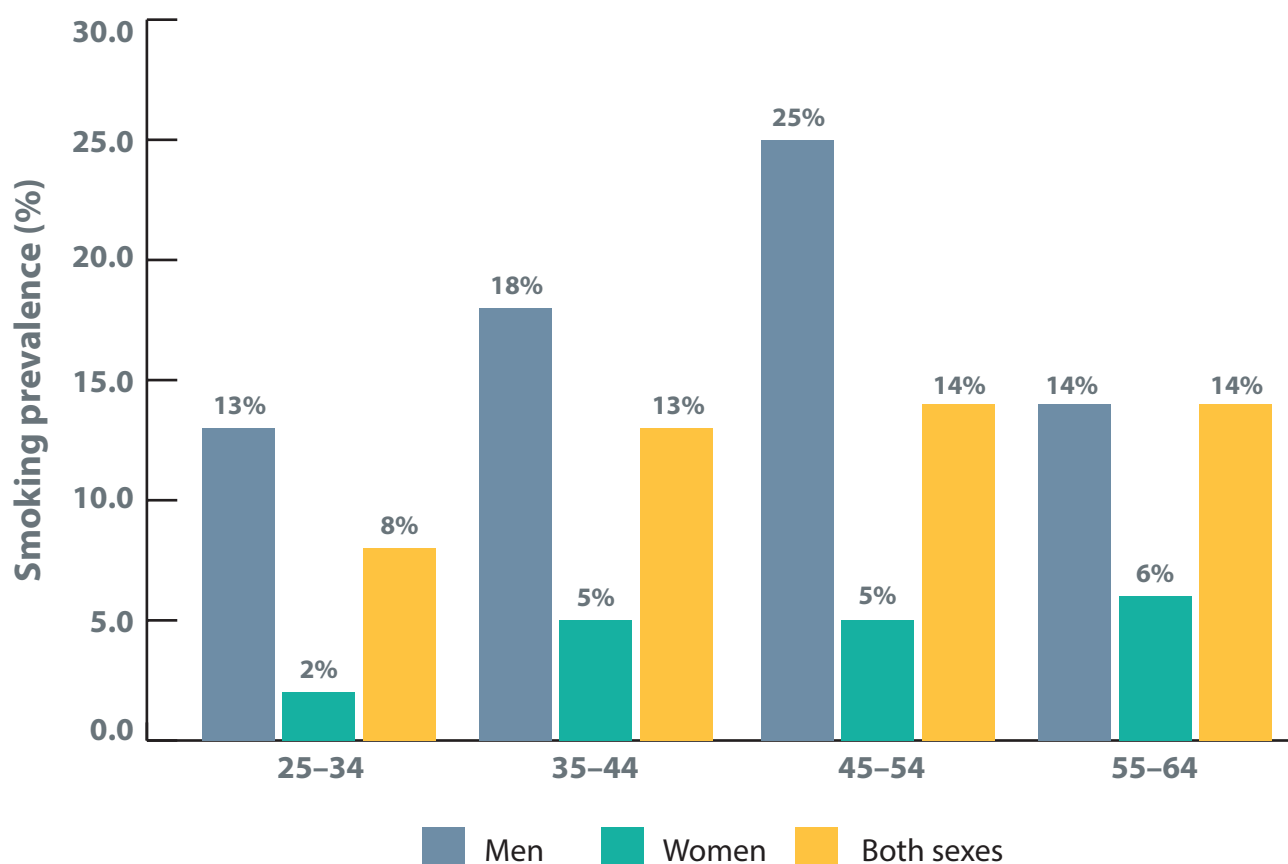
If the evident commitment by the Government of Cabo Verde to put into practice a proper tobacco control law is seen through, the low rates of tobacco use prevalence have a much better chance of staying low.

This section explores some of the main tobacco control issues in Cabo Verde, relying on both the literature and in-country discussions with key stakeholders.

### 3.1 Tobacco use prevalence, social norms, and awareness

In Cabo Verde, 9.3 percent of adults age 15 and up use some form of tobacco,<sup>16</sup> 77 percent of whom smoke daily. On average, Cabo Verdeans begin smoking around 19.5 years of age.<sup>17</sup>

Adult smoking prevalence is higher among men than women in Cabo Verde. Males also smoke more intensely than females. Men who smoke average 19.4 cigarettes per day, while women who smoke average 5.6 cigarettes per day.<sup>18</sup> Women have a slightly higher prevalence rate of using smokeless tobacco (5.8 percent) compared to men (3.5 percent).<sup>19, 20</sup> The prevalence of smoking increases with age among both men and women (see **Figure 1**).<sup>21</sup>

**Fig. 1: Prevalence rates of smokers by age and sex**

According to the 2007 Cabo Verde Global Youth Tobacco Survey (GYTS), 10.2 percent of youth (13 to 15 years old) report ever having smoked a cigarette (12.3 percent of boys and 7.8 percent of girls).<sup>22</sup> 13.4 percent of students reported using a tobacco product (14.7 percent boys and 11.7 percent girls) and 3.5 percent reported that they were currently smoking (3.7 percent boys and 3.1 percent girls).<sup>23</sup>

### 3.2 Tobacco control regulatory measures

Strong fiscal and regulatory measures can powerfully influence norms by signalling to the population that smoking is harmful. Cabo Verde already has some tobacco policies in place to reduce demand for tobacco products and protect the health of its population. Law No. 119/IV/95 bans smoking on public transportation. It also requires “no smoking” signs in public places, and bans many direct and indirect forms of tobacco advertisements.<sup>24</sup>





### Tax System

Cabo Verde levies **taxes** equivalent to 11.2 percent<sup>25</sup> of the retail price of the most sold brand of cigarettes. The tax structure is composed of an ad valorem tax, value added tax (VAT), and small Economic Community of West African States (ECOWAS) Tax.<sup>26</sup> Raising taxes to represent 75 percent of the retail price of cigarettes and ensuring uniform taxation across all tobacco products represent opportunities to lower smoking prevalence and increase government revenue.



### Smoking Ban in Public Places

Cabo Verde has not yet enacted a **ban on smoking in all public places**. Currently, smoking is completely banned on public transportation, healthcare facilities, educational and childcare facilities, places frequented by minors, entertainment halls, covered sports halls, and other public places of assembly.<sup>27, 28</sup> It is not banned in other public spaces or workplaces. About 24 percent of boys and girls age 13 to 15 report being exposed to second hand smoke in public in the past 30 days.<sup>29</sup>



### Warning Labels and Packaging

Cabo Verde requires cigarette packaging to carry text messages that warn customers that tobacco kills. However, large **warning labels** containing graphic depictions of the harms of tobacco use have not been implemented.<sup>30</sup> **Plain packaging**—packaging with neutral colors, without branding and logos—is currently not regulated. A law requiring plain packaging would offer Cabo Verde another tool to reduce the tobacco companies' opportunities to market products.



### Tobacco Advertising, Promotion and Sponsorship

Cabo Verde bans various forms of **tobacco advertising, promotion, and sponsorship (TAPS)**, including direct advertising on major forms of media (e.g., TV, radio, print media, billboards, internet, outdoor advertising). Some indirect forms of advertising are also banned; however, current laws enable many forms of promotion and sponsorship, including free distribution of tobacco products.



### Anti-tobacco Mass Media Campaigns

The Government has not implemented targeted and sustained **anti-tobacco mass media campaigns**. Recent awareness efforts include sponsored events for “World No Tobacco Day”, during which the Ministry of Health (MOH) along with the WHO presented the National Strategic Plan. In addition, workshops were held around the country; health risks associated with tobacco were discussed on TV, and; anti-tobacco aerobics and physical activity classes were held—Dança Sem Tabacco (Dance without Tobacco).<sup>31</sup>

**Table 1** summarizes the existing state of FCTC demand-reduction provisions that are analyzed in the investment case and compares them against the FCTC target goals for each measure. Where Cabo Verde has not yet met the FCTC target goal, the investment case analyzes the impact that reaching that goal would have on tobacco consumption, population health, and the economy.

**Table 1: Summary of the current state of FCTC demand measures in Cabo Verde, and target goals modelled in the Investment Case**

Tobacco Policy	Baseline	Target
<b>Increase tobacco taxation to reduce the affordability of tobacco products.</b> (FCTC Article 6)	Tax share = 11.2% <sup>32</sup> of the retail price of an average priced pack of cigarettes.	Scale up taxes to 75% of the retail price, with regular increases to outpace inflation and income growth.
<b>Implement and enforce bans on smoking in all public places to protect people from tobacco smoke.</b> (FCTC Article 8)	Smoking is banned in schools, health facilities and on public transit, but allowed in most other public places. <sup>33</sup>	Extend the existing law to include all public places, and enforce to ensure compliance.
<b>Mandate that tobacco products and packaging carry large graphic health warnings describing the harmful effects of tobacco use.</b> (FCTC Article 11)	Only textual health warnings are mandated on cigarette packets.	Mandate large graphic warning labels that cover at least 50% of tobacco packaging.
<b>Mandate plain packaging of all tobacco products.</b> (FCTC Article 11)	Plain packaging of tobacco products is not mandated.	Implement a law requiring plain packaging.

Tobacco Policy	Baseline	Target
<b>Promote and strengthen public awareness about tobacco control issues and the harms of tobacco use through mass media information campaigns.</b> (FCTC Article 12)	No long-term, national-scale mass media campaigns have been implemented.	Implement consistent, national-scale public-awareness campaigns.
<b>Enact and enforce a comprehensive ban on all forms of tobacco advertising promotion and sponsorship.</b> (FCTC Article 13)	Advertising is banned on major forms of media (TV, radio, internet, billboards, print), and some indirect forms of promotion and sponsorship are banned.	Ban product display at point-of-sale and other indirect forms of promotion and sponsorship.
* Information in this table is derived from the WHO Report on the Global Tobacco Epidemic: Country profile – Cabo Verde.		

### 3.3 National coordination, strategy, and planning

In line with Article 5 of the WHO FCTC (General Obligations) the Government of Cabo Verde has been working to strengthen tobacco control governance. Efforts to establish a multisectoral national tobacco control coordination mechanism have been supported by Brazil and the WHO FCTC Secretariat. The national tobacco control strategy and action plan was recently drafted. The process benefited from the meaningful input of all relevant sectors and the resulting action plan is time bound and costed, putting Cabo Verde a step ahead of many of its peers.

## 4. Methodology

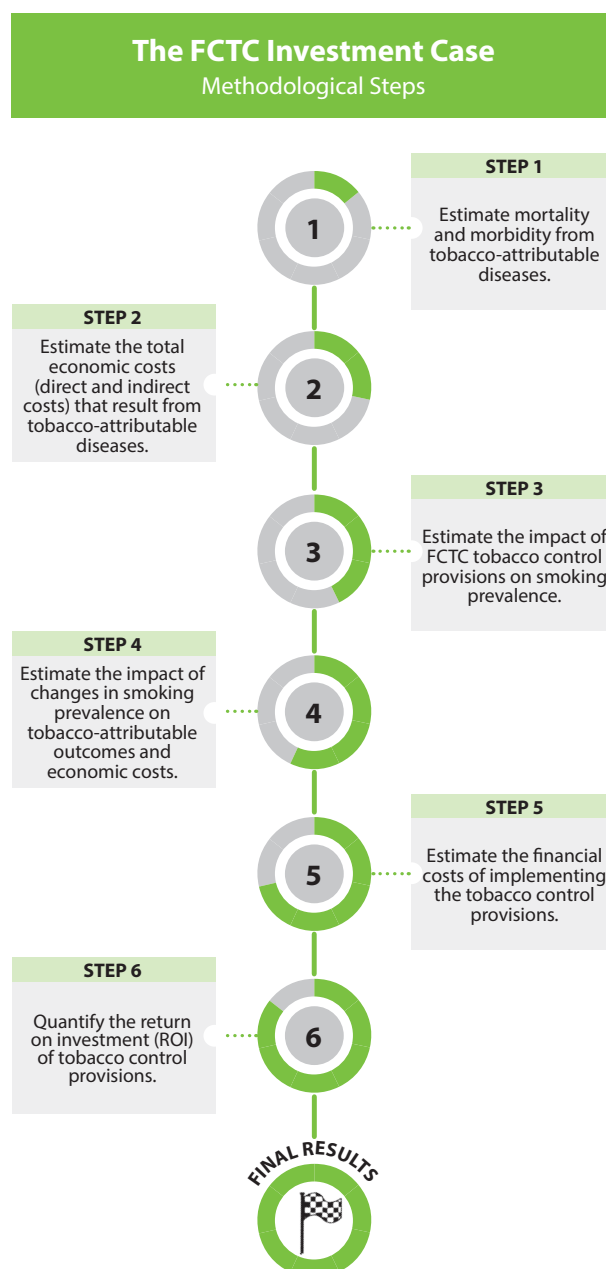
The purpose of the FCTC investment case is to quantify the current health and economic burden of tobacco use in Cabo Verde, and to estimate the impact that implementing tobacco measures would have on reducing the burden.

An RTI International-developed model was used to conduct the investment case and perform the methodological steps in **Figure 2**. The tools and methods used to perform these steps are described in this report's Annex. Interested readers are also referred to this report's separate Technical Appendix for a more thorough account of the methodology.

The FCTC Investment Case team worked with partners in Cabo Verde to collect national data inputs for the model. Where data was unavailable from government or other in-country sources, the team utilized publicly available national, regional, and global data from sources such as the World Health Organization (WHO), World Bank database, Global Burden of Disease (GBD) study, and academic literature.

Within the investment case, costs and monetized benefits are reported in constant 2017 Cabo Verde escudos, and discounted at a rate of three percent.

**Fig. 2: Building the FCTC Investment Case**



## 5. Results

### 5.1 The current burden of tobacco use: health and economic costs<sup>ii</sup>

Tobacco use undermines economic growth. In 2017, tobacco use caused 104 deaths in Cabo Verde, 60 percent of which occurred among citizens under the age 70.<sup>34</sup> As a result, Cabo Verde lost productive years in which those individuals would have contributed to the workforce. The economic losses in 2017 due to tobacco-related premature mortality are estimated at CVE 433.5 million.

While the costs of premature mortality are high, the consequences of tobacco use begin long before death. As individuals begin to 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 CVE 86.7 million in 2017 and caused Cabo Verdean citizens to spend CVE 31.7 million in out-of-pocket (OOP) healthcare expenditures. In total, smoking generated CVE 122.4 million in healthcare expenditures.

In addition to generating healthcare costs, as individuals become sick, they are more likely to miss days of work (absenteeism) or to be less productive at work (presenteeism). In 2017, the costs of excess absenteeism due to tobacco-related illness were CVE 173.2 million and the costs of excess presenteeism due to cigarette smoking were CVE 520.5 million.

Finally, even in their healthy years, working smokers are less productive than non-smokers. Smokers take at least ten minutes per day more in breaks than non-smoking employees.<sup>35</sup> If ten minutes of time is valued at the average worker's salary, the compounding impact of 20,919 employed daily smokers taking ten minutes per day for smoke breaks is equivalent to losing CVE 368.7 million in productive output annually.

In total, tobacco use cost Cabo Verde's economy CVE 1.62 billion<sup>iii</sup> in 2017, equivalent to about 1.06 percent of Cabo Verde's GDP that year. **Figure 3** breaks down direct and indirect costs. **Figure 4** illustrates the annual health losses that occur due to tobacco use.

---

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

<sup>iii</sup> Component parts may not add up exactly to 1.62 billion due to rounding.

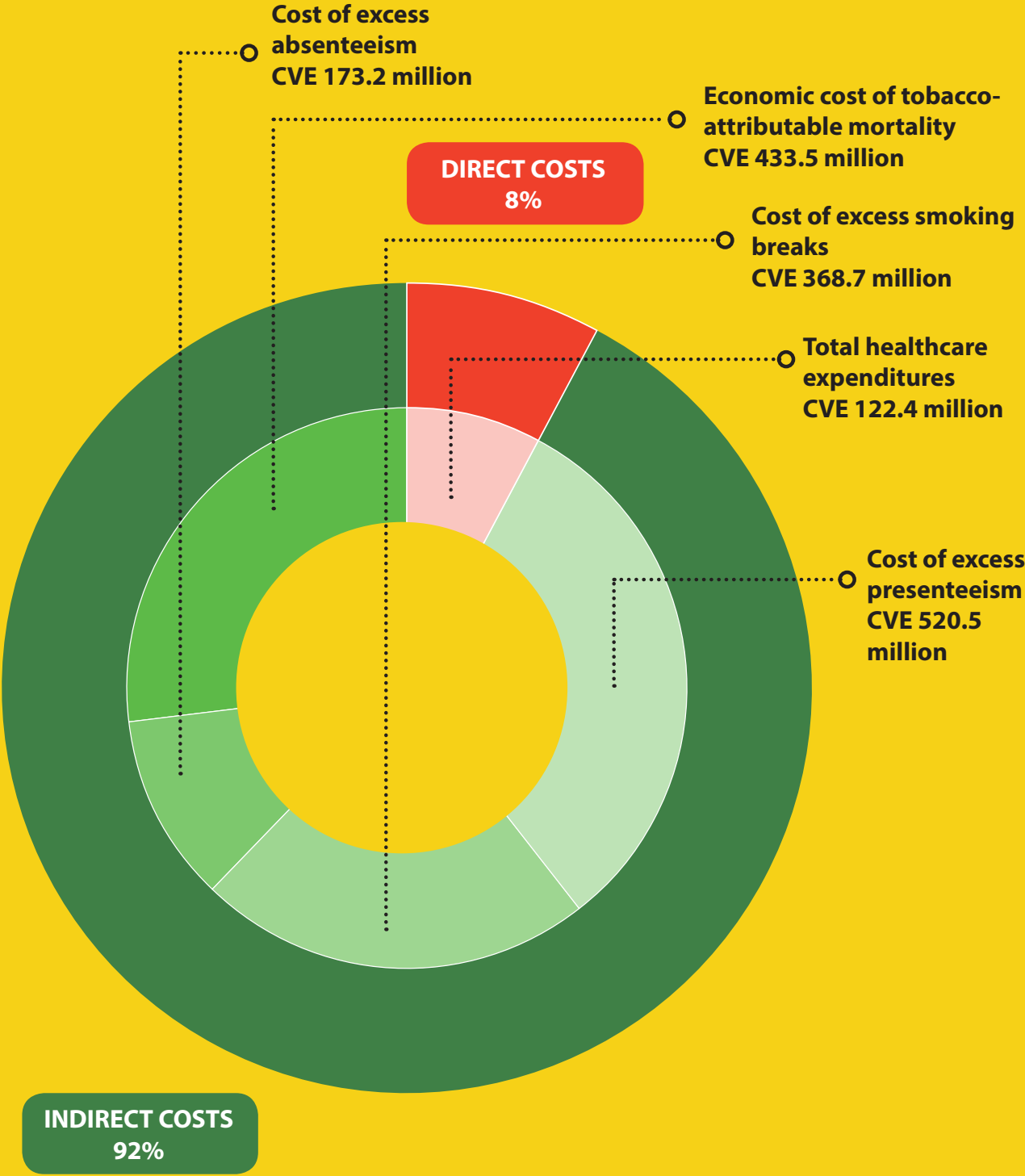




Credit: © Rey Perezoso/World Bank via Flickr

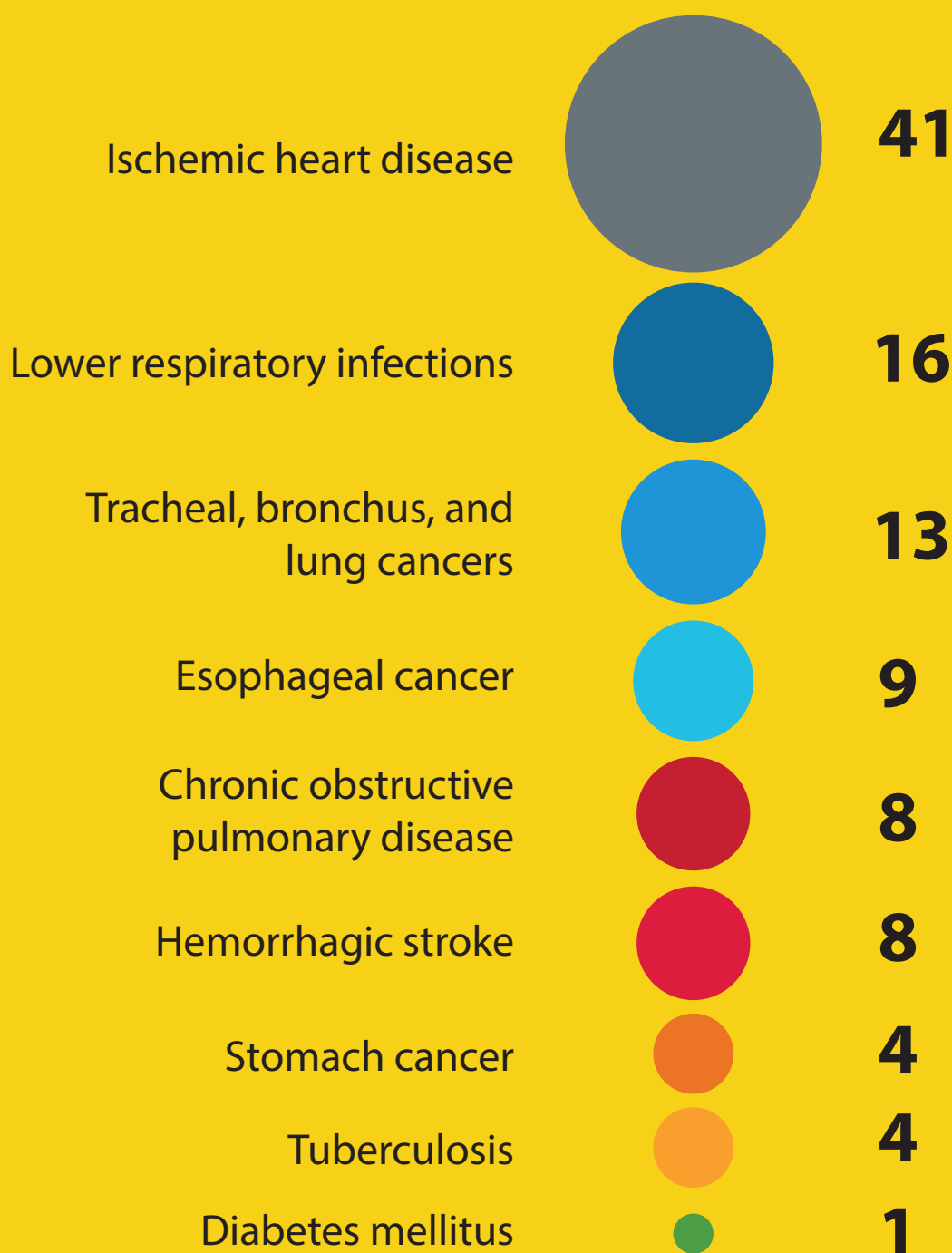
# The current burden of tobacco use

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





**Fig. 4: Tobacco-attributable deaths by disease, 2017 (age 30+).** (Results are based on the IHME Global Burden of Disease Results Tool and scaled upward based on country input. Other diseases include tuberculosis, asthma, hypertensive heart disease, lip and oral cavity cancer, esophageal cancer, larynx cancer, liver cancer, other cardiovascular and circulatory diseases, peptic ulcer disease, pancreatic cancer, nasopharynx cancer, bladder cancer, leukemia, aortic aneurysm, atrial fibrillation and flutter, kidney cancer, other chronic respiratory diseases, peripheral artery disease, and rheumatoid arthritis.)



## 5.2 Implementing policy measures that reduce the burden of tobacco use

By implementing new WHO FCTC policy measures, or intensifying existing ones, Cabo Verde can secure significant health and economic returns, and begin to reduce the CVE 1.62 billion in annual direct and indirect economic losses that occur due to tobacco use.

This section presents the health and economic benefits that result from individual policy actions to: 1) increase tobacco taxation to reduce the affordability of tobacco products; 2) expand the ban on smoking in public places to include all public spaces, and increase compliance with the law; 3) run national anti-tobacco mass media campaigns to increase awareness about the harms of tobacco use; 4) enact a comprehensive ban on tobacco advertising, promotion and sponsorship; 5) implement plain packaging of tobacco products, and; 6) mandate that tobacco product packages carry large health warnings describing the harmful effects of tobacco use.

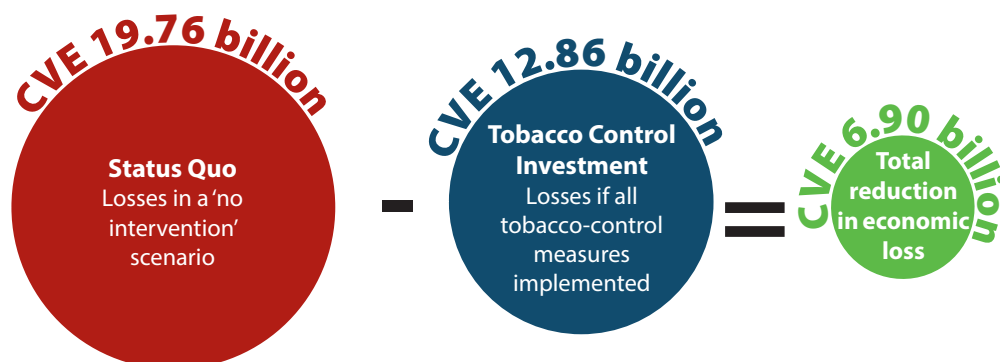
### 5.2.1 Health benefits—Lives saved

Enacting the tobacco policy package (inclusive of all the 6 provisions listed above) would lower the prevalence of cigarette smoking, leading to substantial health gains. Specifically, enacting the package would reduce the prevalence of cigarette smoking by 63.2 percent over 15 years, saving 574 lives from 2019–2033, or 38 lives annually.

### 5.2.2 Economic benefits

Implementing the tobacco policy package would result in Cabo Verde avoiding 35 percent of the economic losses that it is expected to incur from smoking over the next 15 years. **Figure 5** illustrates the extent to which Cabo Verde can shrink the economic losses that it is expected to incur under the status quo response.

**Fig. 5: Tobacco-related economic losses over 15 years: What happens if Cabo Verde does nothing, versus if the Government implements tobacco measures to reduce demand for smoking?**

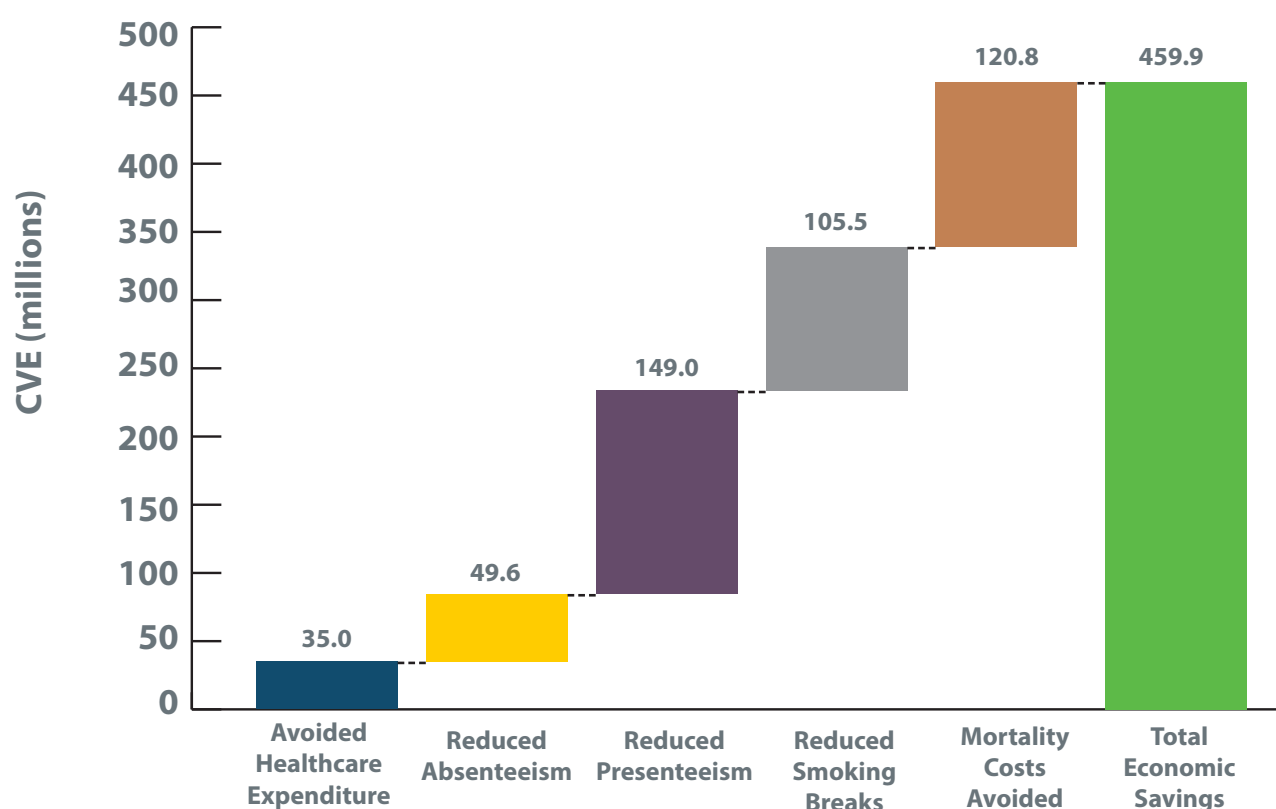


**In total, over 15 years Cabo Verde would save about CVE 6.90 billion** that would otherwise be lost if it does not implement the package of tobacco control measures. That is equivalent to about CVE 460 million in annual avoided economic losses.

The avoided economic losses derive from lowering direct and indirect costs of tobacco use. With better health, fewer individuals need to be treated for complications from disease, resulting in direct cost savings to the government. In addition, better health leads to increased worker productivity. Fewer working-age individuals leave the workforce prematurely due to death. Laborers miss fewer days of work (absenteeism) and are less hindered by health complications while at work (presenteeism). Finally, because the prevalence of smoking declines, fewer individuals take smoke breaks in the workplace.

**Figure 6** breaks down the sources from which annual savings accrue. The largest annual savings result from avoiding reduced presenteeism (CVE 149 million). The next highest source of annual savings is averted mortality costs (CVE 120.8 million), followed by reduced numbers of smoking breaks (CVE 105.5 million), reduced absenteeism (CVE 49.6 million), and avoided healthcare expenditures (CVE 35 million).

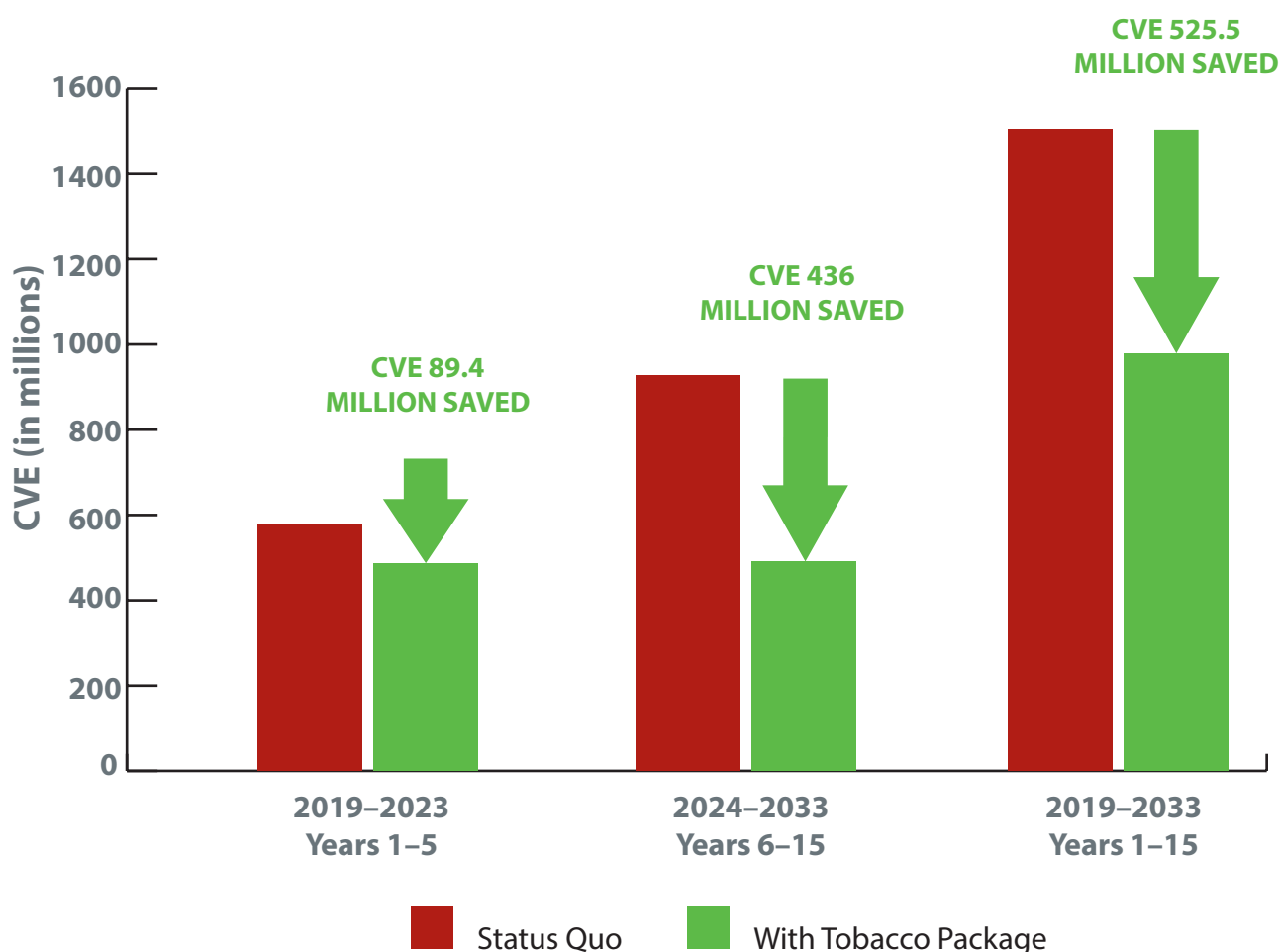
**Fig. 6: Sources of annual economic savings from implementing the tobacco policy package**



Implementing the package of tobacco control measures reduces medical expenditure for citizens and the Government. Presently, total private and public annual health care expenditures in Cabo Verde is about CVE 8.16 billion,<sup>36</sup> of which an estimated 1.5 percent is directly related to treating disease and illness due to tobacco use ( $\approx$  CVE 122.4 million).

Year-over-year, the package of interventions lowers smoking prevalence, which leads to less illness, and consequently less healthcare expenditure. Over the time horizon of the analysis, the package of interventions averts CVE 525.5 million in healthcare expenditures, or about CVE 35 million annually (see **Figure 7**), with 71 percent of those savings accruing to Government and 26 percent to individual citizens who would have paid out-of-pocket for healthcare. Thus, from the reduced healthcare costs alone, the Government stands to save about CVE 372.4 million over 15 years. Simultaneously, the Government would successfully reduce the health expenditure burden tobacco imposes on Cabo Verde's citizens, supporting efforts to reduce economic hardship on families. Rather than spend on treating avoidable disease, these families would be able to invest more in nutrition, education and other inputs to secure a better future.

**Fig. 7: Private and public healthcare costs (and savings) over the 15-year time horizon**



### 5.2.3 The return on investment

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

**Table 2** displays costs, benefits and ROIs by intervention, as well as for all interventions combined. All individual interventions deliver a positive ROI within the first five years, meaning that even short-term results would be achieved. Depending on the intervention, over the first five years, the Government will recoup anywhere from 3 to 7 times its investment. The ROIs for each intervention continue to grow over time, reflective of the increasing effectiveness of policy measures as they move from planning and development stages, to full implementation.

**Table 2: Return on investment, by tobacco package (CVE millions)**

	First 5 years (2019–2023)			All 15 years (2019–2033)		
	Total Costs (CVE millions)	Net Benefits (CVE millions)	ROI	Total Costs (CVE millions)	Net Benefits (CVE millions)	ROI
<b>Tobacco Package*</b> ( <i>all policies/ interventions implemented simultaneously</i> )	380	1,174	<b>3</b>	840	6,899	<b>8</b>
<b>Raise taxes</b> ( <i>FCTC Article 6</i> )	73	364	<b>5</b>	158	2,548	<b>16</b>
<b>Protect people from tobacco smoke</b> ( <i>FCTC Article 8</i> )	73	265	<b>4</b>	138	2,030	<b>15</b>
<b>Warning labels</b> ( <i>FCTC Article 11</i> )	41	274	<b>7</b>	80	2,090	<b>26</b>
<b>Plain packaging</b> ( <i>FCTC Article 11</i> )	41	104	<b>3</b>	80	813	<b>10</b>
<b>Mass media campaign</b> ( <i>FCTC Article 12</i> )	71	260	<b>4</b>	205	1,993	<b>10</b>
<b>Bans on advertising</b> ( <i>FCTC Article 13</i> )	42	206	<b>5</b>	84	1,591	<b>19</b>

\* 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  $PR_j$ ,  $(1-PR_i) \times (1-PR_j)$  [is] applied to the current smoking prevalence [<sup>37</sup>, p. 454].

Over the 15-year period, graphic warning labels are expected to have the highest return on investment: for every Cabo Verde escudo invested in tobacco control, one can expect to see 26 escudos in economic benefits in return. Bans on advertising has the next highest ROI (19:1), followed by raising taxes (16:1), protecting people from tobacco smoke (15:1), plain packaging (10:1), and implementing a mass media campaign (10:1). The higher ROIs for fiscal and regulatory measures, relative to the lower ROI for awareness-raising, demonstrates the impact of fiscal and regulatory measures for health and development.

#### *5.2.4 Tobacco control as an accelerator for the SDGs*

Enacting six measures<sup>iv</sup> designed to reduce demand for tobacco will enable Cabo Verde to fulfill SDG Target 3.a to strengthen the implementation of the WHO FCTC. Moreover, taking action now will contribute to Cabo Verde's efforts to meet SDG Target 3.4 to reduce by one-third premature mortality from NCDs by 2030. These health benefits will support sustainable development more broadly in Cabo Verde, including reduction of poverty and inequalities (SDGs 1 and 10, respectively), as well as advancing economic growth (SDG 8).

In Cabo Verde in 2017, 591 premature deaths between the ages of 30 to 69 were caused by the four main NCDs (cardiovascular disease, diabetes, cancers, and chronic lung diseases). Roughly 18 percent of these premature deaths occurred due to tobacco use.

Enacting the WHO FCTC measures identified in the Investment Case would reduce tobacco use prevalence—a key risk factor driving NCD incidence—preventing 201 premature deaths from the four main NCDs over the next 12 years (2019 to 2030). Preventing those deaths contributes the equivalent of about 7 percent of the needed reduction in premature mortality to fulfill SDG Target 3.4.

---

<sup>iv</sup> Increasing tobacco taxation to reduce the affordability of tobacco products; implementing and enforcing bans on smoking in all public places to protect people from tobacco smoke; mandating that tobacco products and packaging carry large graphic health warning describing the harmful effects of tobacco use; mandating plain packaging of all tobacco products; promoting public awareness about tobacco control issues and the harms of tobacco use through mass media; and, enacting a comprehensive ban on all forms of tobacco advertising, sponsorship, and promotion.

---



## SDG Target 3.A

**By 2030  
the FCTC  
measures  
would...**



**Lower the prevalence of tobacco use** by over three-fifths from present day levels.

**Reduce economic costs** due to tobacco use by CVE 5.3 billion, including saving more than CVE 404 million in healthcare expenditures.

**Lead to savings** that significantly outweigh the costs (see **Table 3**).

**Table 3: Return on Investment through the SDG era (2030), by tobacco policy/intervention (CVE millions)**

	Total Costs	Net Benefits	ROI
<b>Tobacco Package</b> ( <i>all policies/interventions implemented simultaneously</i> )	<b>CVE 719 million</b>	<b>CVE 5,300 million</b>	<b>7</b>
<b>Warning labels</b> (FCTC Article 11)	CVE 70 million	CVE 1,582 million	23
<b>Bans on advertising</b> (FCTC Article 13)	CVE 73 million	CVE 1,203 million	17
<b>Raise Taxes</b> (FCTC Article 6)	CVE 136 million	CVE 1,859 million	14
<b>Protect people from tobacco smoke</b> (FCTC Article 8)	CVE 121 million	CVE 1,536 million	13
<b>Mass media campaigns</b> (FCTC Article 12)	CVE 169 million	CVE 1,508 million	9
<b>Plain packaging</b> (FCTC Article 11, in accordance with COP Guidelines for Implementation)	CVE 70 million	CVE 614 million	9



## 6. Conclusion and recommendations

Each year, tobacco use costs Cabo Verde CVE 1.62 billion in economic losses and erases critical human development gains. Fortunately, the investment case shows that there is an opportunity to reduce the social and economic burden of tobacco in Cabo Verde. Enacting the recommended multisectoral tobacco control provisions would save lives each year and reduce the incidence of disease, leading to savings from averted medical costs and averted productivity losses. In economic terms, these benefits are substantial, adding up to 1.06 percent of GDP in 2017 and CVE 19.76 billion over the next 15 years. Further, the economic benefits of strengthening tobacco control measures in Cabo Verde and implementing new ones greatly outweigh the costs of implementing them (CVE 6.9 billion in benefits versus just CVE 0.84 billion in costs).



### **Adopt comprehensive tobacco control legislation**

---

Although Cabo Verde has made great progress in tobacco control, the lack of comprehensive tobacco control legislation is the most glaring weakness of the national response. In many ways Cabo Verde can consider itself fortunate that tobacco use and its accompanying health impacts are not more widespread. As smoking prevalence levels drop in developed economies, countries like Cabo Verde will increasingly come under the attention of the multinational tobacco corporations. Adoption and implementation of a comprehensive tobacco control bill—one that features the interventions modeled in this investment case—is the most effective way to preserve Cabo Verde's low levels of tobacco use prevalence.



### **Raise tobacco (smoked & smokeless) taxes to reduce the affordability of tobacco products**

---

Tobacco tax levels are notably low in Cabo Verde, where taxes equal only 11.2 percent of the retail price of the most sold brand of cigarettes, far below the WHO recommended level (70 percent of retail price). Increasing taxes on tobacco products to reduce their affordability would achieve the mutually reinforcing objectives of reducing tobacco consumption (and thus improving health outcomes) and providing the public sector with additional revenue needed to invest in other sustainable development efforts. There is promising alignment in the intentions of both the finance and health ministries to increase tobacco taxation and to simplify the tax structure, phasing out the ad valorem tax in favour of a specific excise tax that increases regularly and increases above the rate of inflation.



## Engage the tourism sector as a leader in tobacco control

Tourism accounts for more than one-quarter of Cabo Verde's GDP. That large share makes engaging stakeholders involved in tourism, including the Ministry of Tourism, private sector entities, and the tourists themselves critical to ensuring effective compliance with tobacco control laws and policies. Cabo Verde is fortunate that the tourism ministry is positively disposed towards strengthened tobacco control. This makes economic sense for their sector as well. A recent survey in the United States found that 97 percent of all hotel rooms are non-smoking rooms, and the majority of tourists visiting Cabo Verde come from countries with stronger regulations against smoking in public. This means that tourists to Cabo Verde will know how to comply with smoke-free legislation and are likely to support such policies.



*Credit: © Alain LM/ World Bank via Flickr*

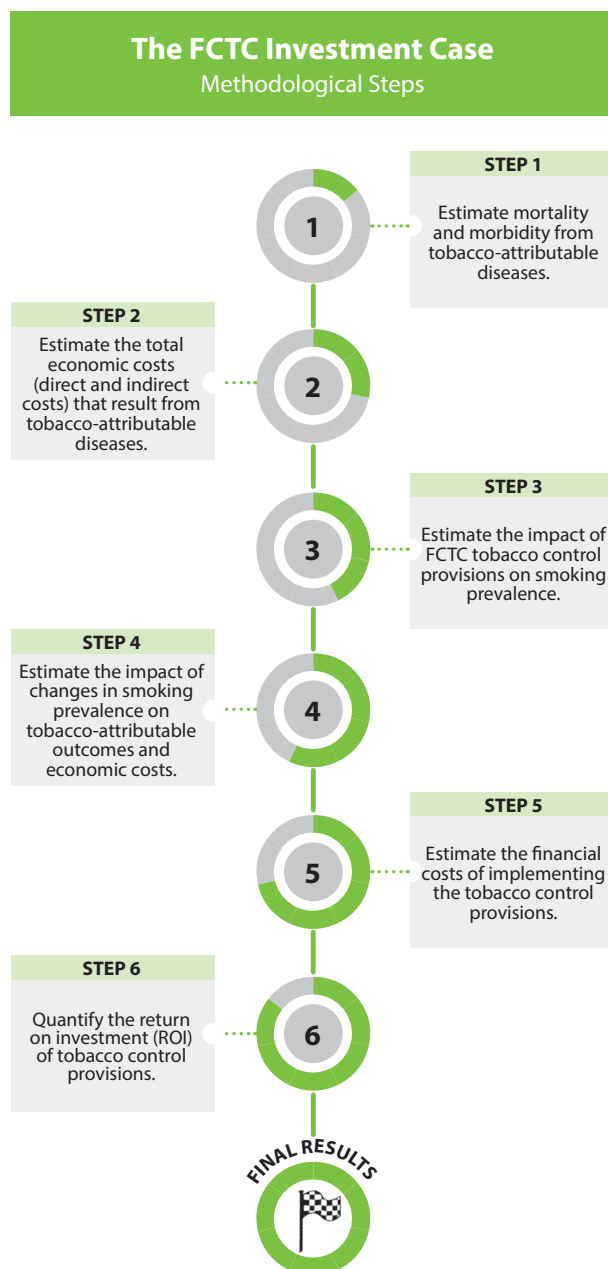
## 7. Methodology annex

The purpose of the FCTC Investment Case is to quantify the current health and economic burden of tobacco use in Cabo Verde and estimate the impact that implementing tobacco measures would have on reducing the burden.

A RTI International-developed model was developed to conduct the investment case, and perform the methodological steps in **Figure 8**. The tools and methods used to perform these steps are described below. Interested readers are also referred to this report's separate Technical Appendix for a more thorough account of the methodology. The FCTC Investment Case team worked with partners in Cabo Verde to collect national data inputs for the model. Where data was unavailable from government or other in-country sources, the team utilized publicly available national, regional, and global data from sources such as the World Health Organization (WHO), World Bank database, Global Burden of Disease (GBD) study, and academic literature.

Within the investment case, costs and monetized benefits are reported in constant 2017 Cabo Verde escudos, and discounted at a rate of three percent.

**Fig. 8: Building the FCTC Investment Case**



7.1 Overview

The economic analysis consists of two components: 1) assessing the current burden of tobacco use and 2) examining the extent to which FCTC provisions can reduce the burden. The first two methodological steps depicted in Figure 8 are employed to assess the current burden of tobacco use, while methodological steps 3–6 assess the costs and benefits of implementing or intensifying FCTC provisions to reduce demand for tobacco. The tools and methods used to perform these methodological steps are described in detail below.

7.2 COMPONENT ONE:  
CURRENT BURDEN

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



STEP 1

Estimate mortality and morbidity from tobacco-attributable diseases.

The investment case model is populated with country-specific data on tobacco attributable mortality and morbidity from the 2017 Global Burden of Disease Study (GBD).<sup>38</sup> The study estimates the extent to which smoking and exposure to second-hand smoke contribute to the incidence of 31 diseases, healthy life years lost, and deaths, across 195 countries.



STEP 2

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

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

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

**Direct costs** – Direct costs include both tobacco-attributable public (government-paid), private (insurance, individual out-of-pocket), and other healthcare expenditures. The proportion of healthcare costs attributable to smoking was obtained from Goodchild and colleagues (2018), who estimated tobacco to account for 8.5 percent of all healthcare expenditures in Cabo Verde.<sup>39</sup>

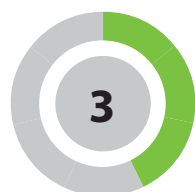
**Indirect costs** – Indirect costs represent the monetized value of lost time, productive capacity, or quality of life as a result of tobacco-related diseases. Indirect costs accrue when tobacco use causes premature death, eliminating the unique economic and social contributions that an individual would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

- *The economic cost of premature mortality due to tobacco use* – Premature mortality is valued using the human capital approach, which places an economic value on each year of life lost. Using GBD data on the age at which tobacco-attributable deaths occur, the model calculates the total number of years of life lost due to tobacco, across the population. Each year of life is valued at 1.4 times GDP per Capita, following the “full income approach” employed by Jamison et al (2013).<sup>40</sup>
- *Productivity costs* – Productivity costs consist of costs due to absenteeism, presenteeism, and excess work breaks due to smoking. The model incorporates estimates from academic literature on the number of extra working days missed due to active smoking (2.6 days per year).<sup>41</sup> Presenteeism losses are obtained similarly, under research that shows that smokers in China, the US, and five European countries experience about 22% more impairment at work because of health problems compared to never-smokers.<sup>42</sup> Lost productivity due to smoking breaks is valued under the conservative assumption that working smokers take ten minutes of extra breaks per day.<sup>43</sup>



### 7.3 COMPONENT TWO: POLICY/INTERVENTION SCENARIOS

This component estimates the effects of FCTC tobacco control provisions on mortality and morbidity, as well as on total economic costs (direct and indirect) associated with tobacco use. Mortality and morbidity, as well as economic costs, for the tobacco control policy/intervention scenarios are compared to the status quo scenario, which is based on the current burden estimates.



#### STEP 3

Estimate the impact of FCTC tobacco control provisions on smoking prevalence.

Selection of priority FCTC measures modeled within the investment case align with the Global Strategy to Accelerate Tobacco Control<sup>44</sup> developed following a decision at the Seventh session of the Conference of the Parties (COP7) to the WHO FCTC. Under Objective 1.1 of the Strategy, Parties seek to accelerate WHO FCTC implementation by setting clear priorities where they will be likely to have the greatest impact in reducing tobacco use. This includes priority implementation of price and tax measures (*Article 6*) and time-bound measures of the Convention, including bans on smoking in all public places (*Article 8*), health warnings and plain tobacco packaging (*Article 11*), and comprehensive bans on tobacco advertising, promotion and sponsorship (*Article 13*). In addition, given the importance of awareness in behavior change and shaping cultural norms, the investment cases include instituting mass media campaigns against tobacco use (*Article 12*) as a measure modeled.

The impacts of implementing the FCTC provisions are obtained from the literature. The impact of enforcing smoke-free air laws, implementing plain packaging, intensifying advertising bans, and conducting mass media campaigns are derived from Levy et al. (2018)<sup>45</sup> and Chipty (2016),<sup>46</sup> as adapted within the Tobacco Use Brief of Appendix 3 of the WHO Global NCD Action Plan 2013–2020.<sup>47</sup> The impact of raising taxes on the prevalence of tobacco use is determined by the ‘prevalence elasticity’, or the extent to which individuals stop smoking as a result of price changes. Following evidence that price elasticity ranges between -0.4 to -0.8 in developing countries,<sup>48</sup> it is assumed that the price elasticity of demand in Cabo Verde is -0.5, and that prevalence elasticity is approximately one-half of price elasticity (-0.25).<sup>49</sup> **Table 4** displays the impact sizes used within the investment case analysis. Additional information on their derivation can be found in the Technical Appendix.

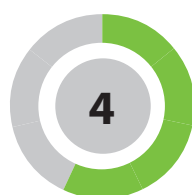
Within the analysis, it is assumed that implementation or intensification of new tobacco control measures does not take place until year three. With the exception of taxes—the impact of which is dependent on the timing of increases in tax rates—the full impact of the measures is phased in over a five-year period. The phase-in period follows WHO assumptions<sup>50</sup> that two years of planning and development are required before policies are up and running, followed by three years of partial implementation that are reflective of the time that is needed to roll out policies, and work up to full implementation and enforcement.

**Table 4: Impact size: Relative reduction in the prevalence of current smoking by tobacco control policy/intervention**

FCTC Tobacco Policy/Intervention	Relative reduction in prevalence of current smokers		
	First 5 Years (2019–2023)	Years 6–15 (2024–2033)	Over 15 Years (2019–2033)
<b>Tobacco Package*</b> (all policies/interventions implemented simultaneously)	<b>41.3%</b>	<b>21.8%</b>	<b>63.2%</b>
<b>Increase taxes on cigarettes.</b> (FCTC Article 6)	12.0%	11.7%	23.7%
<b>Extend and strengthen compliance with the ban on smoking in public places.</b> (FCTC Article 8)	9.3%	6.8%	16.1%
<b>Mandate that tobacco product packages carry large health warnings.</b> (FCTC Article 11)	9.6%	7.0%	16.6%
<b>Implement plain cigarette packaging.</b> (FCTC Article 11)	3.6%	2.6%	6.2%
<b>Run a mass media campaign to promote awareness about tobacco control.</b> (FCTC Article 12)	9.1%	6.7%	15.8%
<b>Enact comprehensive bans on advertising, promotion, and sponsorship.</b> (FCTC Article 13)	7.2%	5.3%	12.5%
* 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 <sub>i</sub> and PR <sub>j</sub> , (1-PR <sub>i</sub> ) x (1-PR <sub>j</sub> ) [is] applied to the current smoking prevalence [ <sup>51</sup> , p. 454].			



## 7.4 The impact of changes in smoking prevalence



### STEP 4

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

To analyze the impact of policy measures on reducing the health and economic burden of smoking, the investment case calculates and compares two scenarios. In the status quo scenario, current efforts are 'frozen', meaning that, through the year 2033 (end of the analysis), no change occurs from the tobacco control provisions that are currently in place. In the intervention scenario, Cabo Verde 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 Cabo Verde can achieve by taking targeted actions to reduce tobacco use.

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

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

Marginal effects are calculated as follows for each outcome:

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

## 7.5 The financial costs of implementing tobacco control measures



### STEP 5

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

The financial costs to the government of implementing new measures—or of intensifying or enforcing existing ones—is estimated using the WHO NCD Costing Tool. Full explanations of the costs and assumptions embedded in the WHO NCD Costing tool are available.<sup>52</sup>

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

Across these categories, the Tool contains default costs from 2011, which are sourced from the WHO CHOICE costing study. Following Shang and colleagues, the Tool is updated to reflect 2017 costs by updating several parameters: the US\$ to local currency unit exchange rate (2017), purchasing power parity (PPP) exchange rate (2017), GDP per capita (US\$, 2017), GDP per capital (PPP, 2017), population (total, and share of the population age 15+, 2017), labor force participation rate (2017), and government spending on health as a percent of total health spending (2015) [<sup>53</sup>, p. 5]. Unless government or other in-country parameters are received, data is from the World Bank database, with the exception of data on the share of government health spending, population figures, and the price of gas per liter. 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.

## 7.6 The return on investment (ROI)



### STEP 6

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

The return on investment (ROI) analysis measures the efficiency of tobacco control investments by dividing the monetary value of health gains from investments by their respective costs. The ROI answers the following question: for every currency unit that the government invests in tobacco control measures, how much can it expect to receive in return?

ROIs were calculated for (i) each of the five tobacco control policies and interventions modeled, (ii) total economic losses and (iii) specific outcomes, such as lives saved or healthcare expenditures. Estimates from Step 3, 4 and 5 were used to calculate ROIs for at 5- and 15-year intervals.

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



*Credit: © Pixo7000/World Bank via Flickr*



## 8. References

- 1 World Health Organization, *WHO Report on the Global Tobacco Epidemic, Cabo Verde Country Profile*. 2017, World Health Organization: Geneva.
- 2 Institute for Health Metrics and Evaluation, *The Global Burden of Disease Results Tool*. 2017, University of Washington: Seattle, WA.
- 3 Goodchild, M., N. Nargis, and E. Tursan d'Espaignet, *Global economic cost of smoking-attributable diseases*. *Tob Control*, 2018. **27**(1): p. 58-64.
- 4 Chaker, L., et al., *The global impact of non-communicable diseases on macro-economic productivity: a systematic review*. *Eur J Epidemiol*, 2015. **30**(5): p. 357-95.
- 5 Anesetti-Rothermel, A. and U. Sambamoorthi, *Physical and mental illness burden: disability days among working adults*. *Popul Health Manag*, 2011. **14**(5): p. 223-30.
- 6 Wang, P.S., et al., *Chronic medical conditions and work performance in the health and work performance questionnaire calibration surveys*. *J Occup Environ Med*, 2003. **45**(12): p. 1303-11.
- 7 Husain, M.J., et al., *The crowding-out effect of tobacco expenditure on household spending patterns in Bangladesh*, in *PLoS One*. 2018.
- 8 John, R.M., *Crowding out effect of tobacco expenditure and its implications on household resource allocation in India*. *Soc Sci Med*, 2008. **66**(6): p. 1356-67.
- 9 Paraje, G. and D. Araya, *Relationship between smoking and health and education spending in Chile*. *Tob Control*, 2018. **27**(5): p. 560-567.
- 10 de Beyer, J., C. Lovelace, and A. Yurekli, *Poverty and tobacco*. *Tob Control*, 2001. **10**(3): p. 210-1.
- 11 Efroymson, D., et al., *Hungry for tobacco: an analysis of the economic impact of tobacco consumption on the poor in Bangladesh*. *Tob Control*, 2001. **10**(3): p. 212-7.
- 12 *Tobacco and its environmental impact: an overview*. 2017, World Health Organization: Geneva.
- 13 Zafeiridou, M., N.S. Hopkinson, and N. Voulvoulis, *Cigarette Smoking: An Assessment of Tobacco's Global Environmental Footprint Across Its Entire Supply Chain*. *Environ Sci Technol*, 2018. **52**(15): p. 8087-8094.
- 14 *The Environmental Burden of Cigarette Butts*. *BMJ Tobacco Control*, 2011. **20**(Supplement 1).
- 15 World Health Organization, *WHO Report on the Global Tobacco Epidemic, Cabo Verde Country Profile*. 2017, World Health Organization: Geneva.
- 16 World Health Organization, *WHO Report on the Global Tobacco Epidemic, Cabo Verde Country Profile*. 2017, World Health Organization: Geneva.
- 17 *Cape Verde STEPS Survey 2007*. 2007, World Health Organization.
- 18 *Cape Verde STEPS Survey 2007*. 2007, World Health Organization.
- 19 World Health Organization, *WHO Report on the Global Tobacco Epidemic, Cabo Verde Country Profile*. 2017, World Health Organization: Geneva.
- 20 Teixeira, J.M.D., *Core Questionnaire of the Reporting Instrument of WHO FCTC*. 2018, WHO Framework Convention on Tobacco Control Secretariat.

- 21 Teixeira, J.M.D., *Core Questionnaire of the Reporting Instrument of WHO FCTC*. 2018, WHO Framework Convention on Tobacco Control Secretariat.
- 22 Centers for Disease Control and Prevention (CDC) and World Health Organization (WHO), *Cape Verde Global Youth Tobacco Survey*. 2007: United States.
- 23 Centers for Disease Control and Prevention (CDC) and World Health Organization (WHO), *Cape Verde Global Youth Tobacco Survey*. 2007: United States.
- 24 Law No. 119/IV/95. 1995, [www.tobaccocontrollaws.org](http://www.tobaccocontrollaws.org); Cabo Verde.
- 25 WHO Report on the Global Tobacco Epidemic, 2019. Forthcoming, July 2019.
- 26 World Health Organization, *WHO Report on the Global Tobacco Epidemic, Cabo Verde Country Profile*. 2017, World Health Organization: Geneva.
- 27 World Health Organization, *WHO Report on the Global Tobacco Epidemic, Cabo Verde Country Profile*. 2017, World Health Organization: Geneva.
- 28 Tobacco Control Laws. *Tobacco Control Policy Fact Sheet Cape Verde: Smoke Free Places*. Available from: <https://www.tobaccocontrollaws.org/legislation/factsheet/sf/cape-verde>.
- 29 Centers for Disease Control and Prevention (CDC) and World Health Organization (WHO), *Cape Verde Global Youth Tobacco Survey*. 2007: United States.
- 30 World Health Organization, *WHO Report on the Global Tobacco Epidemic, Cabo Verde Country Profile*. 2017, World Health Organization: Geneva.
- 31 World Health Organization Regional Office for Africa. *Cabo Verde commemorates World No Tobacco Day 2017*. 2017 [cited 2019 2/1/2019]; Available from: <https://www.afro.who.int/news/cabo-verde-commemorates-world-no-tobacco-day-2017>.
- 32 WHO Report on the Global Tobacco Epidemic, 2019. Forthcoming, July 2019.
- 33 Tobacco Control Laws. *Tobacco Control Policy Fact Sheet Cape Verde: Smoke Free Places*. Available from: <https://www.tobaccocontrollaws.org/legislation/factsheet/sf/cape-verde>.
- 34 Institute for Health Metrics and Evaluation, *The Global Burden of Disease Results Tool*. 2017, University of Washington: Seattle, WA.
- 35 Berman, M., et al., *Estimating the cost of a smoking employee*. *Tob Control*, 2014. **23**(5): p. 428-33.
- 36 World Health Organization, *Global Health Expenditure Database*. 2019, World Health Organization.
- 37 Levy, D.T., et al., *The Impact of Implementing Tobacco Control Policies: The 2017 Tobacco Control Policy Scorecard*. *J Public Health Manag Pract*, 2018.
- 38 Institute for Health Metrics and Evaluation, *The Global Burden of Disease Results Tool*. 2017, University of Washington: Seattle, WA.
- 39 Ross, H., *Tracking and tracing tobacco products in Kenya*. *Prev Med*, 2017. **105s**: p. S15-s18.
- 40 Jamison, D.T., et al., Appendix 3: *Global health 2035: a world converging within a generation*. *Salud Publica Mex*, 2015. **57**(5): p. 444-67.

- 
- 41 Berman, M., et al., *Estimating the cost of a smoking employee*. Tob Control, 2014. **23**(5): p. 428-33.
- 42 Baker, C.L., et al., *Benefits of quitting smoking on work productivity and activity impairment in the United States, the European Union and China*, in *Int J Clin Pract*. 2017.
- 43 Berman, M., et al., *Estimating the cost of a smoking employee*. Tob Control, 2014. **23**(5): p. 428-33.
- 44 WHO FCTC Secretariat. *Global Strategy to Accelerate Tobacco Control*. Available under: <https://www.who.int/fctc/implementation/global-strategy-to-accelerate-tobacco-control/en/>
- 45 Levy, D.T., et al., *The Impact of Implementing Tobacco Control Policies: The 2017 Tobacco Control Policy Scorecard*. J Public Health Manag Pract, 2018.
- 46 Chipty, T. *Study of the Impact of the Tobacco Plain Packaging Measure on Smoking Prevalence in Australia*. 2016 4/16/2018]; Available from: [https://www.health.gov.au/internet/main/publishing.nsf/content/491CE0444F7B0A76CA257FBE00195BF3/\\$File/PIR%20of%20Tobacco%20Plain%20Packaging%20-%20with%20Addendum.docx](https://www.health.gov.au/internet/main/publishing.nsf/content/491CE0444F7B0A76CA257FBE00195BF3/$File/PIR%20of%20Tobacco%20Plain%20Packaging%20-%20with%20Addendum.docx).
- 47 *Tobacco Interventions for Appendix 3 of the Global Action Plan for Non Communicable Diseases*. 2017, World Health Organization.
- 48 *The Economics of Tobacco and Tobacco Control, in Monograph Series*. 2017, National Institutes of Health, National Cancer Institute.
- 49 Chapter 5. *Tax, price and adult tobacco use, in Effectiveness of tax and price policies for tobacco control*. 2011, International Agency for Research on Cancer: Lyon, France.
- 50 *Costing Tool – User Guide - Scaling Up Action against Noncommunicable Diseases: How Much Will It Cost?* 2012, World Health Organization.
- 51 Levy, D.T., et al., *The Impact of Implementing Tobacco Control Policies: The 2017 Tobacco Control Policy Scorecard*. J Public Health Manag Pract, 2018.
- 52 *Costing Tool – User Guide - Scaling Up Action against Noncommunicable Diseases: How Much Will It Cost?* 2012, World Health Organization.
- 53 Shang, C., et al., *Country-specific costs of implementing the WHO FCTC tobacco control policies and potential financing sources*. PLoS One, 2018. **13**(10): p. e0204903.
-



Empowered lives.  
Resilient nations.



**FCTC**  
WHO FRAMEWORK CONVENTION  
ON TOBACCO CONTROL  
SECRETARIAT

MINISTÉRIO DA  
SAÚDE E DA  
SEGURANÇA SOCIAL

GOVERNO DE  
**CABO  
VERDE**  
A TRABALHAR PARA TODOS.

**RTI**  
INTERNATIONAL



World Health  
Organization

# **The case for scaling-up WHO FCTC implementation in Cabo Verde**

Prepared by  
RTI International  
Ministry of Health, Cabo Verde  
United Nations Development Programme  
WHO FCTC Secretariat  
World Health Organization

---

July 2019



Funded by  
UK Government