

The International Tobacco Control Policy Evaluation Project

# ITC Mauritius National Report

RESULTS OF THE WAVE 2 SURVEY

MAY 2011



Promoting Evidence-Based Strategies to Fight the Global Tobacco Epidemic







# Results of the ITC Mauritius Wave 2 Survey Mauritius National Report

2011

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## Message



I am pleased to be associated with this important International Tobacco Control Mauritius National Report. With the implementation of the National Action Plan on Tobacco Control and the enforcement of the Public Health (Restrictions on Tobacco Products) Regulations 2008, Mauritius has taken bold steps in the fight against the tobacco epidemic and the Government of Mauritius is therefore fully committed to the fight against tobacco.

Two waves (stages) of the ITC Mauritius Survey have been completed and there is sufficient evidence of progress made in tobacco control so far. This will guide us in our future tobacco control efforts and policies to fulfill the requirements of the WHO Framework Convention on Tobacco Control.

The Wave 1 Mauritius National Report, which I had the privilege to release at the African Tobacco Situational Analysis Dissemination Workshop in Mauritius in June 2010, clearly indicates that smoking ban in public places is supported by both Mauritian smokers and non-smokers. In fact, there was a marked reduction of smoking in public venues within a period of 2 to 3 months after the ban. Besides, the Wave 1 Survey revealed that the majority of Mauritians had the willingness to quit smoking. They are also in favour of firm Government actions on tobacco use, including the display of stronger warnings on tobacco packages.

The findings of the Wave 2 Survey Report, on the other hand, provide compelling evidence of the powerful impact of large pictorial warnings. The eight rotating images depicting various smoking-related illnesses that appear prominently on the front and back of cigarette packages, are among the largest in the world. The Survey has shown that these labels are highly noticeable and evoke emotional responses among smokers.

With the introduction of the graphic warnings on packages of tobacco products, smokers in Mauritius have become conscious of the health risks of smoking. This is a strong message to other African countries about the potential impact of this low-cost policy intervention for tobacco control.

The Wave 2 study has further shown that efforts should be focussed on improving compliance with smoke-free laws, particularly in pubs and bars, so as to achieve smoking reduction levels of countries like Ireland and France.

Our ultimate goal is to make of Mauritius a tobacco-free country. We will continue to work closely with our public health partners, the Mauritius Institute of Health, the University of Mauritius, ViSa, the ITC Project at the University of Waterloo, the World Health Organization and other collaborators to achieve this goal. Together, we can achieve this.

**Mrs S. Hanoomanjee**

Minister of Health and Quality of Life

“Government has waged  
a war against tobacco.  
However, the fight  
against tobacco is one which  
cannot be carried out in  
isolation. The magnitude of  
the problem is such  
that it requires sustained,  
comprehensive and  
concerted efforts from  
all sectors.”

S. Hanoomanjee (Mrs.), Minister of Health and  
Quality of Life, June 3, 2010 (ITC Mauritius Project  
Dissemination Workshop)

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“The Public Health  
(Restrictions on Tobacco  
Products) Regulations have  
recently been promulgated.  
Contrary to what some may  
think, this is not a measure  
that restricts liberty. It is  
meant to free you from a  
scourge that was becoming  
far too widespread and  
wrecking innocent lives.”

Prime Minister Dr. the Honourable  
Navinchandra Ramgoolam, G.C.S.K.  
March 12, 2009 (Mauritius Independence Day)

# ITC POLICY EVALUATION PROJECT

The International Tobacco Control Policy Evaluation Project (the ITC Project) is a multi-country prospective cohort study designed to measure the psychosocial and behavioural impact of key policies of the World Health Organization Framework Convention on Tobacco Control (FCTC). This report presents the results from the most recent wave (Wave 2) of the ITC Mauritius Survey and compares these with the findings from Wave 1. The ITC Mauritius Survey is a face-to-face survey of a nationally representative sample of smokers and non-smokers. The Wave 1 Survey was conducted between April 20 and May 24, 2009, approximately two months after the implementation of Phase 1 of the Public Health (Restrictions on Tobacco Products) Regulations (2008). These regulations strengthened existing policies on smoking in public places and advertising, promotion, and sponsorship of tobacco products. Other measures included a ban on the sale of tobacco to minors and by minors; a ban on the display of tar and nicotine content or carbon monoxide yield on packs; and measures to reduce the illicit trade of cigarettes. Wave 2 was conducted between August 30 and October 2, 2010, approximately 14 to 15 months after the Phase 2 Regulations were implemented which strengthened policies related to packaging, including a new requirement for pictorial warnings — the first-ever in the African Region.



## ITC Mauritius Survey Team

### Mauritius Team

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## Funding for ITC Mauritius Project

- International Development Research Center (IDRC)
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- Ontario Institute for Cancer Research (OICR)
- Canadian Institutes of Health Research – Institute of Population and Public Health

## ITC Mauritius National Report

The preparation of this Report was coordinated by Janine Ouimet and Lorraine Craig with the collaboration of Pete Driezen, Karima Ladhani, Danielle Woon, and Michelle Bishop at the University of Waterloo.

# BACKGROUND

## The ITC Project Surveys

The International Tobacco Control Policy Evaluation Project (the ITC Project) is the first-ever international cohort study of tobacco use. Its overall objective is to measure the psychosocial and behavioural impact of key national level policies of the WHO Framework Convention on Tobacco Control (FCTC). The ITC Project is a collaborative effort with international health organizations and policymakers in 20 countries (see back cover) so far, inhabited by more than 50% of world's population, 60% of the world's smokers, and 70% of the world's tobacco users. In each country, the ITC Project is conducting annual (approximately) longitudinal surveys to assess the impact and identify the determinants of effective tobacco control policies in each of the following areas:

- Health warning labels and package descriptors
- Pricing and taxation of tobacco products
- Tobacco advertising and promotion
- Smoke-free legislation
- Education and support for cessation

All ITC Surveys are developed using the same conceptual framework and methods, and the survey questions are designed to be identical or functionally equivalent in order to allow strong comparisons across countries. The ITC Project aims to provide an evidence base to guide policies enacted under the FCTC, and to systematically evaluate the effectiveness of these legislative efforts.

## The ITC Mauritius Survey

In 2009, the Mauritius Institute of Health (MIH) in collaboration with the World Health Organization, the Ministry of Health and Quality of Life, the University of Mauritius, and the non-governmental organization ViSa, partnered with the University of Waterloo in Canada to create the ITC Mauritius Survey. One of the main goals of the ITC Mauritius Survey is to evaluate the effectiveness of new Public Health (Restrictions on Tobacco Products) Regulations.<sup>1</sup> These Regulations were passed on November 28, 2008 and were implemented in two phases. Phase 1 regulations, which were implemented as of March 1, 2009, included:

- a ban on smoking in public indoor and outdoor areas, hospitality venues, recreational venues, and in private vehicles carrying passengers; smoking restrictions in workplaces with provision for designated smoking areas;
- a ban on the sale of tobacco to minors and by minors;
- a ban on advertising, promotion, and sponsorship of tobacco products (with the exception of internet advertising), including a ban on display of tobacco products at point of sale except duty free shop at airports;
- measures to reduce the illicit trade of cigarettes; and
- an increase in penalties for failures to adhere to the tobacco control regulations.

Phase 2 regulations, which were implemented on June 1, 2009, focused on cigarette packaging, and included:

- the first-ever implementation of pictorial health warnings in the African Region;
- a ban on descriptors such as 'light', 'mild', or 'low tar' on packages;
- a ban on the display of tar and nicotine content or carbon monoxide yield on packs; and
- a ban on the sale of single cigarettes or loose cigarettes and packages of less than 20 cigarettes.

Wave 1 of the ITC Mauritius Survey was conducted between April 20 and May 24, 2009, after the implementation of the majority of the policies in the Public Health (Restrictions on Tobacco Products) Regulations 2008, but before the implementation of the Phase 2 regulations, including pictorial health warnings and smoking cessation clinics. The Wave 2 Survey was conducted between August 30 and October 2, 2010.

There are three specific evaluation objectives:

1. To evaluate the impact of pictorial health warning labels (implemented in October 2009);
2. To evaluate the impact of smoke-free initiatives in public places and workplaces, and to assess adherence to the strengthened enforcement (implemented as of March 1, 2009); and
3. To assess public support for and to evaluate the effectiveness of forthcoming cessation clinics in Mauritius (planned for 2011).

A total of 1,750 households randomly selected from 60 Enumeration Areas (EAs) were enumerated to establish an accurate sampling frame from which survey participants were randomly drawn. In Wave 1, a total of 598 smokers and 239 non-smokers aged 18 years and older were surveyed via face-to-face interviews. In Wave 2, 555 smokers and quitters and 225 non-smokers were re-contacted (retention rate of 93% for smokers and 95% for non-smokers). To replace those smokers and non-smokers who could not be reached at Wave 2 (i.e., the replenishment sample), 127 new households were enumerated at Wave 2 and one additional EA was added to the sampling frame. From these new households, 46 new smokers and 4 new non-smokers were randomly selected for participation at Wave 2. This report presents findings from the ITC Mauritius Wave 2 Survey of smokers and non-smokers and compares these with the findings from Wave 1. The report focuses on describing 1) smoking and quitting behaviour and support for and use of cessation services at Wave 2; 2) the results of the evaluation of the new pictorial warnings; and 3) the results of the second post-ban assessment of the effectiveness of the smoking ban in public places and workplaces.



# KEY FINDINGS

## 1. Findings from Wave 2 continue to demonstrate that the patterns of smoking in Mauritius are favorable for strong tobacco control intervention.

The smoking rate (in cigarettes per day) is low, attitudes toward smoking are negative, even among smokers, and more than half of current smokers have tried to quit and have an interest in quitting in the future. 8% of smokers from Wave 1 had successfully quit smoking between Wave 1 and Wave 2.

## 2. There is near-unanimous support for stronger governmental efforts for cessation among smokers and non-smokers.

Smokers are most interested in accessing stop smoking medications, one-to-one counselling, and courses on quitting. Awareness of the government's plan to launch national smoking cessation clinics has risen among the public since Wave 1.

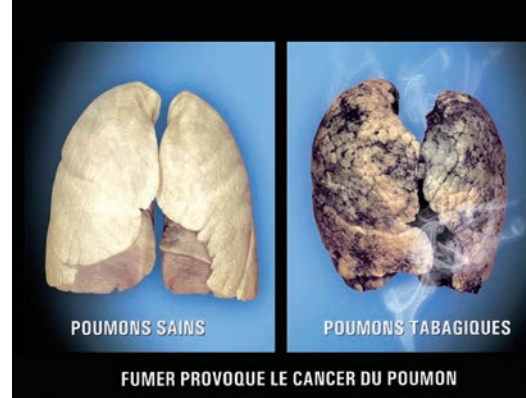
## 3. Mauritius' new set of eight pictorial health warnings, which are among the largest in the world, are highly effective in comparison with the former text-only labels.

Wave 2 results indicate that the new warning labels have successfully increased noticing of the labels, have raised smokers' awareness of the health risks of smoking, and have made an increased contribution to leading smokers to think about quitting, compared to the text-only labels that were assessed in Wave 1. The majority of smokers felt emotional alarm, unpleasant feelings, and worry in response to the warning labels; and a minority of smokers took steps to avoid the labels.

Similar to other ITC evaluation studies of pictorial warning labels in Canada, Thailand, Mexico, Australia, New Zealand, and Uruguay, findings from the introduction of larger warning labels with graphic images in Mauritius demonstrate that this policy measure appears to be a powerful mechanism for educating the public on the harms of smoking that will continue to motivate thoughts and action toward quitting.

## 4. Despite the introduction of the new pictorial health warnings, Mauritians still want more information about the health risks of smoking to appear on cigarette warning labels.

The government may wish to include additional and/or different health risk messages in the second set of pictorial health warnings. Information about how to access cessation services may also be added to the second set of warning labels to further improve effectiveness of the labels. This effort could be coordinated with the launch of new cessation clinics.



1. Mauritius Government (2008). The Public Health Act. Regulations made by the Minister under sections 193 and 194 of the Public Health Act. Government Notice No. 263 of 2008.

**Pictorial warnings in Mauritius have raised smokers' awareness of the health risks of smoking, increased their thoughts about quitting, and have evoked strong emotional reactions that are associated with quitting.**

**5. The majority of Mauritians notice less smoke indoors in public places and the majority of smokers are aware of the bans in indoor and outdoor public places, 18 months after the implementation of the smoking bans in public places.**

However, with respect to hospitality venues, smokers and non-smokers report a lack of compliance with the bans in restaurants and especially in bars. Compliance has decreased slightly compared to Wave 1 and noticing smoking in bars has increased since Wave 1. Thus, public education activities and enforcement of the smoke-free regulations in hospitality venues is an important area for future efforts in Mauritius.

**6. The majority of smokers and non-smokers reported that in their workplaces, people do not smoke indoors.**

However, even within designated smoking areas, compliance with the regulations in workplaces in Mauritius is not complete. Efforts to enforce the existing smoke-free regulations in workplaces, as well as ongoing efforts to change the legislation to mandate 100% smoke-free workplaces, are important activities for Mauritius in the future.

**7. Support for smoke-free public places, workplaces, and cars carrying passengers is very high, with the exception of public gardens and beaches.**

**8. Contrary to the argument that smoking bans in public places may lead to increased smoking at home, Wave 2 results demonstrate a slight increase in smoke-free homes, relative to Wave 1.**

Thus, the smoke-free policies that came into effect prior to Wave 1 may be continuing to have a favourable effect on reducing smoking in the home. At Wave 2, smokers were slightly less likely to allow smoking in their homes, and a greater proportion of smokers than in Wave 1 smoke less at home now compared to one year ago.

*Evidence from other ITC countries (i.e., Ireland and France) shows that strong implementation of smoking bans in restaurants and bars can reduce the percentage of smokers who notice smoking in these venues to 5% or less.*



# THE TOBACCO LANDSCAPE IN MAURITIUS

This section provides an overview of tobacco use and tobacco control policies in Mauritius at the time of the Wave 1 and Wave 2 ITC Mauritius Surveys. Mauritius has become a world leader for tobacco control in Africa. The WHO Framework Convention on Tobacco Control (FCTC) was signed by Mauritius in June 2003 and ratified in May 2004. Mauritius has taken significant steps to fulfill its obligations under the FCTC. In 2007, the Mauritius government, in collaboration with the WHO and several other stakeholders, developed a National Action Plan on Tobacco Control 2008-2012. The main objective of the Action Plan is to reduce tobacco-related mortality and morbidity by preventing the use of tobacco products, promoting cessation, and protecting the population from exposure to environmental tobacco smoke. Mauritius passed the Public Health (Restrictions on Tobacco Products) Regulations 2008, which updated 1999 policies on smoking in public places; packaging and labeling of tobacco products; tobacco advertising, promotion, and sponsorship; and illicit trade. One of the main goals of the ITC Mauritius Survey is to evaluate the effectiveness of the new Public Health (Restrictions on Tobacco Products) Regulations.

## Smoking Prevalence

Tobacco is the single most preventable cause of death in the world today.<sup>2</sup> The Mauritius Non Communicable Diseases Survey 2009 found that the smoking prevalence in Mauritius in 2009 was 40.3% for men and 3.7% for women (between the ages of 25 and 74 years) – among the highest smoking prevalence rates in Africa.<sup>3</sup> Estimates of smoking prevalence from the ITC Mauritius Wave 1 Survey were somewhat lower: 32.4% for men and 2.6 % for women (aged 18 years and older).<sup>4</sup> Differences in prevalence between the two surveys may be attributable to differences in survey methodology.

## Tobacco Control Policies

The FCTC, the world's first public health treaty, addresses the global tobacco epidemic through a variety of measures to reduce tobacco demand and supply, including price and taxation (Article 6), exposure to tobacco smoke (Article 8), packaging and labeling of tobacco products (Article 11), tobacco advertising and sponsorship (Article 13), and cessation and treatment (Article 14). With 172 member Parties as of December 2010, the FCTC is one of the most successful treaties ever established.

Mauritius has taken significant steps to fulfill its obligations under the FCTC and make the necessary amendments to its tobacco legislation. Mauritius has implemented some of the most progressive tobacco policies in Africa. The Public Health (Restrictions on Tobacco Products) Regulations 2008, came into force in two phases. Regulations to strengthen policies on smoking in public places; and tobacco advertising, promotion, and sponsorship were implemented on March 1, 2009. Regulations on pictorial warning labels, packaging descriptors, and the sale of single cigarettes followed on June 1, 2009. The following section summarizes the tobacco control policies in Mauritius at the time of the ITC Mauritius Wave 1 (April 20 to May 24, 2009) and Wave 2 (August 30 to October 2, 2010) Surveys, organized according to the tobacco control domains of the FCTC.

2. World Health Organization. (2008). *WHO Report on the Global Tobacco Epidemic, 2008: The MPOWER package*. Geneva, World Health Organization.

3. Republic of Mauritius, Ministry of Health and Quality of Life. (2009). *The Trends in Diabetes and Cardiovascular Disease Risk in Mauritius: The Mauritius Non Communicable Diseases Survey 2009*. <http://www.gov.mu/portal/goc/moh/file/hcd/hcd-2009.pdf>

4. International Tobacco Control Policy Evaluation Project (2010). *ITC Mauritius Wave 1 Technical Report*. <http://www.itcproject.org/projects/mauritius>



In 2009, Mauritius was the first nation in the African Region to implement pictorial health warning labels – a set of 8 rotating images appearing on the front and back of packs, in both English (occupying 70% of back) and French (occupying 60% of front).

## Public Health (Restrictions on Tobacco Products) Regulations 2008

### March 1, 2009 (Pre-Wave 1)

- Total ban on advertising, promotion and sponsorship, with the exception of the internet
- Ban on product display at point of sale
- No tobacco products offered for free or at a discounted price
- Smoke-free policy strengthened to include public indoor & outdoor areas, hospitality venues, recreational venues, and private vehicles carrying passengers; designated smoking areas still permitted in workplaces, and smoking permitted outdoors in some venues
- No vending machine sales
- No sale of tobacco to minors, or by minors (under 18 years)
- No sale of sweets or toys in the form of cigarettes

### June 1, 2009 (Post-Wave 1)

- 8 rotating graphic pictorial warning labels
- No descriptions such as 'light', 'mild', or 'low tar' permitted on packages
- Packages must not display the tar or nicotine content or the carbon monoxide yield
- No sale of single cigarettes; only packages of 20 cigarettes sold

### Packaging and Labeling of Tobacco Products

Article 11 of the FCTC stipulates that each Party shall adopt and implement effective packaging and labeling measures. New Article 11 Guidelines recommend pictorial warnings on at least 50% of the package and call for key requirements for the content, position, and size of warnings.

The packaging and labeling of tobacco products in Mauritius was a major focus of the 2008 Regulations. Since 1999, health warning labels on cigarette packages in Mauritius had only one text-based message that read: 'GOVERNMENT WARNING: Smoking causes cancer, heart disease and bronchitis', which appeared on the side of the pack. There were no requirements to set the warning apart from the packaging design, such as a thick black border and different-colored background. As a result, the warning was not noticeable, blending into the background of the pack design, as shown in Figure 1.

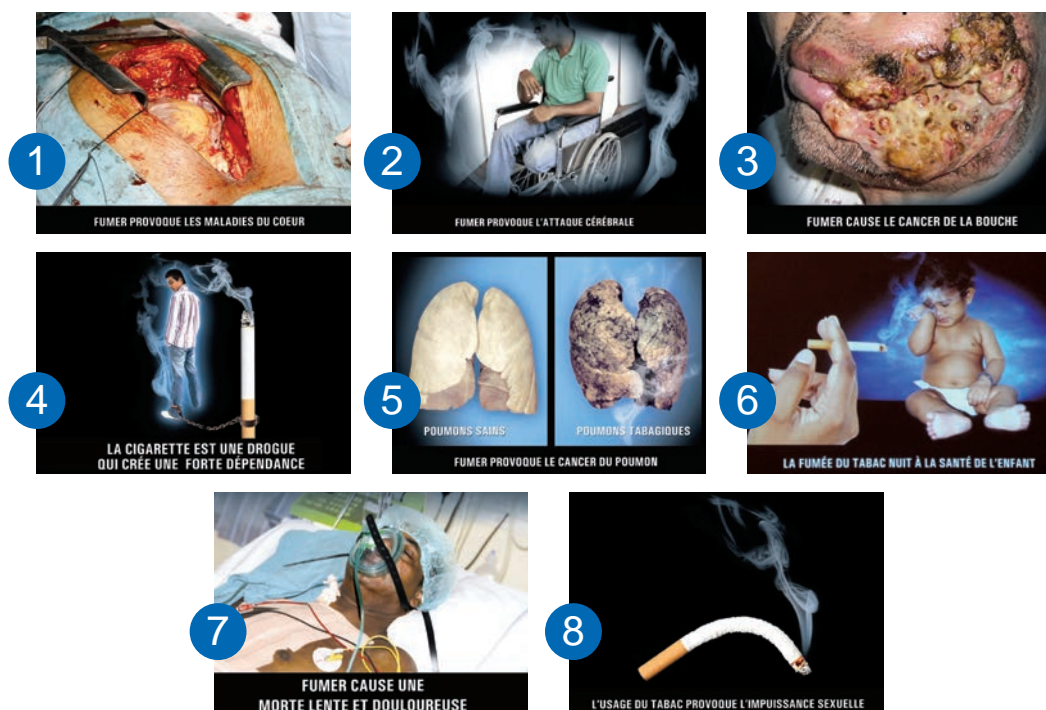
**Figure 1. Text-Based Health Warning Labels Mandated in Mauritius from 1999 to 2009**



## Packaging and Labeling of Tobacco Products cont...

Mauritius was the first nation in the African Region to implement pictorial health warning labels—a set of eight rotating images appearing on the front and the back of packs, in both English (occupying 70% of back) and French (occupying 60% of front) in 2009. These labels are among the largest in the world. Text messages also appear on 65% of the side of packs in both French and English.<sup>5</sup> The images of the set of eight warning labels officially implemented in Mauritius on June 1, 2009 are provided in Figure 2.

**Figure 2. Set of Eight Pictorial Health Warning Labels Implemented in Mauritius as of June 1, 2009**



Furthermore, per the 2008 Regulations, misleading descriptors on cigarette packages such as ‘light’ and ‘mild’ are not permitted; cigarette packages must not display the tar or nicotine content or the carbon monoxide yield (as described above); the sale of single/loose cigarettes and packages containing 10 cigarettes was banned – cigarette packages must contain 20 cigarettes; and distributors of tobacco products must not obscure any part of the warnings. Table 1 outlines the progression of legislation regarding packaging and labeling of tobacco products.

**Table 1. Packaging and Labeling of Tobacco Products Timeline**

Packaging and Labeling of Tobacco Products		
Prior to 2008 Regulations	2008 Regulations (Phase 1) March 1, 2009; Pre-Wave 1	2008 Regulations (Phase 2) June 1, 2009; Post-Wave 1
Since 1999, health warning labels on tobacco packages had one text-based message reading ‘Smoking causes cancer, heart disease and bronchitis’.		<p>Pictorial health warning labels are implemented — a set of 8 rotating images appearing on the front and the back of packs, in both English (occupying 70% of back) and French (occupying 60% of front) in 2009. These labels are among the largest in the world.</p> <p>Text messages also appear on 65% of the side of packs in both French and English.</p> <p>Misleading descriptors on cigarette packages such as ‘light’ and ‘mild’ are not permitted.</p>

It is important to note that the official date of implementation for the provisions related to packaging and labeling of tobacco products was June 1, 2009. However, the first pictorial warning labels were reported to be in public circulation on October 17, 2009.

5. For more about Mauritius’ Pictorial Health Warning Label images, please see the Tobacco Labeling Resource Centre website. <http://www.tobaccolabels.ca/current/mauritius>



## Pricing and Taxation

Increasing taxes on tobacco products is considered to be one of the most effective components of a comprehensive tobacco control strategy, particularly among young people. Article 6 of the FCTC obligates countries that have ratified the treaty to adopt pricing and taxation measures that reduce tobacco consumption such as sales restrictions and limitations on international travelers importing tax and duty free tobacco products. Mauritius does not manufacture any tobacco products locally. This means that 100% of the cigarettes sold to consumers in Mauritius are imported from other countries. An import tax of 15% of the cigarette price is imposed on all tobacco. A custom excise duty of Rs 2,200 (\$72.50 US) applies per thousand cigarette sticks and a final tax of 15% of the total of both aforementioned taxes plus the base cost of cigarettes is applied prior to sale. In addition, in an effort to curb illicit trade, an affixed excise stamp must appear on cigarette packages.

## Smoke-free Public Places and Workplaces

Article 8 of the FCTC requires the adoption of effective measures to provide protection from exposure to tobacco smoke. The 1999 Regulations included a provision that banned smoking indoors in health care institutions, educational institutions, sports premises, public transportation, office premises or workplaces open to the public, public places (museums, post office, etc.) as well as when preparing, serving, or selling food to the public. In 2008, the Regulations were revised to be more comprehensive and now include: indoor and outdoor premises of health and educational institutions, indoor and outdoor sporting premises, any public conveyance, bus stands and stations, any indoor workplace (excluding designated smoking areas), any indoor area open to the public, recreational public places like gardens (except beaches), cafés, bars, night clubs, and restaurants, while preparing, serving or selling food for/to the public, and while driving or travelling in a private vehicle carrying passengers. ‘No smoking’ signs (with regulated colour, size, and text font) have been placed in public places. Table 2 outlines the progression of legislation regarding smoke-free locations.

**Table 2. Smoke-free Public Places and Workplaces Policy Timeline**

Smoke-free Locations		
Prior to 2008 Regulations	2008 Regulations (Phase 1) March 1, 2009; Pre-Wave 1	2008 Regulations (Phase 2) June 1, 2009; Post-Wave 1
Pursuant to the 1999 Regulations, the following venues were deemed smoke-free indoors:  <i>- Healthcare institutions</i> <i>- Educational institutions</i> <i>- Sports premises</i> <i>- Public transportation</i> <i>- Any part of any office premises or other workplaces open to public</i> <i>- Public places (museums, post office, etc.)</i> <i>- Any place involving a person preparing or selling food to the public</i>	The following venues are deemed smoke-free indoors and outdoors:  <i>- Healthcare institutions</i> <i>- Educational institutions</i> <i>- Sports premises</i>	
	The following venues are deemed smoke-free indoors:  <i>- Any indoor workplace (excluding designated smoking areas)</i> <i>- Any indoor area open to the public</i> <i>- Cafés</i> <i>- Bars</i> <i>- Night clubs</i> <i>- Restaurants</i> <i>- Any place involving a person preparing or selling food to the public</i> <i>- Any private vehicles while driving or traveling with passengers</i> <i>- Any public conveyances</i> <i>- Bus stations</i>	
Penalties for failures to adhere to the conditions of the Public Health (Restrictions on Tobacco Products) Regulations 1999 include the following:  <i>- At first conviction, a fine of not less than MUR 1,000 and not more than MUR 2,000;</i> <i>- At second conviction, a fine of not less than MUR 2,000 and not more than MUR 5,000; and</i> <i>- At third or subsequent conviction, imprisonment for a term not exceeding 3 months</i>	The following venues are deemed smoke-free outdoors:  <i>- Recreational public places (not including beaches) - Bus stands</i>	
	‘No smoking’ signs (with regulated colour, size, and text font) have been placed in public places. Penalties for failures to adhere to the conditions of the Public Health (Restrictions on Tobacco Products) Regulations 2008 include the following:  <i>- At first conviction, a fine of not less than MUR 5,000 and not more than MUR 8,000;</i> <i>- At second conviction, a fine of not less than MUR 8,000 and not more than MUR 10,000; and</i> <i>- At third or subsequent conviction, imprisonment for a term not exceeding 12 months</i>	

It is important to note that the Mauritius government recognizes that allowing ‘designated smoking areas’ in workplaces is a problem because it creates a loophole in the legislation. Work is underway with the Ministry of Labour, Industrial Relations and Employment to revise this legislation so that such ‘designated smoking areas’ will not be allowed.

## Education, Communication, Training, and Public Awareness

Under Article 12, Parties must promote and strengthen public awareness of tobacco control issues through education and public awareness programs on the health risks of tobacco consumption and the benefits of cessation, and provide public access to information on the tobacco industry.

Mauritius has made efforts to increase public awareness and communication about the harmful effects of exposure to tobacco smoke and the use of tobacco products. In addition to an ongoing public education campaign, the government launched campaigns to raise awareness of the new regulations through mass media and other channels in February 2009. As part of their Action Plan, the Mauritius government has also planned to organize awareness-raising and advocacy sessions in order to bring consensus and support amongst key stakeholders for the implementation and enforcement of the smoke-free policy.

## Tobacco Advertising, Promotion, and Sponsorship

Article 13 of the FCTC requires Parties to implement effective measures against tobacco advertising, promotion, and sponsorship. Guidelines for Article 13 recommend a comprehensive ban on tobacco advertising, promotion, and sponsorship (or apply restrictions that are as comprehensive as possible). Included among the recommended measures are bans on: cross-border advertising, promotion and sponsorship; display of tobacco products at points of sale; tobacco product vending machines; internet sales; and attractive packaging and product features.

A ban on tobacco advertising and promotion, as well as a ban on sponsorship by tobacco companies, has been in place in Mauritius since 1999. Effective as of March 1, 2009, the regulations were made more comprehensive to include a ban on the offer or supply of tobacco products free of charge or at a discounted price. The display of tobacco products at point of sale was also banned, with the exception of airport duty free shops in Mauritius and Rodrigues.

## Cessation

Article 14 of the FCTC promotes the implementation of programs for smoking cessation, including programs for diagnosing, counselling, preventing, and treating tobacco dependence, as well as facilitating accessible and affordable treatments.

Reduction measures concerning tobacco dependence and cessation efforts in Mauritius include a pilot smoking cessation clinic implemented in December 2008 by the Ministry of Health and Quality of Life. Additional cessation clinics may be implemented as part of World Health Organization initiative at seven sites across Mauritius in 2011. Currently, counselling, nicotine patches of 5, 10, and 15 mg doses, and Bupropion Hydrochloride tablets of 150 mg (Zyban) are all available at the pilot smoking cessation clinic. Nicotine replacement therapy (NRT) items like nicotine spray, gum, patches, and lozenges are available over the counter without prescriptions in private pharmacies. In addition, private physicians and psychiatrists can prescribe NRT and Bupropion to their patients.

## Illicit Trade in Tobacco Products

To curb illicit trade of tobacco products in Mauritius, the 2008 Regulations included a provision that requires the country of origin to be noted on cigarette packages. Packages must also carry the statement 'sale allowed in Mauritius only' and the Excise (Amendment) Regulations 2008 of the Excise Act prescribes that an excise stamp be affixed.

## Sales to and by Minors

The sale of tobacco to minors in Mauritius has been illegal since 1999; however, the sale of tobacco by minors was made illegal in March 2009. To discourage the uptake of smoking by youth, the sale of single or 'loose' cigarettes is now banned, and packages being sold must contain 20 cigarettes (as described earlier). The sale of tobacco through vending machines is prohibited and any person selling tobacco must seek out evidence of legal age. The seller of tobacco must also display a prohibition sign. The sale of sweets, toys, etc., in the form of cigarettes has also been banned.

## Penalties for failures to adhere to the Public Health (Restrictions on Tobacco Products) Regulations 2008

Penalties for failures to adhere to the conditions of the smoke-free laws include the following: at first conviction, a fine of not less than MUR 5,000 and not more than MUR 8,000; at second conviction, a fine of not less than MUR 8,000 and not more than MUR 10,000; and at third or subsequent conviction, an imprisonment for a term not exceeding 12 months.

*Mauritius has taken significant steps to fulfill its obligations under the FCTC and has implemented some of the most progressive tobacco policies in Africa.*

# METHODS

## OVERVIEW

### The ITC Project

The International Tobacco Control Policy Evaluation Project (the ITC Project) is an international research collaboration across 20 countries – Canada, United States, United Kingdom, Australia, Thailand, Malaysia, South Korea, China, Mexico, Uruguay, New Zealand, France, Germany, the Netherlands, Bhutan, France, Brazil, India, Bangladesh, and Mauritius. The primary objective of the ITC Project is to conduct rigorous evaluation of the psychosocial and behavioural effects of national level tobacco control policies of the Framework Convention on Tobacco Control (FCTC). The ITC Project is conducting large-scale annual prospective cohort surveys of tobacco use to evaluate FCTC policies in countries inhabited by half of the world's smokers. Each ITC Survey includes key measures for each FCTC policy domain that are identical or functionally similar across the 20 countries to facilitate cross-country comparisons. The evaluation studies conducted from the ITC Surveys take advantage of natural experiments created when an ITC country implements a policy: changes in policy-relevant variables in that country from pre- to post-policy survey waves are compared to other ITC countries where that policy has not changed. This research design provides high levels of internal validity, allowing more confident judgments regarding the possible causal impact of the policy. For description of the conceptual model and objectives of the ITC Project, see Fong et al. (2006)<sup>6</sup>; for description of the survey methods, see Thompson et al. (2006).<sup>7</sup>

The International Tobacco Control Policy Evaluation Project in Mauritius (the ITC Mauritius Project) was created in 2009 to rigorously evaluate the psychosocial and behavioural effects of Mauritian tobacco control legislation and national level smoking cessation clinics, using methods that the ITC Project has employed in many other countries throughout the world. The project objective is to provide an evidence base to guide policies enacted under the FCTC and to systematically evaluate the effectiveness of these legislative efforts.

### The ITC Mauritius Survey: Waves 1 and 2

In 2009, the Mauritius Institute of Health (MIH) in collaboration with the World Health Organization, the Ministry of Health and Quality of Life, the University of Mauritius, and the non-governmental organization ViSa, partnered with the University of Waterloo in Canada to create the ITC Mauritius Survey. There were three specific evaluation objectives:

1. To evaluate the impact of pictorial health warning labels (implemented in October 2009);
2. To evaluate the impact of smoke-free initiatives in public places and workplaces, and to assess adherence to the strengthened enforcement (implemented as of March 1, 2009); and
3. To assess public support for and to evaluate the effectiveness of cessation clinics in Mauritius (planned for 2011).

Wave 1 of the Survey was conducted between April 20 and May 24, 2009, i.e. 2 to 3 months after the implementation of Phase 1 of the Regulations, but before the implementation of Phase 2 of the regulations. As stated earlier, Phase 1 of the Regulations, which included more comprehensive smoke-free, advertising and promotion laws, as well as regulations to prevent sales to and by minors, and the illicit trade of cigarettes, came into effect on March 1, 2009. Phase 2 of the Regulations, which included tobacco control policies related to packaging (i.e., the implementation of graphic pictorial health warnings, the requirement that only packages of 20 cigarettes be sold, and the requirement that cigarette packages contain no misleading wording, such as 'light', 'mild', or 'low tar') came into effect on or after June 1, 2009. Wave 2 was conducted between August 30 and October 2, 2010, i.e. 18 to 19 months after the Phase 1 Regulations came into effect, and 14 to 15 months after the Phase 2 Regulations officially came into effect. Figure 3 presents an overview of the ITC Mauritius Survey timeline in relation to Mauritian tobacco control policy initiatives.



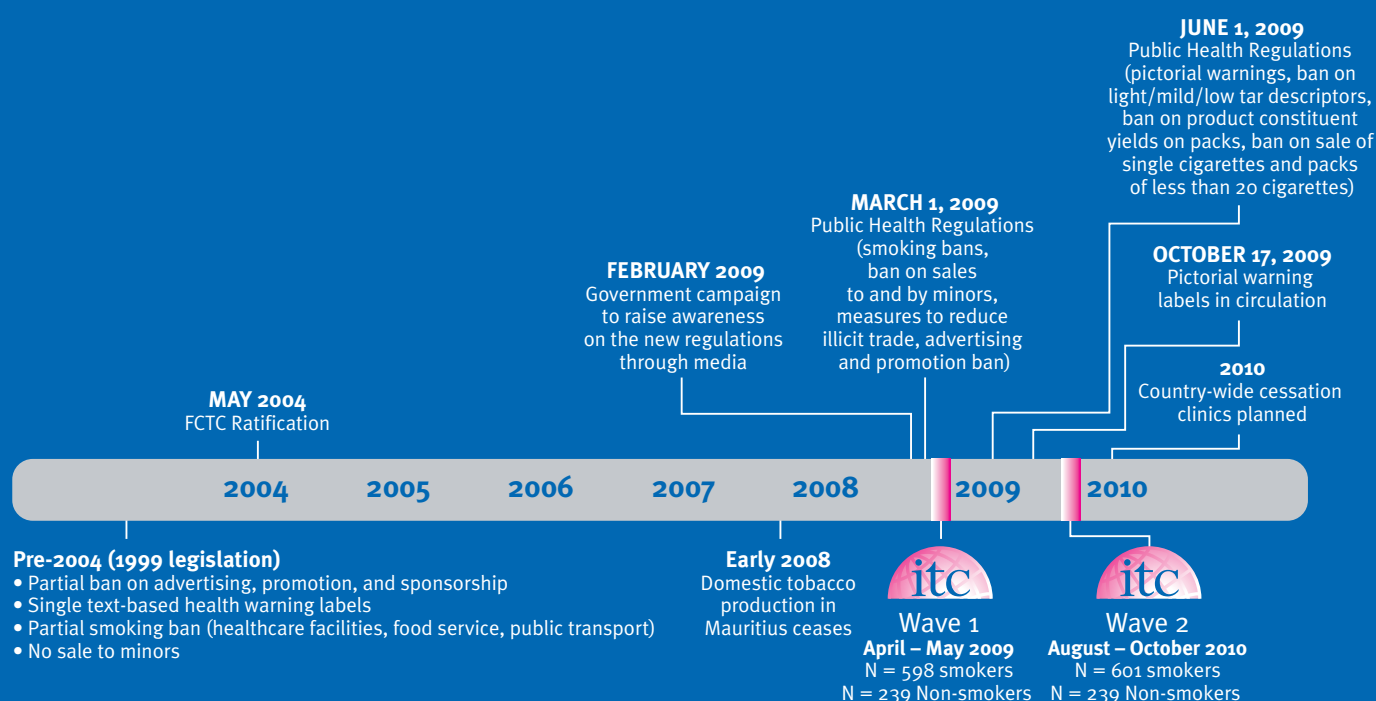
6. Fong GT, Cummings KM, Borland R, Hastings G, Hyland A, Giovino GA, Hammond D, Thompson ME (2006). The conceptual framework of the International Tobacco Control (ITC) Policy Evaluation Project. *Tob Control*;15 (Suppl III):iii3-iii11.

7. Thompson ME, Fong GT, Hammond D, Boudreau C, Driezen P, Hyland A, Borland R, Cummings KM, Hastings G, Siahpush M, MacKintosh AM, Laux FL (2006). Methods of the International Tobacco Control (ITC) Four Country Survey. *Tob Control*;15 (Suppl III):iii12-iii-18



Figure 3.

## Mauritius Tobacco Policy Timeline in Relation to the ITC Mauritius Surveys



## Sampling design

For the ITC Mauritius Wave 1 Survey, a nationally representative probability sample was constructed in collaboration with the Mauritius Central Statistics Office to ensure random selection of households within strata defined by the nine geographic districts spanning the island, which also provided similar urban-rural representation (43% urban, 57% rural) in the study sample. Mauritius is divided into 3,600 enumeration areas (EAs), each with about 100-125 households. The study sample was selected from 60 EAs with probability proportional to size within strata. In each EA, 50 households were selected at random to be sampled. A maximum of three respondents per household was allowed.

A total of 1,750 households were enumerated to establish an accurate sampling frame from which survey participants would be drawn. A cohort of 598 smokers and 239 non-smokers aged 18 years and older were surveyed using a face-to-face survey interviewing methodology in Creole language.

For the Wave 2 Survey, the sample constructed in Wave 1 was re-contacted for participation in Wave 2. The retention rate was 92.7% for smokers 95.0% for non-smokers. These retention rates are exceptionally high among longitudinal cohort surveys (on average, retention rates of ITC Surveys are between 70% and 80%). As such, approximately 6.7% of the Wave 2 sample was generated by replenishment. A total of 127 new households were enumerated at Wave 2 and one additional EA was added to the sampling frame. From these new households, 46 new smokers and 14 new non-smokers were randomly selected for participation at Wave 2. This resulted in a total sample of 601 smokers and 239 non-smokers aged 18 years and older that were surveyed using a face-to-face survey interviewing methodology in Creole language.

## Characteristics of the Wave 2 Sample

Wave 1 and Wave 2 Survey fieldwork was conducted by interviewers hired by the Mauritius Institute of Health. Smokers were defined as having smoked more than 100 cigarettes in their lifetime and at least once in the past 30 days. Table 3 presents the demographic characteristics of the ITC Mauritius Wave 2 Survey sample.

**Table 3. Demographic Characteristics of ITC Mauritius Survey Respondents Participating at Wave 2**

	Recontact				Replenishment			
	Smokers/Quitters N=555		Non-Smokers N=225		Smokers N=46		Non-Smokers N=14	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
<b>Gender</b>								
Male	523	94.2	64	28.4	45	97.8	5	35.7
Female	32	5.8	161	71.6	1	2.2	9	64.3
<b>Age</b>								
18-24	46	8.3	19	8.4	4	8.7	-	-
25-39	174	31.4	77	34.2	9	19.6	4	28.6
40-54	209	37.7	78	34.7	18	39.1	5	35.8
55+	126	22.7	51	22.7	15	32.6	5	35.8
<b>Annual household income (MUR)</b>								
<15,000	371	66.8	132	58.7	26	56.5	9	64.3
15,000 to < 25,000	115	20.7	59	26.2	16	34.8	-	-
≥ 25,000	66	11.9	34	15.1	4	5.7	4	28.6
Not Stated	3	0.5	-	-	-	-	1	7.1
<b>Education</b>								
Up to Form 4	412	74.4	135	60.5	28	60.9	7	50.0
SC/HSC/Vocational	107	19.3	71	31.8	17	37.0	6	42.9
Some/completed university	35	6.3	17	7.6	1	2.2	1	7.1
<b>Marital status</b>								
Married	429	77.3	153	68.0	36	78.3	11	78.6
Divorced or Separated	18	3.2	14	6.2	2	4.3	1	7.1
Widowed	13	2.3	29	12.9	-	-	-	-
Single	95	17.1	29	12.9	8	17.4	2	14.3

## Types of Survey Questionnaires at Wave 1 and Wave 2

For the Wave 1 Survey, two versions of the survey were developed and fielded: one for smokers and one for non-smokers. The average length of the Wave 1 Survey was 60 minutes for smokers and 30 minutes for non-smokers.

In Wave 2, five versions of the survey were developed and fielded. The greater number of surveys was required to account for (1) two types of respondents at Wave 2—those who had already participated in Wave 1 (recontact smokers and recontact non-smokers) and those who were being newly recruited to replace those Wave 1 respondents who were lost to attrition (replenishment smokers and replenishment non-smokers); (2) those respondents who were smokers at Wave 1 but who reported not smoking at Wave 2 (quitters)—these respondents were of special interest because their change (from smoking to not smoking) represents the desirable behaviour change for tobacco control. The resulting five survey types, the participant type to whom the survey would be administered, and the average length of each type of Wave 2 survey is provided in Table 4.

**Table 4. Wave 2 Survey Characteristics**

Types of Survey at Wave 2	Participant Characteristics	Average Time (Mins)
1) Recontact Smoker Survey	Smokers who participated in Wave 1 and were still smoking at Wave 2.	60
2) Recontact Non-Smoker Survey	Non-smokers who participated in Wave 1 and were still non-smokers at Wave 2.	30
3) Recontact Quitter Survey	Smokers who participated in Wave 1, but who had quit smoking by Wave 2.	60
4) Replenishment Smoker Survey	Smokers who were newly recruited into the cohort at Wave 2 to replace a participant from Wave 1 who had dropped out or become ineligible.	60
5) Replenishment Non-Smoker Survey	Non-smokers who were newly recruited into the cohort at Wave 2 to replace a participant from Wave 1 who had dropped out or become ineligible.	30

### Content of the ITC Mauritius Survey

The ITC Mauritius Survey was developed by the project team with members from both Mauritius and Waterloo, Ontario, Canada. The survey methods and a large proportion of the survey questions were adapted from standardized protocols and surveys used in ITC surveys conducted in 19 other countries around the world.

## Smokers and quitters at Wave 2 responded to questions on:

- 1. Smoking- and cessation-relevant questions.** Smoking history and frequency, as well as current smoking behaviour and dependence, and quitting behaviours;
- 2. Knowledge and basic beliefs about smoking.** Knowledge of the health effects of smoking and important beliefs relevant to smoking and quitting, perceived risk and perceived severity of tobacco-related diseases;
- 3. Policy-relevant questions.** Awareness of, impact of, and beliefs relevant for each of the FCTC demand reduction policy domains (warning labels, taxation/price, advertising/promotion, smoke-free laws, 'light'/'mild');
- 4. Other important psychosocial predictors** of smoking behaviour and potential moderator variables (e.g., normative beliefs, self-efficacy, intentions to quit);
- 5. Individual difference variables relevant to smoking** (e.g., depression, stress, time perspective); and
- 6. Demographics** (e.g., age, marital status, income, education).

Respondents who were non-smokers were asked parallel survey questions from categories 2 to 6, as listed above for the Smoker Survey. Question phrasing was revised where necessary for the non-smoker context. The inclusion of non-smoker survey items is important in allowing accurate interpretation of survey results for the entire population of Mauritius. Between Wave 1 and Wave 2, each questionnaire type was updated to ensure that it was relevant for the target respondent (i.e., continuing smoker, quitter, etc.) within the context of the tobacco control landscape in Mauritius. The ITC Mauritius Surveys were first developed in English. The surveys were translated into Mauritian Creole by team members at the Mauritius Institute of Health. The translated surveys were then reviewed by a committee composed of five members who were bilingual in English and Creole and who also had experience in population surveys. Nuances in wording were discussed and resolved by this bilingual committee. This method of translation is generally favored over traditional double translation methods.

The ITC Mauritius Wave 1 and Wave 2 Survey questionnaires are available at:

<http://www.itcproject.org/research/surveys/mauritius>.

# THE CONTENT OF THIS REPORT

This ITC Mauritius National Report presents the findings from the most recent wave (Wave 2) of the ITC Mauritius Survey and compares these with the findings from Wave 1. The intent is to provide a detailed picture of the tobacco control policy landscape in Mauritius, including smokers' and non-smokers' beliefs, attitudes, and behaviours in the context of the 2009 implementation of the Public Health (Restrictions on Tobacco Products) Regulations 2008, and to describe how these may have changed over time from Wave 1 to Wave 2.

Wave 2 provides a continuing picture of the effectiveness of the smoke-free regulations over time, an evaluation of the effectiveness of pictorial warning labels, and also provides a second pre-implementation assessment of Mauritians' perceptions of the need for national cessation clinics and their support for these services.

In this report, weighted estimates presented for Wave 2 include respondents who participated in Wave 1 and Wave 2 (i.e., the longitudinal sample), as well as new respondents recruited into the cohort at Wave 2 to replace those who were lost to follow up (i.e., the Wave 2 replenishment sample). Quitters have been excluded from these analyses.

For analyses that are being compared **over time**, only the longitudinal sample of smokers and non-smokers who completed both the Wave 1 and Wave 2 Survey are included, unless otherwise stated. Thus, quitters at Wave 2 and the smoker and non-smoker replenishment samples have been excluded from these analyses.

For the purposes of making multi-country comparisons with other ITC countries, Wave 2 estimates for 'Smokers' include: smokers who participated in Wave 1 and Wave 2 (longitudinal sample), smokers recruited into the cohort at Wave 2 (replenishment smokers), and quitters at Wave 2 (where applicable). 'Non-smokers' include: non-smokers who participated at both Wave 1 and Wave 2, and non-smokers recruited into the cohort at Wave 2 (replenishment non-smokers).

# FINDINGS

## SMOKING AND QUITTING BEHAVIOUR

The Mauritius Government has made a commitment to support smoking cessation. A pilot smoking cessation clinic was opened in December 2008, with a plan to open more cessation clinics in 2011.

Waves 1 and 2 of the ITC Mauritius Survey assessed smokers' cigarette consumption, quitting behaviour, experiences with cessation services, as well as their attitudes towards smoking cessation clinics. This baseline information will later be compared with smokers' responses after the implementation of the clinics in 2011 to evaluate the impact of this initiative.

### Smoking Prevalence and Other Statistics

Wave 1 results demonstrated that almost one-third of adult men (18 years and older) (32.4%), and only 2.6% of adult women in Mauritius smoke. These smoking prevalence estimates are lower than those from the 2009 Mauritius Non Communicable Diseases Survey<sup>3</sup>, which found that 40.3% of males and 3.7% of females were smokers. Caution should be applied in making comparisons because of differences in survey methods.

Nearly all smokers in Mauritius (90%) are daily smokers. However, Mauritius has a very low average cigarette consumption among daily smokers – 10.0 cigarettes per day, the third lowest average consumption rate among ITC countries.

The majority of Mauritian smokers regret smoking (86%). A very high proportion of smokers (87%) in Mauritius have a negative/very negative overall opinion of smoking – one of the highest of 19 ITC countries, second only to Bangladesh.

### Quit Attempts, Plans to Quit, and Reasons to Quit

At the time of Wave 2 of the ITC Mauritius Survey, 48 participants (8%) of the smokers who participated at Wave 1 had quit smoking.<sup>8</sup> Overall, at Wave 2, more than two-thirds of smokers (71%) had ever tried to quit; and 35% had tried to quit in the last year. At Wave 2, more than half of Mauritian smokers (54%) had plans to quit smoking at some point in the future, compared to 75% of the smoker cohort at Wave 1.

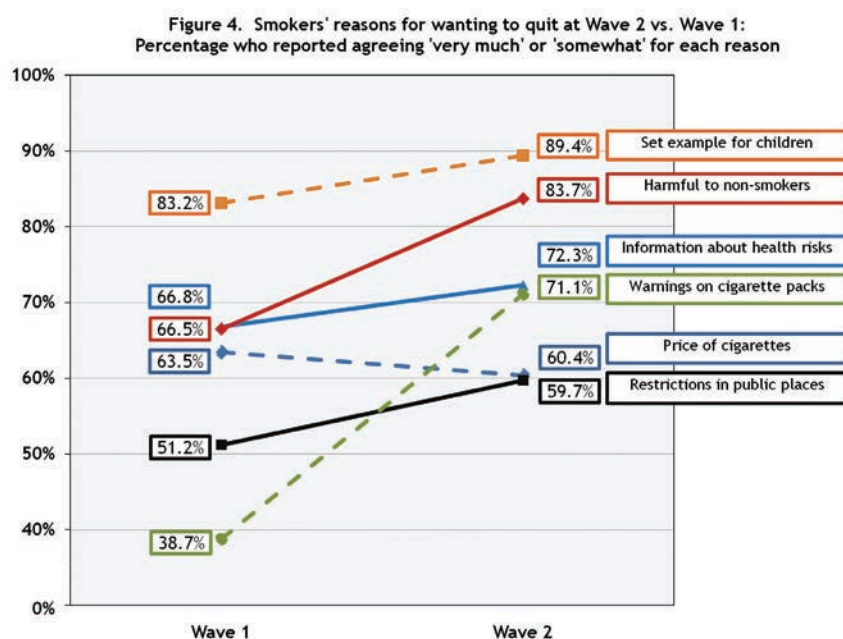
At Wave 2, of those smokers who wanted to quit, the most important reasons were:

- (1) To set an example for their children (89%),
- (2) To avoid personal health risks (86%),
- (3) For the benefit of non-smokers (84%),
- (4) In response to antismoking campaigns/ information (72%),
- (5) Because of the warning labels on cigarette packs (71%),
- (6) Because of the price (63%), and
- (7) Because their families want them to quit (61%).

Reasons to quit which changed the most between Waves 1 and 2, included:

- (1) Because of the warning labels on cigarette packs (71% at Wave 2 vs. 39% at Wave 1),
- (2) For the benefit of non-smokers (84% vs. 67%), and
- (3) Because of the smoking restrictions in public places (60% vs. 51%).

Thus at Wave 2, smokers' awareness of reasons to quit increased relative to Wave 1 most drastically for items related to the new health warnings and the smoke-free campaign.



8. Please recall that for the remainder of this section, and for much of this report (with the exception of multi-country comparisons), quitters at Wave 2 have been excluded from both the Wave 1 and Wave 2 estimates.



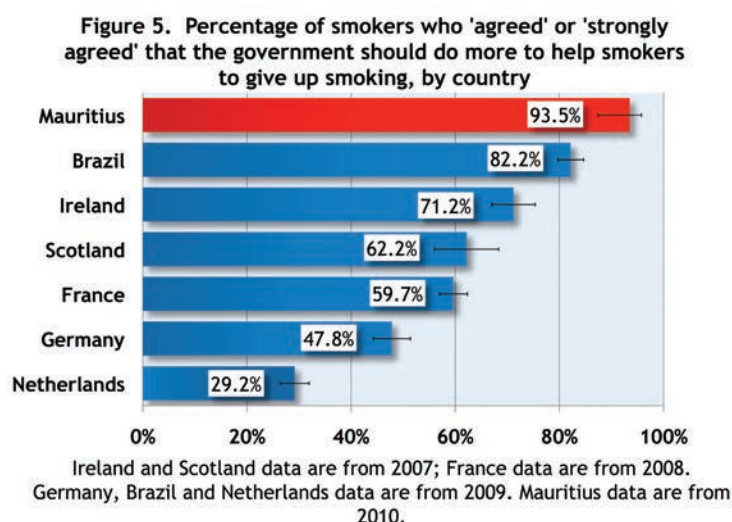
**The majority of smokers and virtually all non-smokers would support a total ban on tobacco products within 10 years, if the government provided assistance to help smokers quit.**

## Use of Cessation Services

At the time of the Wave 2 Survey, although over half of smokers (54%) who visited a doctor since the previous wave had received advice to quit, only 5% of those smokers received a referral to another service for help with quitting, and only 6% were provided with cessation pamphlets or brochures.

## Support for Cessation Services

At Wave 2, the majority of smokers (94%) and virtually all non-smokers (99%) 'agreed' or 'strongly agreed' that the Government of Mauritius should do more to help smokers quit smoking. In fact, the large majority of smokers (86%) and virtually all non-smokers (99%) agreed that they would support a total ban on tobacco products within 10 years, if the government provided assistance such as cessation clinics to help smokers quit.



Smokers stated that the following types of assistance would be 'very' or 'extremely' helpful for quitting: stop smoking medications (46%), one-to-one counselling (44%), a course on quitting (43%), quitlines (22%), and pamphlets (19%).

## Cessation Services at Wave 2 Compared to Wave 1

There were few changes in support for and use of cessation services at Wave 2. However, 36% of smokers were aware of the Mauritian government's plans to launch cessation clinics in 2011. This increased from 23% at Wave 1.

*The vast majority of Mauritian smokers have negative attitudes towards smoking and a high degree of readiness to quit smoking.*

# HEALTH WARNING LABELS

From 1999 to 2009, health warning labels on tobacco packages sold in Mauritius had one text-only message reading ‘GOVERNMENT WARNING: Smoking causes cancer, heart disease and bronchitis’. Using a pre-implementation and post-implementation measurement design for evaluation, the ITC Mauritius Wave 1 Survey was conducted prior to the implementation of pictorial health warnings and the Wave 2 Survey was conducted after the new set of eight pictorial health warnings were put into circulation. The official date of implementation of the pictorial health warnings was June 1, 2009; however, a grace period for conversion by the industry resulted in the first new pictorial warnings being circulated in October 2009. Wave 2 was conducted from August to October 2010, and so survey participants would have had 10 to 11 months of exposure to the new set of eight pictorial health warnings. The results below describe and compare respondents’ reactions to the text warnings (from Wave 1) and the graphic warnings (from Wave 2). In general, the Wave 2 Survey results demonstrate that the introduction of larger health warnings with graphic images substantially improved the effectiveness of the health warnings.

## Smokers’ Awareness of Health Warnings

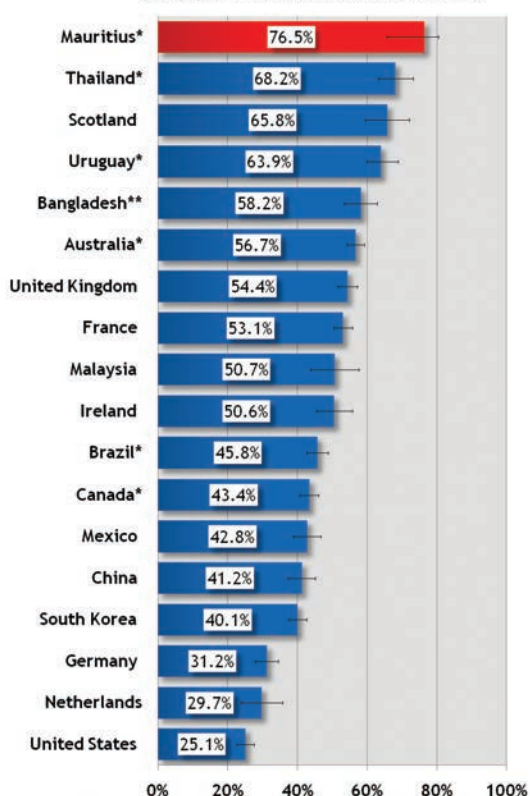
Awareness of health warnings on cigarette packs increased substantially among smokers from Wave 1 to Wave 2. The percentage of smokers reporting that they noticed the health warnings ‘often’ or ‘very often’ increased from 56% to 83%. In fact, the prevalence of noticing the warnings was *the highest* among 18 ITC countries, where appropriate statistical methods for comparison among ITC countries (as described on page 13 in The Content of this Report) yields a weighted estimate for Mauritius of 76.5% (Figure 6). In addition, the percentage of smokers reporting that they had read or looked closely at the warnings ‘often’ increased from 43% to 61%.

## Impact of Health Warnings

### Thinking about health risks

The percentage of smokers reporting that the health warnings made them think about the health risks of smoking ‘a lot’ increased from 21% to 41%. The prevalence of thinking about health risks of smoking ‘a lot’ (42%, using multi-country comparison methods) is the 3<sup>rd</sup> highest of 19 ITC countries (Figure 7).

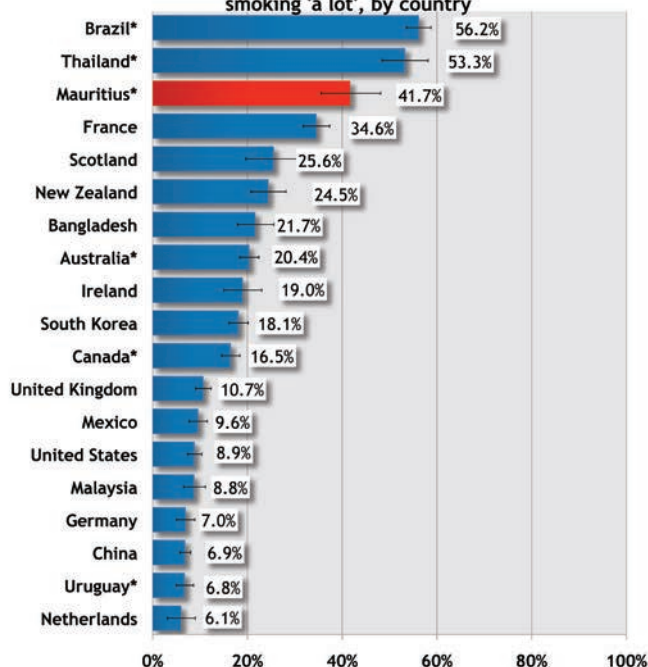
Figure 6. Percentage of smokers who ‘often’ or ‘very often’ noticed warning labels on cigarette packages in the last month, by country



Thailand, Scotland, and Ireland data 2006.  
 Malaysia data 2006/07.  
 Australia, Canada, UK, US, and China data 2007/08.  
 South Korea, Mexico, and France data 2008.  
 Uruguay data 2008/09.  
 Netherlands, Germany, Bangladesh, and Brazil data 2009.  
 Mauritius data 2010.

\*Countries with pictorial warning labels at time of survey.  
 \*\* ‘Very often’ was not a response option.

Figure 7. Percentage of smokers who said that warning labels on cigarette packages made them think of the health risks of smoking ‘a lot’, by country



Thailand, Scotland, and Ireland data 2006. Malaysia data 2006/07.  
 Australia, Canada, UK, US, and China data 2007/08.  
 South Korea, Mexico, and France data 2008. New Zealand and Uruguay data 2008/09.  
 Netherlands, Bangladesh, Germany, and Brazil 2009.  
 Mauritius 2010.

\*Countries with pictorial warning labels at time of survey.

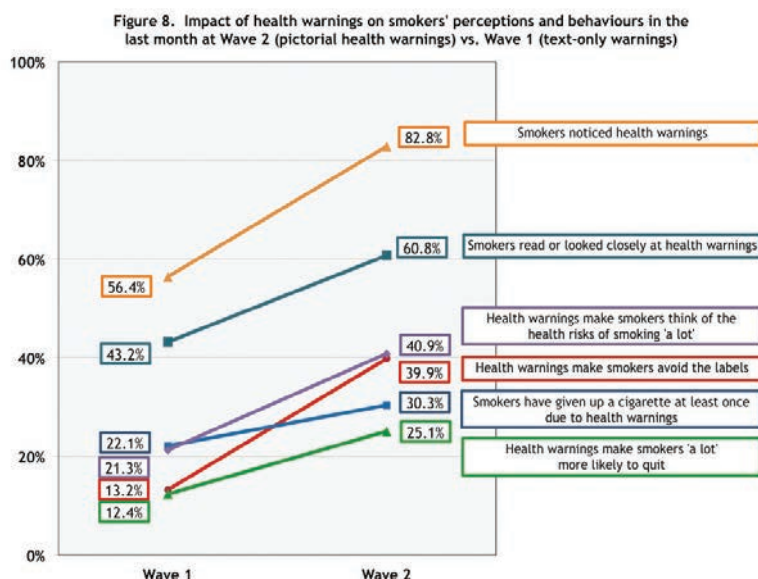
The new pictorial warnings evoked strong emotional responses among Mauritian smokers; however the warnings were still perceived as realistic and not ‘over the top’ or ‘sensational’.

### Connection between health warnings and likelihood of quitting

The percentage of smokers reporting that the health warnings made them ‘a lot more’ likely to quit smoking increased from 12% to 25% (Figure 8). The percentage of smokers reporting that the health warnings made them ‘a little more’ or ‘a lot more’ likely to quit increased from 39% to 68%.

### Connection between health warnings and forgoing a cigarette

The percentage of smokers reporting that the health warnings had stopped them from having a cigarette at least once in the past month increased from 22% to 30% (Figure 8).

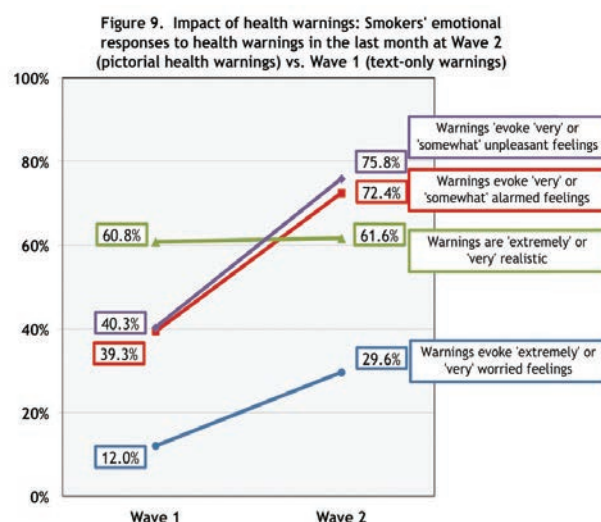


### Emotional response to the health warnings

Emotional responses to health warnings are related to their potential effectiveness. There was strong evidence that the introduction of larger warnings with graphic images achieved this objective (Figure 9). The percentage of smokers who reported feeling ‘somewhat’ or ‘very’ alarmed by the health warnings increased from 39% to 72%. The percentage of smokers who reported feeling ‘somewhat’ or ‘very’ unpleasant feelings by the health warnings increased from 40% to 76%. The percentage of smokers who reported being ‘very’ or ‘extremely’ worried by the warnings increased from 12% to 30%.

### Perceptions that the health warnings are realistic

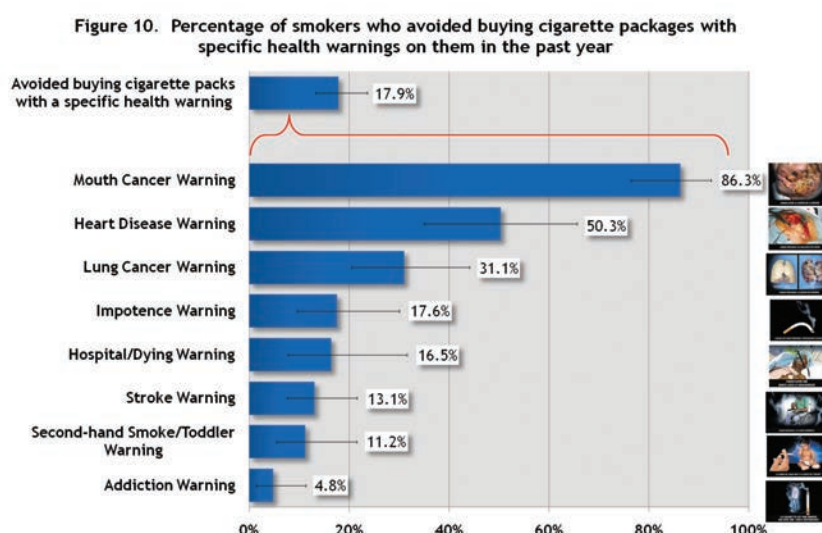
Given the much more powerful emotional responses that the graphic warnings evoked, it is interesting that the percentage of smokers reporting that they thought the warnings were ‘realistic’ were nearly identical, increasing from 61% to 62% (Figure 9). This demonstrates that the graphic warnings were not perceived as ‘over the top’ or ‘sensational and unrealistic’, as some critics had suggested would happen.





### Avoidance of the pictorial health warnings

Avoiding the health warnings is another indicator that they are having an impact. The percentage of smokers reporting that they had taken steps to avoid seeing the health warnings increased substantially from 13% to 40%. At Wave 2, 18% of Mauritian smokers reported avoiding buying a certain pack because of the specific pictorial warning on it within the past year (Figure 10). Of these, the vast majority (86%) reported avoiding the mouth cancer label (Label #3 in Figure 2), 50% had avoided the heart disease label (Label #1), one third (31%) had avoided the lung cancer label (Label #5), 18% had avoided the impotence label (Label #8), 16% had avoided the hospital/dying label (Label #7), 13% had avoided the stroke label (Label #2), 11% had avoided the second-hand smoke/toddler label (Label #6), and 5% had avoided the addiction label (Label #4) (Figure 10).



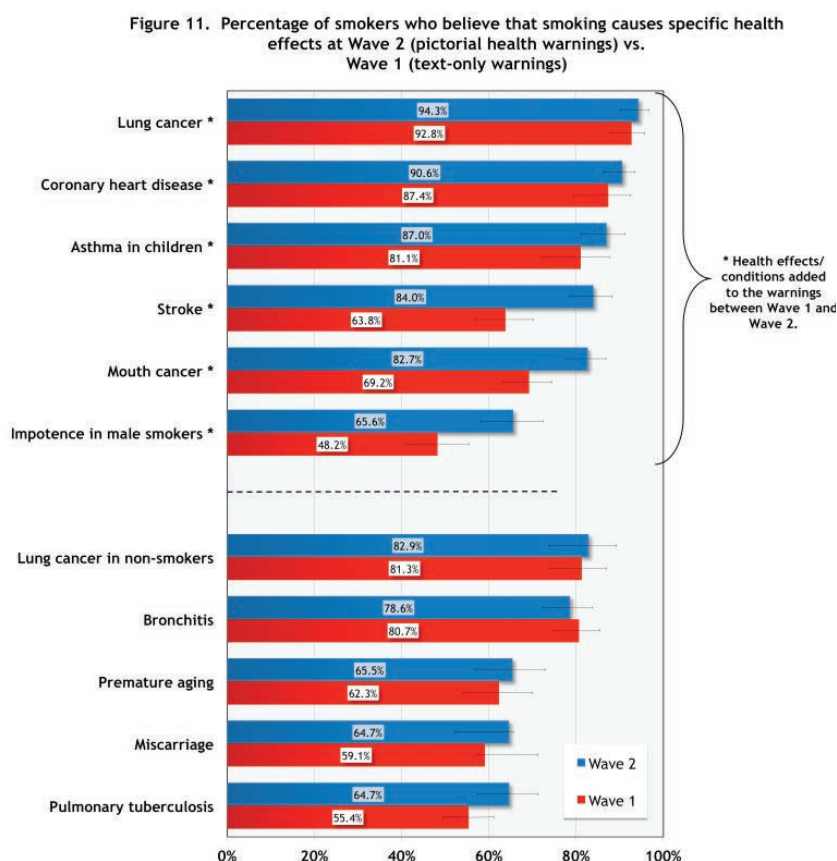
### Knowledge of the Harms of Tobacco Use

At each survey wave, smokers and non-smokers were asked a series of questions about their perceptions of the health effects and diseases that may be caused by smoking. Content area from six of the eight pictorial warnings were included in this series of 11 questions which asked about health conditions such as stroke, impotence, mouth cancer, lung cancer in each of smokers and non-smokers, miscarriage, asthma in children, coronary heart disease, etc. (Please refer to the ITC Mauritius Wave 2 Recontact Smoker Survey for a comprehensive list of possible health effects).

Of the 11 possible health effects assessed in the survey, six corresponded to health risk topics addressed by the images and text of the new pictorial health warnings. These included: coronary heart disease (Label #1 in Figure 2), stroke (Label #2), mouth cancer (Label #3), lung cancer in smokers (Label #5), second-hand smoke harmful to children (Label #6), and impotence in male smokers (Label #8).

At Wave 2, Mauritian smokers most often cited the following health effects caused by smoking: (1) lung cancer in smokers (94%), (2) coronary heart disease (91%), (3) asthma in children (87%), (4) lung cancer in non-smokers (83%), (5) mouth cancer (83%), and (6) stroke (84%) (Figure 11). Results were similar for non-smokers, who most often cited the following health effects of smoking: (1) lung cancer in smokers (99%), (2) coronary heart disease (96%), (3) mouth cancer (95%), (4) asthma in children (92%), (5) lung cancer in non-smokers (92%), and (6) stroke (88%).

In both smokers and non-smokers, perceptions of health effects caused by smoking changed most drastically between Waves 1 and 2 for the following conditions or diseases: (1) stroke (84% of smokers at Wave 2 vs. 64% at Wave 1; and 88% of non-smokers at Wave 2 vs. 72% at Wave 1), (2) impotence in male smokers (66% of smokers at Wave 2 vs. 48% at Wave 1; and 70% of non-smokers at Wave 2 vs. 63% at Wave 1), and (3) mouth cancer (83% of smokers at Wave 2 vs. 69% at Wave 1; and 95% of non-smokers at Wave 2 vs. 79% at Wave 1) (Figure 11). These three health topics that showed the greatest degree of change among smokers' and non-smokers' risk perceptions were all topics addressed by the new pictorial health warnings in Mauritius, and the mouth cancer (Label #3) and impotence (Label #8) health warnings were among the labels that some smokers most often took steps to avoid.

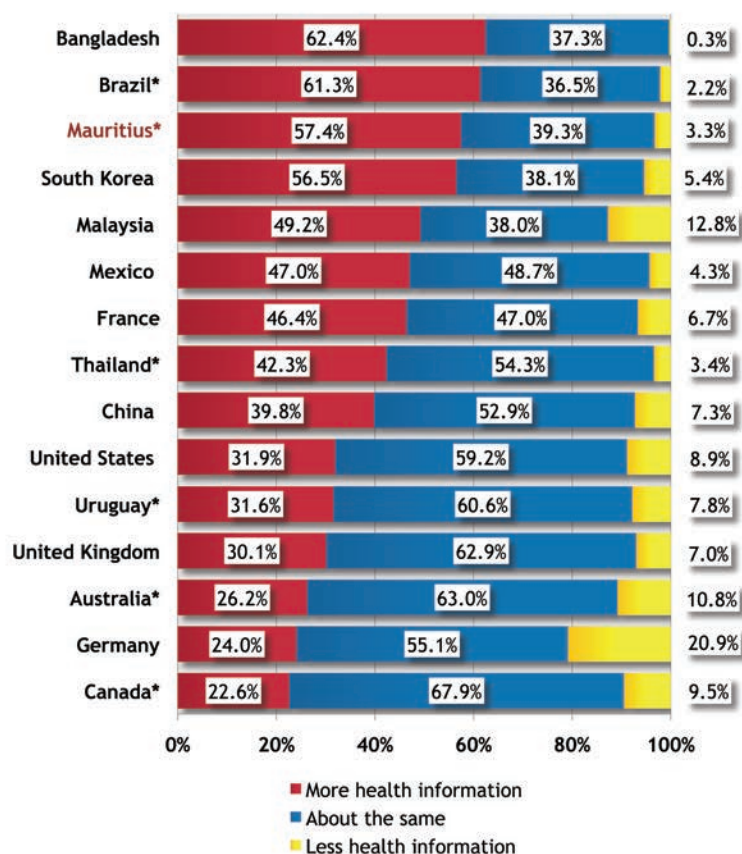


Knowledge of specific harms of tobacco use increased among smokers for all topics addressed by the new pictorial warnings.

## Support for Enhanced Health Warnings

Despite the introduction of the new graphic health warnings, Mauritians still want more information about the health risks of smoking to appear on cigarette warning labels. Although the percentages had declined somewhat—which is understandable given the dramatic changes—still the majority of smokers (55%, down from 64%) and non-smokers (81%, down from 90%) agreed that there should be more health information on Mauritian health warnings. The prevalence of wanting more information on health warnings (57%, using multi-country comparison methods) is the 3<sup>rd</sup> highest among 15 countries (Figure 12).

**Figure 12. Cigarette smokers' opinions on whether there should be more, less, or the same amount of health information on cigarette packages, by country**



Thailand data are from 2006. Malaysia data 2006/07. China, US, UK, Australia and Canada data 2007/08. South Korea, Mexico, and France data 2008. Uruguay data 2008/09. Brazil, Bangladesh and Germany data 2009. Mauritius 2010.

\*Countries with graphic warning labels at time of survey

*More than half of Mauritian smokers still want more information on cigarette packages, even after the implementation of large pictorial warnings.*

# SMOKE-FREE PUBLIC PLACES AND WORKPLACES

On March 1, 2009, Mauritius implemented a smoke-free law banning smoking in all indoor public places, including hospitality venues such as restaurants, tea rooms, and bars/pubs. The ITC Mauritius Survey Wave 1 provided an initial assessment of the effectiveness of the law 2 to 3 months after its introduction. The Wave 2 Survey, conducted 18 to 19 months after the strengthened smoke-free regulations were implemented, provides an ongoing assessment of the success of these policies. Overall, the majority of Mauritian smokers (84%) and non-smokers (80%) notice less smoke in the air indoors in public places since the smoking ban was implemented on March 1, 2009.

## Noticing Media Campaigns on the Dangers of Environmental Tobacco Exposure

Mauritius has made efforts to increase public awareness and communication about the harmful effects of exposure to tobacco smoke and the use of tobacco products. In addition to the ongoing public education campaign, a government campaign to raise awareness of the new regulations through mass media and other channels began in February 2009.

Mauritians appear to be somewhat aware of campaign messages related to the dangers of environmental tobacco smoke. At Wave 2, smokers and non-smokers had both noticed such information in the past 6 months on cigarette package warnings (56% of smokers and 40% of non-smokers). A minority of smokers and non-smokers in Mauritius had noticed information related to the hazards of environmental tobacco smoke in the past 6 months in the workplace (34% of smokers and 28% of non-smokers), in stores (30% and 25%), on television (28% and 30%), on posters (29% for both), on the radio (22% and 26%), and in newspapers (20% and 24%).

## Smoke-free Regulations in Restaurants and Bars

At Wave 2, about 18 months after the March 1, 2009 smoking ban was implemented in hospitality venues, the vast majority of smokers (91%) and non-smokers (89%) understood that 'smoking is not allowed in any indoor areas' of restaurants and tea rooms. A minority of smokers (6%) and non-smokers (9%) believed that 'smoking is allowed only in some indoor areas', and an additional 2% of smokers and 1% of non-smokers believed that there were 'no rules or restrictions'. With respect to bars and pubs, more than three-quarters of smokers (79%) and non-smokers (77%) understood that 'smoking is not allowed in any indoor areas' of bars; however, 14% of smokers and 15% of non-smokers believed that 'smoking is allowed only in some indoor areas', and a minority of smokers (7%) and non-smokers (8%) believed that there were 'no rules or restrictions'.

Smokers and non-smokers report that there is a lack of total compliance with the recent bans on smoking in hospitality venues about 18 months after the strengthened regulations were introduced. Of the 55% of smokers (n=284) who had visited a restaurant or tea room in the past 6 months, only 57% reported that restaurants were totally enforcing the smoke-free law. This level of compliance with the regulations is somewhat lower than that reported at Wave 1 (64%), just 2 to 3 months after the introduction of the smoking ban in hospitality venues. Similarly, of the 35% of smokers (n=186) who had visited a bar/pub in the past 6 months, only 34% reported that bars/pubs were totally enforcing the smoke-free law, down from 45% at Wave 1.

Of the 56% of smokers (n=284) who had visited a restaurant or tea room in the past 6 months, 17% reported the presence of smoking in restaurants/tea rooms (this is similar to the 19% reported at Wave 1). Figure 13 shows the effectiveness of smoking bans in restaurants in Mauritius compared to other ITC countries. Note that estimates for the multi-country comparisons differ slightly from the longitudinal estimates reported above, due to the use of appropriate statistical methods for comparison.

Figure 13. Percentage of smokers who noticed smoking in restaurants at last visit, before and after smoking bans in France, Germany, Ireland, Mauritius and the Netherlands

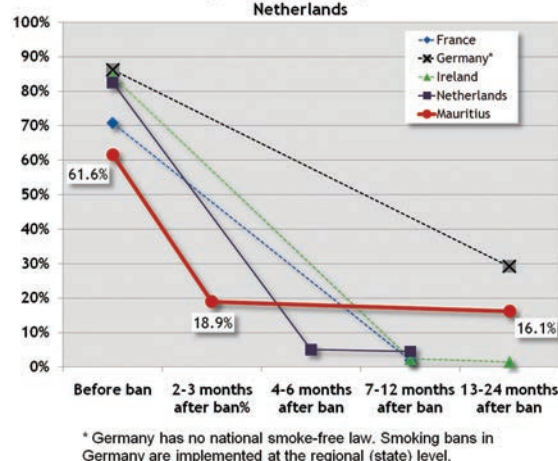
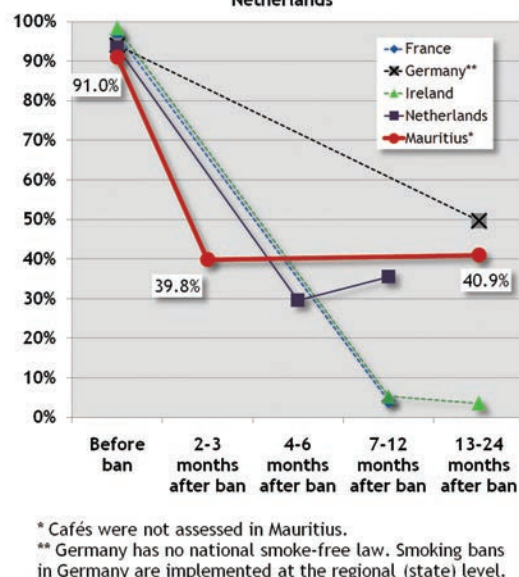


Figure 14. Percentage of smokers who noticed smoking in cafés, pubs and bars at last visit, before and after the hospitality smoking bans in France, Germany, Ireland, Mauritius and the Netherlands





## Smoke-free Regulations in Restaurants and Bars (continued)

Of the 35% of smokers who had visited a bar/pub since the ban, 42% reported the presence of smoking in bars/pubs (contrasted with 39% at Wave 1). Figure 14 shows the effectiveness of smoking bans in bars and pubs in Mauritius compared to other ITC countries, using multi-country comparison methods (thus, estimates for the multi-country comparisons differ slightly from the longitudinal estimates reported above).

A comparison of Wave 2 results with those from Wave 1 indicates that compliance with the smoke-free laws in restaurants and bars in Mauritius has not changed over time. But this level of observed smoking is also considerably higher than that found in other ITC countries where comprehensive smoke-free laws have been implemented (e.g., in Ireland, after the smoking ban in 2004, noticing smoking in hospitality venues decreased from 98% to 5%; and in France (2008) from 97% to 4%), which suggests that the planned initiative to strengthen the effectiveness of the smoke-free law in Mauritius is justified.

## Smoke-free Regulations in Workplaces

The efforts of the government of Mauritius to enact a comprehensive ban on smoking indoors in the workplace are ongoing.

At Wave 2, about two-thirds of Mauritian smokers (64%) and three-quarters of non-smokers (78%) worked at indoor workplaces. Of these, three-quarters of smokers (75%) and the large majority of non-smokers (93%) believed that, with respect to the workplace smoking policy, 'smoking is not allowed in any indoor area'. A minority of smokers (15%) and non-smokers (5%) believed that 'smoking is allowed only in designated indoor areas', and an additional 10% of smokers and 2% of non-smokers believed that there are 'no rules or restrictions' related to smoking in their workplace (Figure 15).

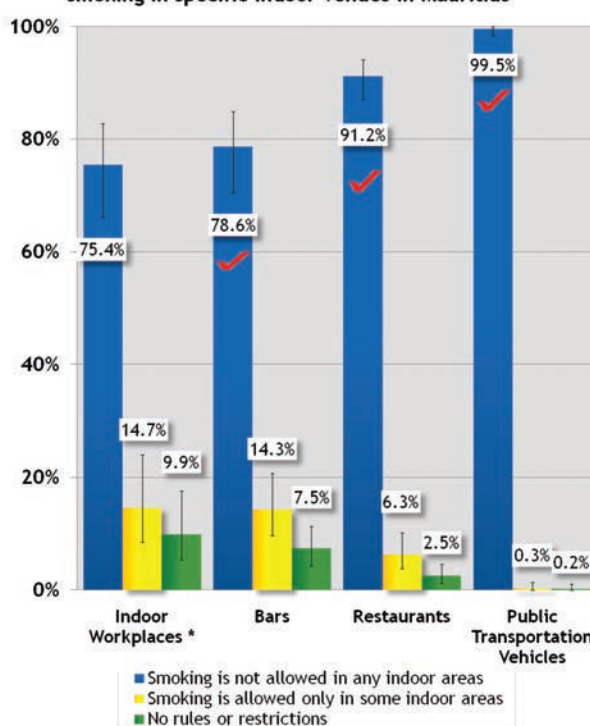
Although the majority of smokers who worked indoors (73%) reported that no one had smoked in indoor areas at work in the past month, 13% observed smoking in designated areas only, and an additional 13% observed people smoking indoors in areas that were not designated for smoking. Of non-smokers who worked indoors, 85% had not observed anyone smoking in indoor areas at work, 6% observed smoking in designated area only, and 8% observed people smoking indoors in areas that were not designated for smoking.

## Smoke-free Regulations in Public Transit and Other Public Places

Smoking while traveling by public transportation has been banned in Mauritius since 1999; however, the Public Health (Restrictions on Tobacco Products) Regulations 2008 increased the penalties for failure to adhere to the regulations. Virtually all smokers (99%) are aware that smoking is not allowed in any public transit vehicle in Mauritius. Few users of the public transportation system have noticed smoking while traveling (8% of smokers, and 10% of non-smokers); 76% of smokers and 60% of non-smokers report that smoke-free laws on public transit are being totally enforced. Although these results are encouraging, the level of compliance is not as high as in some other ITC countries where similar smoking bans on public transportation have been implemented.

The 2008 Regulations stipulate that smoking is not allowed in the following public places: in public gardens, outdoors at recreational facilities, outdoors at health facilities, and outdoors at educational facilities. Smoking is permitted on public beaches in Mauritius. The majority of smokers and non-smokers were aware of the regulations for public gardens (70% of smokers and 77% of non-smokers), outdoors at recreational facilities (93% and 89%), outdoors at health facilities (97% and 96%), and outdoors at educational facilities (97% and 96%). With respect to beaches, 53% of smokers believed that there are 'no rules or regulations', an additional 24% believed that 'smoking is allowed only in certain designated areas', and 23% thought that 'smoking is not allowed anywhere'. One-third of non-smokers (34%) believed that there are 'no rules or regulations' for smoking on public beaches, an additional quarter (22%) believed that smoking was permitted only in designated areas, and 44% thought that smoking was not permitted anywhere.

**Figure 15. Smokers' awareness of the laws or regulations about smoking in specific indoor venues in Mauritius**



✓ Indicates the correct interpretation of the smoke-free laws in Mauritius.  
 \* Some indoor workplaces may have designated smoking areas.

## Effect of Smoke-free Regulations on Smoking in the Home

The smoke-free policies that came into effect prior to Wave 1 continue to demonstrate effectiveness. Over half (53%) of smokers do not allow smoking in their homes at all, which is a slight increase from 49% at Wave 1, and about 26% restrict residential smoking areas. Of those smokers who smoke in their home, 40% intend to make their homes completely smoke-free within the next year.

Of those Mauritian smokers who smoke in their homes, half (50%) continue to smoke the same amount of cigarettes inside their home as they did one year ago (vs. 60% at Wave 1). However, more than one-third of smokers (43%) actually smoke less at home compared to one year ago (vs. 30% at Wave 1); and 6% of smokers smoke more compared to one year ago (vs. 10% at Wave 1).

One argument that is sometimes made against smoke-free hospitality laws is that they might lead to displacement of smoking from the bars and restaurants to the home. It is clear from the results in Mauritius, as in all other ITC countries in which evaluation of smoke-free laws has been conducted, strong comprehensive smoke-free laws in restaurants, bars, and other public places, do NOT lead to greater levels of smoking in the home.<sup>9, 10</sup>

## Support for Smoke-free Public Places, Workplaces, and Cars with Passengers

Mauritius is the first country to ban smoking in cars with passengers (some other jurisdictions have banned smoking in cars with children). The majority of smokers ‘support’/‘strongly support’ ban the ban on smoking in private vehicles with passengers (95%). Of Mauritians who own a car, approximately 78% of smokers and 95% of non-smokers do not allow smoking in their vehicles.

Mauritian smokers ‘support’/‘strongly support’ smoking bans in restaurants/tea rooms (91%), workplaces (89%), and bars/pubs (83%). The large majority of non-smokers also ‘strongly support’ bans in these venues (98%, 96%, and 97%, respectively).

With respect to outdoor venues, the vast majority of Mauritians ‘support’/‘strongly support’ a smoking ban outdoors at recreational facilities, outdoors at health facilities, and outdoors at educational institutions, where 96% to 97% of both smokers and non-smokers stated this for each of these three venues. Three-quarters of smokers (76%) ‘support’ smoking bans in public gardens, and just half (50%) of smokers ‘support’ a smoking ban on public beaches. For non-smokers, 92% and 86% ‘support’ smoking bans in public gardens and beaches, respectively.

9. Fong, G.T., Hyland, A., Borland, R., Hammond, D., Hastings, G., McNeill, A., et al. (2006) Reductions in tobacco smoke pollution and increases in support for smoke-free public places following the implementation of comprehensive smoke-free workplace legislation in the Republic of Ireland: findings from the ITC Ireland/UK Survey. *Tob Control*, 15, iii51-iii58.

10. Hyland, A., Hassan, L.M., Higbee, C., Boudreau, C., Fong, G.T., Borland, R. et al. (2009). The impact of smokefree legislation in Scotland: results from the Scottish ITC Scotland/UK longitudinal surveys. *Euro J Public Health*, 19, 2, 198-205.

*Consistent with findings in other ITC countries, the smoke-free laws in Mauritius did not lead to greater levels of smoking in the home — more than one-third (43%) of smokers reported smoking less at home than they did before the bans.*



“Our ultimate goal should be to make Mauritius a tobacco-free country. I am confident that together we can make it. It is high time to say no to cigarettes and to warn the tobacco industry that it is knocking at the wrong door.”

S. Hanoomanjee (Mrs.), Minister of Health and Quality of Life, June 3, 2010 (ITC Mauritius Project Dissemination Workshop)

# CONCLUSIONS AND IMPLICATIONS OF THE FINDINGS

## Impact of the Implementation of Pictorial Health Warnings on Cigarette Packages

Results from the ITC Mauritius Survey Wave 2 demonstrate that the implementation of some of the largest pictorial health warning labels in the world has been successful in raising smokers' awareness and knowledge about the health risks of smoking, has made an increased contribution to leading smokers to think about quitting over time, and has evoked strong emotional reactions from smokers.

Mauritian smokers' awareness of health warnings on cigarette packages increased substantially between Wave 1 and Wave 2; and substantially more smokers had read or looked closely at the pictorial health warnings within a month compared to the previous text-only warnings. Noticing warnings was highest in Mauritius among 19 other ITC countries. At Wave 2, substantially more smokers compared to Wave 1, stated that health warnings on cigarette packages made them think about the health risks of smoking 'a lot'. Similarly, substantially more smokers at Wave 2 found that the health warnings made them 'a lot' more likely to quit smoking. Mauritius is the 3<sup>rd</sup> highest for thinking about the risk of health warnings 'a lot' among 19 ITC countries.

Participants at Wave 2 reported relatively strong emotional responses to the pictorial warnings. These included alarm, unpleasant feelings, and worry, which were substantially higher than the feelings evoked by the text-only warnings in Wave 1. Some smokers reported taking steps to avoid seeing the health warnings and a minority of smokers also avoided buying packages with certain images on them. Health warning labels most frequently avoided included those that depicted mouth cancer, heart surgery, and lung cancer. Both smokers and non-smokers' perceptions of health effects caused by smoking changed most drastically between Waves 1 and 2 for stroke, impotence in male smokers, and mouth cancer in smokers — three health topics that were all addressed by the new pictorial health warnings in Mauritius.

Despite the introduction of the new graphic health warnings, Mauritians still want more information about the health risks of smoking to appear on cigarette warning labels. This suggests that the government may wish to begin developing the second set of pictorial health warnings in Mauritius, and may consider adding information about additional conditions associated with smoking that were not addressed in the first set. Information about how to access cessation services may also improve effectiveness of the warning labels.

## Impact of the Smoke-free Regulations in Public Places and Workplaces

A major objective of the Public Health (Restrictions on Tobacco Products) Regulations 2008 was to introduce comprehensive smoking bans in most public places in Mauritius, and to move towards making workplaces smoke-free. One and a half years after the smoking ban was implemented (on March 1, 2009) the majority of Mauritians notice less smoke in the air indoors in public places. Support for smoke-free public places, workplaces, and cars carrying passengers is very high, with the exception of public gardens and beaches. The majority of smokers are aware of the bans in indoor and outdoor public places.

Despite these successes, smokers and non-smokers report a lack of compliance with the bans in hospitality venues, and in particular, in bars. In fact, compliance has remained the same, or has even decreased slightly compared to Wave 1, which was conducted just 2 to 3 months after the ban. Evidence from other ITC countries (i.e., Ireland and France) demonstrates that successful smoking bans in restaurants and bars achieve post-ban reports of noticing smoking at 5% or less. Thus, public education and increased enforcement of the smoke-free regulations in hospitality venues are important areas for future efforts in Mauritius. These activities are currently under development by the tobacco control community in Mauritius. The efforts of the Mauritius Ministry of Health to enact a comprehensive ban on smoking indoors in the workplace are ongoing. Smokers and non-smokers both reported that in the majority of their workplaces, people do not smoke indoors. However, even within designated smoking areas, compliance with the regulations in workplaces in Mauritius is not complete. Efforts to enforce the existing smoke-free workplaces, as well as continuing efforts to change the legislation to mandate 100% smoke-free workplaces, are important activities for Mauritius in the future.

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# The International Tobacco Control Policy Evaluation Project

## The ITC Project

### Evaluating the Impact of FCTC Policies in...

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