



JULY 2020

INDIA

COUNTRY REPORT

PREPARED BY
the Foundation for a Smoke-Free World

FOUNDATION FOR A
SMOKE-FREE WORLD

“The true measure of any society can be found in how it treats its most vulnerable members.”

– Mahatma Gandhi

Preface

The Foundation for a Smoke-Free World is an independent, non-profit organization with a mission to end smoking in this generation and to reduce global death and disease caused by tobacco. As part of this mission, we are committed to filling key knowledge gaps in our collective understanding of tobacco production and use, especially in the low- and middle-income countries where it is increasingly grown and consumed. In that vein, this report provides a glimpse of the tobacco landscape in India. As one of the world’s largest producers and consumers of tobacco, understanding this landscape and the opportunities to transform – both literally and figuratively – have never been more important. This report only scratches the surface of the forces shaping that landscape, but we hope that, in doing so, it encourages others to make even greater explorations of it.

Comments on the report:

“This report is a rich, insightful, and authoritative publication. It will be a major source of information for those who wish to understand the full impact of the tobacco industry in India. As a nation that is a significant producer, as well as major consumer of tobacco products, the report makes clear the complex interactions between the health, economic, demographic, and societal impacts of the sector. It also contains some key policy recommendations for consideration by the Indian government.”

Professor John Struthers

Director of the Center of African Research on Enterprise and Economic Development, School of Business and Enterprise, University of the West of Scotland

Advisor, Advisory Board for Agriculture and Livelihoods, Foundation for a Smoke Free World

“A very well-compiled, comprehensive, and path-setting document! As a clinician, my impression is that an average Indian is aware of the dire health consequences of tobacco use without knowing the transformational path. One possible way forward would be filling this knowledge gap. Clinicians with the necessary tobacco cessation skills and means can potentially fill this critical void to not only correct the symptoms but to treat a tobacco user holistically.”

Dr. Ankur Sharan, MBBS

Jr. Doctor at Dr. Sandeep Kumar’s Clinic

Mahanagar, Lucknow, Uttar Pradesh

“The report provides rich facts related to the socio-economic and health aspects of tobacco use and its supply chain. These data establish a clear baseline on which to build future research—especially with respect to concerns that tobacco and tobacco alternatives raise. As an economist, I note that tax as a behavior-changing tool has not been adequately used to reduce demand for smokeless and bidi products in India. On the contrary, pricing of nicotine replacement products remains unacceptably high, thus widening the inequity gap for accessing tobacco dependence treatments.”

Dr. Amir Ullah Khan

Professor, Indian School of Business

“My experience as a dentist among some of the most disadvantaged urban populations in India—the slum dwellers in Mumbai—is reflected well at the macro level in the report’s findings. Putting a spotlight on oral cancer prevalence and the role of smokeless tobacco is commendable, but its interplay with areca nut, poor hygiene, and access to healthcare needs to be studied further. It is important to note that the urban poor can often have worse access to primary healthcare than their rural counterparts, and limited preventive medicine support. Mobile technologies are fundamentally changing the way my clients across socio-economic strata are accessing health and well-being services.”

Dr. Gaurav Kale

Dentist, Mumbai, Maharashtra
Secretariat, Tobacco Research and Cessation Network (TRC-Net)

“This report is a very well-studied and summarized document. The fact that tobacco abuse is a major and urgent public health problem is clearly highlighted. As tobacco plays a role in noncommunicable and communicable diseases, it must be paid serious attention to. It is no doubt driving up noncommunicable disease burden in India widening health inequities in poorer and rural populations. Tobacco use related to tuberculosis is of great concern and we must address this interrelation. We must also update the medical curricula to better integrate tobacco cessation treatments. This will provide the intellectual fodder to boost a new generation of tobacco cessation leaders in India.”

Dr. Padmakar Pandit

Retired Professor, Officer on Special Duty and Dean, Govt Medical Colleges, Pune, Maharashtra

“The report summarizes the tobacco use and livelihood landscape of India well. It is abundantly clear that tobacco significantly contributes to India’s disease and death burden, and to the discrepancies between urban and rural populations. The report also demonstrates the impact of tobacco among those in the supply chain. How do we begin to address a massive problem affecting 300 million Indians? We need to create champions to initiate change at the grassroots. Healthcare practitioners can become local champions of practical and affordable tools for achieving tobacco cessation among their peers and patients. This is essential to bridge the gap between the World Health Organization’s policy and India’s practice, and to help the country become healthier and tobacco-free.”

Dr. Pooja Patwardhan, Physician and Tobacco Cessation Expert

Clinical Director, Centre for Health Research and Education, UK

“This report sharply brings into focus India’s massive tobacco use prevalence, the rapid epidemiological transition and the resulting national noncommunicable disease burden. There is an urgent need to guide the nearly 300 million current tobacco users to quit the myriad forms of risky tobacco products consumed in India. To achieve that, a strategic combination of scalable low-cost innovations, 21st century technologies and optimized existing national vertical programs can provide the highest ‘health ROI’. India is ripe for adapting global best practices for tobacco cessation delivery, be it in mobile apps or licensed nicotine replacement therapy products. Special attention is needed to ensure that cessation support is universally accessible and affordable.”

Dr. Sudhanshu Patwardhan, Nicotine Science and Policy Expert

Director, Centre for Health Research and Education, UK.

EXECUTIVE SUMMARY



Health and Health Care

- Amidst rapid but unequal economic development, India is undergoing a critical epidemiological transition with considerable interstate variations. Tobacco drives a disproportionate burden of both communicable and noncommunicable diseases.
- Smoking takes a stunning toll on the health of Indians: In 2018, the World Health Organization (WHO) estimated that tobacco use accounted for one million deaths, or 9.5% of all deaths in the country. Notably, more than 350,000 deaths annually are associated with smokeless tobacco use.
- Tobacco causes a substantial economic burden, totaling an estimated \$22.4 billion USD annually.
- The country's health care system has been not able to respond forcefully enough to the challenge. In 2018, India spent roughly 1.3% of its GDP on health care, one of the lowest amounts of health expenditure globally.
- Less than a third of physicians receive training and few feel prepared to provide tobacco cessation services and, most strikingly, a third of physicians smoke.

Tobacco Use

- Three broad groups of tobacco products are used: conventional cigarettes, bidis, and smokeless tobacco. With 267 million tobacco users, India has some of the highest rates of tobacco use in the world.
- Overall, tobacco use is higher in rural areas, among those with a lower socioeconomic status and those with lower levels of education. Use is also significantly higher among men (42.4%) than women (14.2%). Finally, there is substantial variation in the prevalence of tobacco use by state, ranging from 9.7% in Goa to 64.5% in Tripura.

Economy, Employment, and Trade

- In addition to being a major consumer, India is one of the largest producers of tobacco in the world with the vast majority of tobacco production concentrated in three states.
- As the yield of tobacco increased and its price became more volatile, there has been a steady interest in identifying alternative uses including extracting several compounds from tobacco leaf for alternative uses.

EXECUTIVE SUMMARY

(CONTINUED)

- There are 10-45 million who depend on the tobacco sector for their livelihood.
- Among a multitude of tobacco-related jobs, bidi rolling and tendu leaf picking are disproportionately carried out by women and are associated with low wages, exploitative practices and various occupational hazards.

Regulation of Tobacco: Status, Benefits, and Gaps

- India signed and ratified the Framework Convention on Tobacco Control (FCTC), thereby affirming its commitment to use the WHO's MPOWER measures to curb tobacco use.
- In that vein, the country has increased advertising about the harms of tobacco use, passed legislation designating smoke-free areas, banned tobacco advertisements (with the exception of point-of-sale and on-pack advertising), ensured health warnings were added to cigarette packs, introduced a tiered excise tax on cigarettes, and established tobacco cessation clinics.
- Despite these efforts, there remains significant room for improvement, with studies finding that many of these measures have not been optimally or fully implemented.
- In 2011, India banned food products containing nicotine (e.g, gutkha), but a substantial number of people continue to use such products.
- E-cigarettes are relatively new to India but now face a nationwide government ban.



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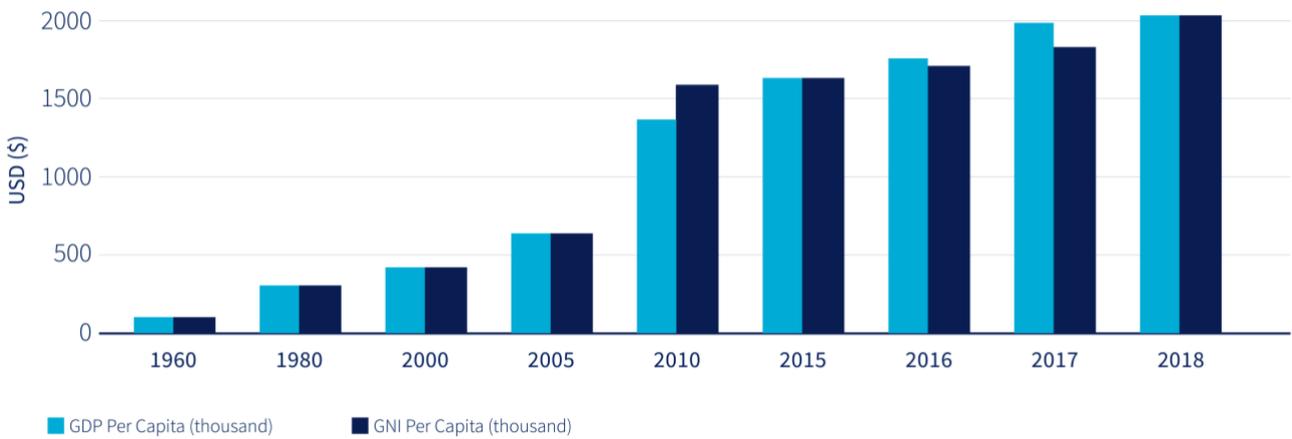
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1 Demographic, Economic, and Development Status

A. Trends in economic growth and income inequality

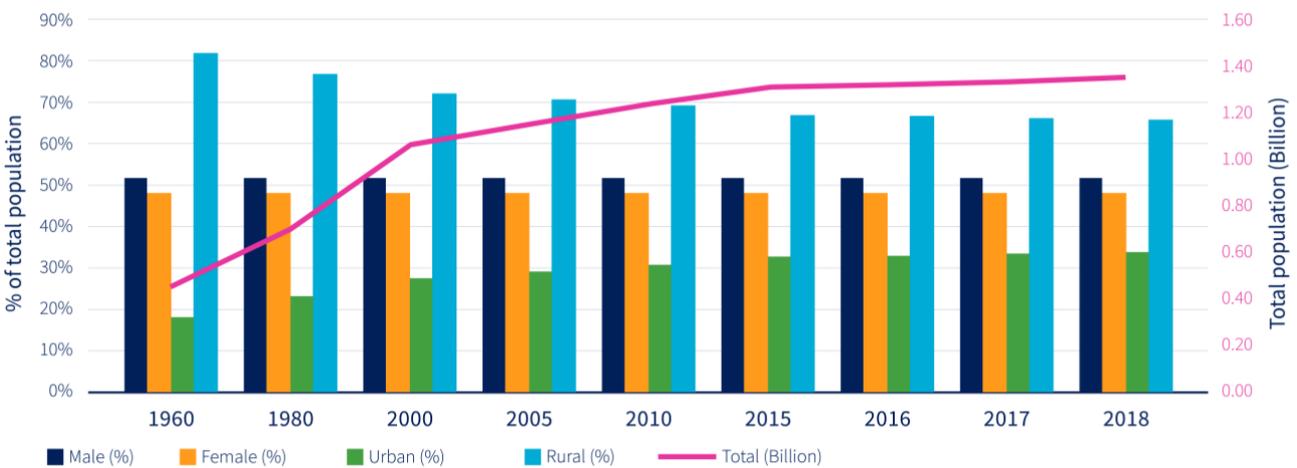
With significant economic growth in recent decades and a population of 1.35 billion people, India has emerged as a major player on the global stage in recent years (see Figure 1.a.1, Figure 1.a.2, and Figure 1.a.3).^{1,2} Its economy is the seventh largest in the world with a GDP of near \$3 trillion USD and a growth rate of 6.8% in 2018.^{3,4} This growth has improved the quality of life and has powered a dramatic drop in poverty, enabling millions of people to move up the economic ladder. The portion of Indians living in extreme poverty has fallen from 46% in 1995 to 13.4% in 2015.⁵

Figure 1.a.1: GDP Per Capita and GNI Per Capita in India, 1960-2018



GDP, gross domestic product; GNI, gross national income. Source: The World Bank.¹

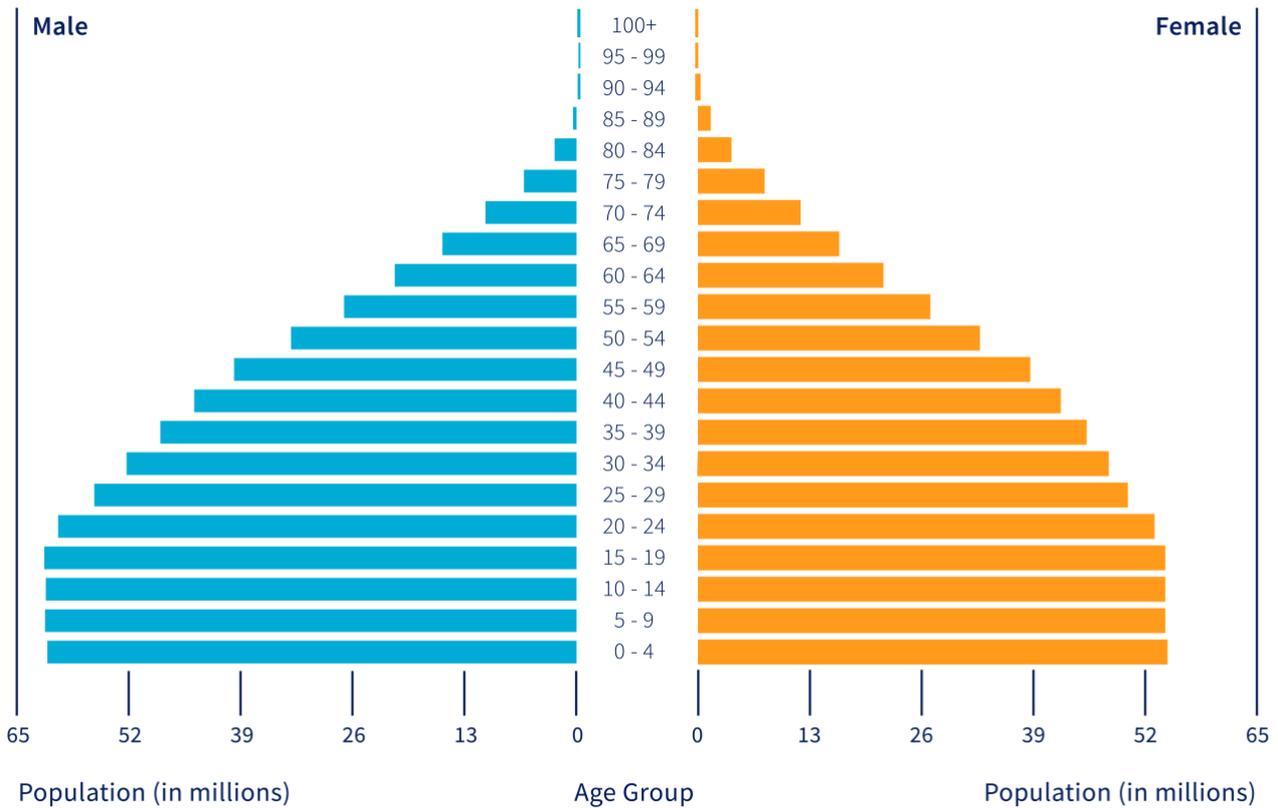
Figure 1.a.2: Gender and Urban-Rural Distribution, 1960-2018



Source: The World Bank.^{1,2}

¹ As a % of the total population.

Figure 1.a.3: Age Distribution in India in 2018



Source: Central Intelligence Agency. *The World Factbook*.²

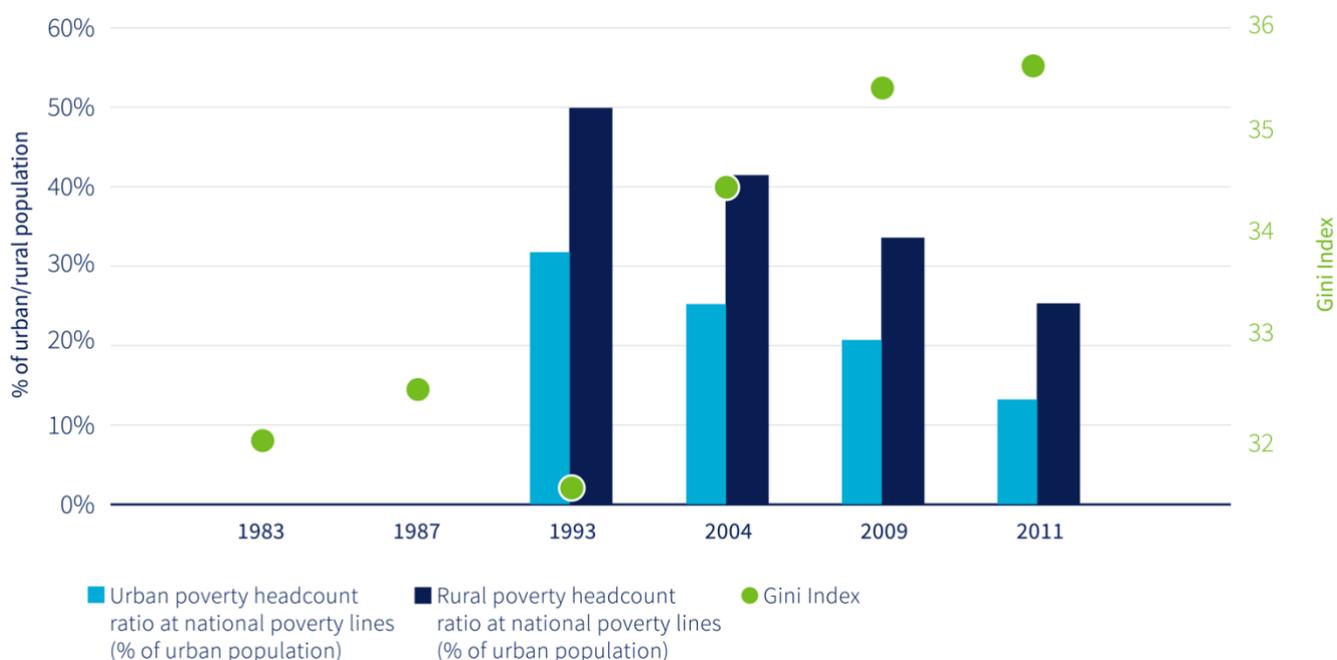
While India has experienced rapid economic growth in the past two decades, development has been uneven, and inequality has persisted along predictable fault lines. The country was ranked 129th on the 2019 Human Development Index (HDI), with HDI score increasing from 0.431 in 1990 to 0.647 in 2018 (as context, China and Indonesia are ranked 85th and 111th, respectively).^{6,ii} The latest survey by Oxfam showed that the 73% of the wealth generated in 2017 went to the richest 1% and the top 10% of the Indian population holds 77% of the total national wealth.⁷ The Gini index, a common measure of inequality, rose from 0.32 in 1993 to 0.36 in 2011 (the lowest recorded is the Ukraine at 0.25 and the highest is South Africa with 0.63) (see Figure 1.a.4).⁸

Drivers of economic inequality are complex and manifold. One study, for instance, estimates that the change in the urban–rural income gap between the early 1990s and the late 2000s contributed about 50% of the increase in inequality at the national level in India.^{9,iii} Inequality in India is reflected across various social indicators. For instance, life expectancy at birth is 65.1 years for the poorest fifth of households and 72.7 years for the richest fifth of households¹⁰; gross state domestic product (GSDP) per capita – the state-level counterpart of GDP – of Goa is nearly four times more than India’s average and 11 times more than lowest-ranked Bihar¹¹; and the richest 5% in urban India spend nearly 30 times more on education than households in the middle of the rural-income distribution.¹²

ii HDI value in 2018 was 0.574 for women and 0.692 for men.

iii The study found that urban-rural income gap was the single most important factor contributing to rising national inequality in India: about 23% accounted for by rising rural inequality, about 13% by rising urban inequality, and 13% by an increase in urban population.

Figure 1.a.4: Gini Index and Poverty Headcount Ratio in India



Source: The World Bank.⁸

India has one of the highest disparities between men and women, with a Gender Development Index value of 0.841 and Gender Inequality Index score of 0.524.^{6,iv} For instance, 94% of the female work force in India is engaged in the informal sector, which includes positions in the tobacco value chain, such as bidi rolling and gathering *tendu*. Many of these women lack alternative employment options, enabling widespread exploitation.¹³ A report by McKinsey Global Institute estimates that the Indian economy could grow by an additional 60% by 2025 if women were represented in the formal economy at the same rate as men.^{14,15} Similarly, a report by *The Economist* estimates that such an increase in female employment would bring an additional 235 million women to the workforce.¹⁶ As such, gender inequity not only limits options for Indian women, but also represents a missed economic opportunity for the country.

B. Demographic Shifts and Urbanization

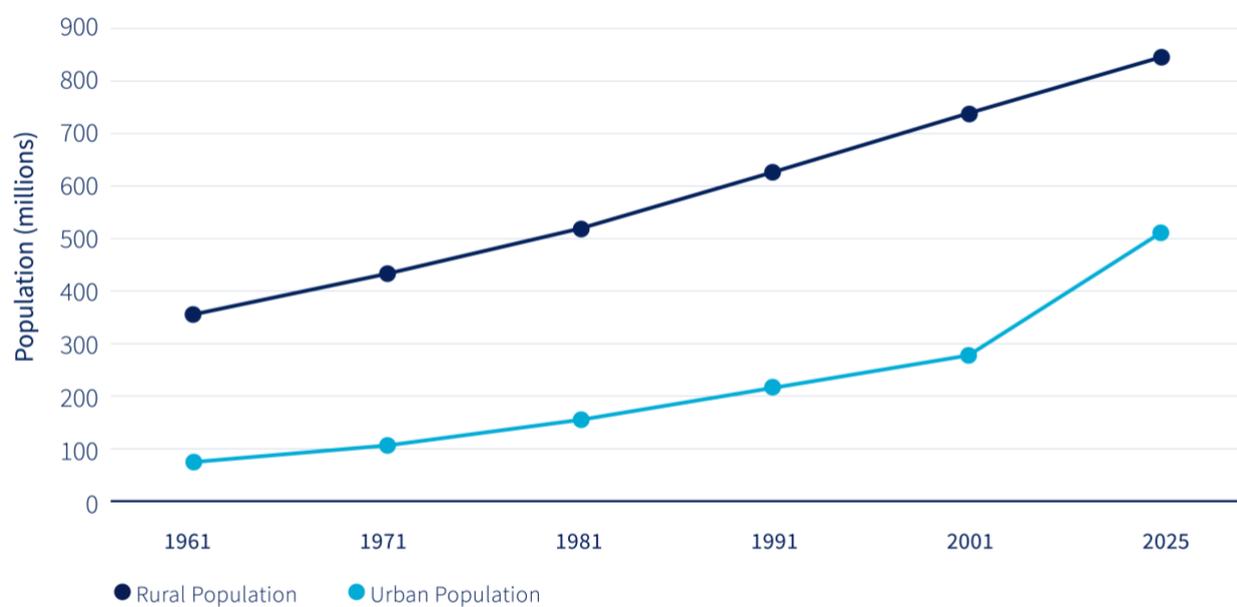
India is currently home to the world’s largest rural population, which amounts to nearly 900 million people or two-thirds of the total population in 2018.¹⁷ The country is undergoing rapid urbanization, with an increase in the urban population of 97 million new residents over the past decade.¹⁸ This population is projected to grow to as many as 566 million residents by the year 2025 (see Figure 1.b.1).^{19,20}

It is estimated that a quarter of the urban population is poor and that more than a quarter of the country’s population lives in urban areas.²⁰ The slum population in India is growing and as per the World Bank is estimated to be 24% of the urban population.²¹ This intra-urban variability presents challenges for the urban poor, who are often more vulnerable than better-off residents in urban areas.²² For instance, slum dwellers or those who live in poor urban dwellings in cities suffer from poor health conditions that are often worse than

^{iv} These scores are created based on health, empowerment, and labor market indicators (e.g., maternal mortality, birth rate, number of parliament seats, literacy level, and labor force participation rate, among others). The higher the GII, the more disparities there are between male and female.

those of the rural poor. Access to and utilization of primary health services is low among such communities in India, despite their physical proximity to advanced health care facilities.²³

Figure 1.b.1: Trends in Urbanization in India



Source: Agarwal et al.²⁰

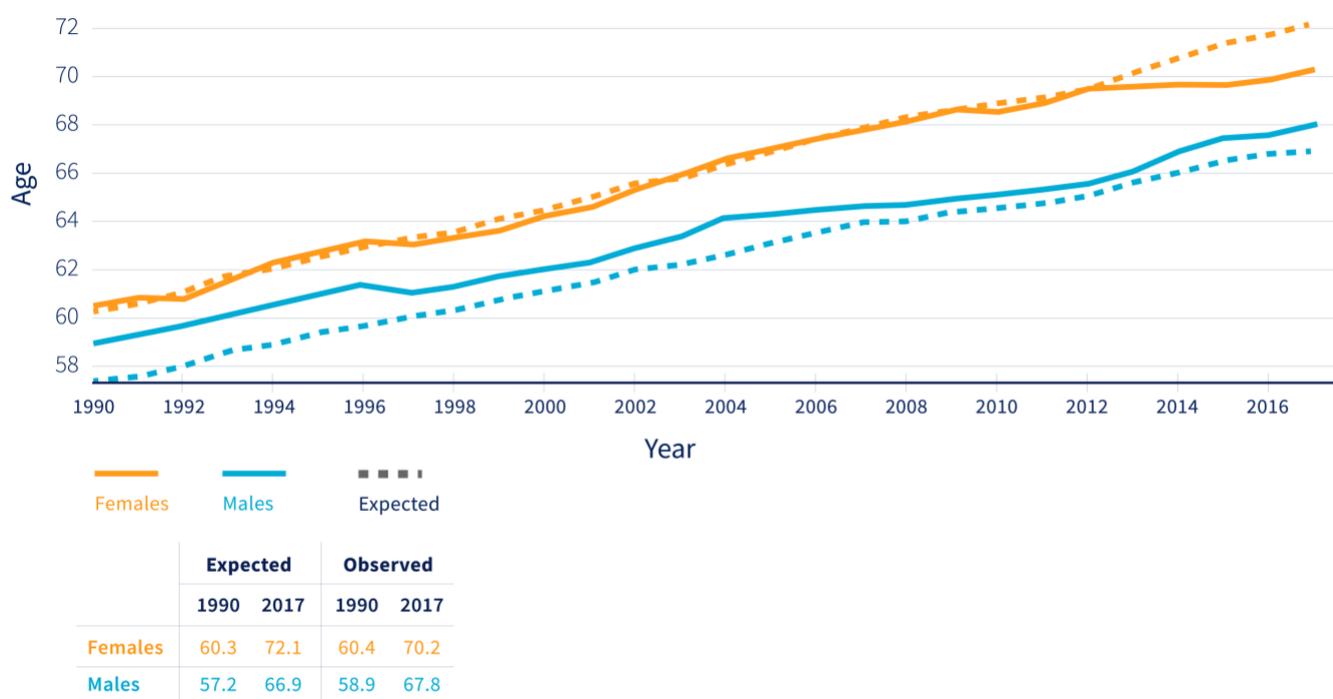
2 Health, Health Care, and Health Effects of Tobacco

A. Trends in Life Expectancy, Major Causes of Death, Disease, Disability, and Risk Factors

Life Expectancy

India has experienced a steady rise in life expectancy since 1990. Today, life expectancy in India is approaching 70 for women and 68 for men, as illustrated by Figure 2.a.1.²⁴

Figure 2.a.1: Life Expectancy in India (1990-2017)



Source: *The Institute for Health Metrics and Evaluation*.²⁴

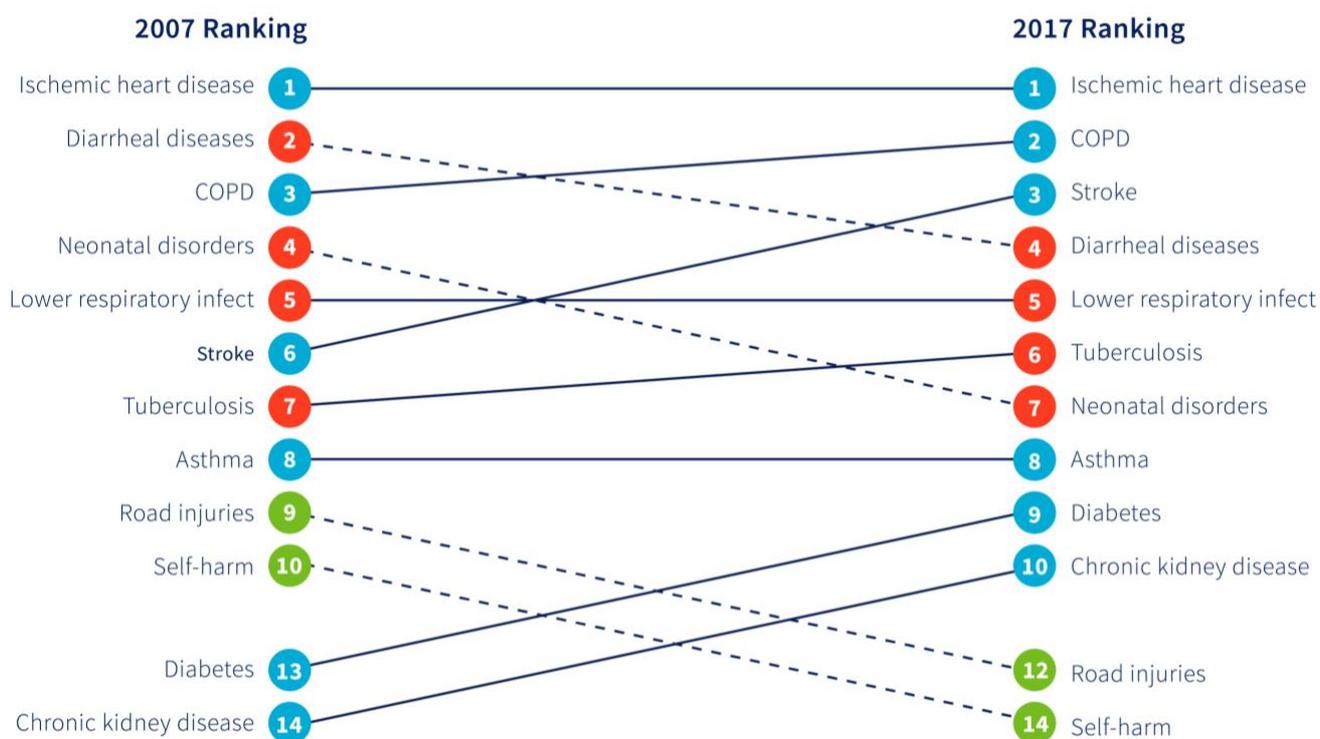
Major Causes of Death and Epidemiological Transition

India has been undergoing an epidemiological transition with a shifting burden of disease. The Global Burden of Disease (GBD) Study showed that, as of 2016, India has a high burden of noncommunicable diseases (NCDs) and injuries relative to communicable, maternal, neonatal, and nutritional diseases (CMNNDs). At the national level, the top five causes of disease burden in 1990 were CMNNDs: diarrheal diseases, lower respiratory infections, neonatal preterm birth, tuberculosis (TB), and measles. In 2016, three of the leading five causes of disease burden were attributed to NCDs: ischemic heart disease (cardiovascular disease [CVD]), chronic respiratory disease (i.e., COPD), and cerebrovascular disease (e.g., stroke) (see Figure 2.a.2), indicating that India is in the midst of a critical epidemiological transition.^{24,25}

The GBD researchers grouped the states of India according to their epidemiological transition level (ETL), which was defined as the ratio of all-age disability-adjusted life years (DALYs) due to CMNNDs versus DALYs due to NCDs plus injuries. A smaller ratio indicates advancing epidemiological transition—i.e., higher burden of NCDs and injuries than CMNNDs.²⁵

At the state level, a significant inverse relationship was reported between the epidemiological transition ratio and the sociodemographic index of states.²⁵ Although the burden of CMNNDs dropped from 1990 to 2016 across all ETL groups, the rates of reduction of DALYs due to the leading CMNNDs were slower in low ETL states.²⁵ There are considerable interstate variations in DALY rates across the country. Deaths due to CMNNDs in 2016 were 34.7% of the total number of deaths in low ETL states and 15.9% of the total number of deaths in high ETL states; at the same time, deaths due to NCDs were responsible for 55.2% and 72.3% of the total deaths in low and high ETL states, respectively.²⁵

Figure 2.a.2: Top 10 Causes of Death (2007 vs. 2017)



COPD, chronic obstructive pulmonary disease. Source: The Institute for Health Metrics and Evaluation.²⁴

It is worth noting that cancer does not rank among the top ten causes of death according to the data from the Institute for Health Metrics and Evaluation and is likely underreported (see Figure 2.a.2). Major challenges for cancer and death registries in India include low coverage, urban dominance, quality assurance in data, limited awareness among rural people, lack of follow-up and survival data, timelines, high cost of registration, limited linkages between various population-based cancer registries and hospital-based cancer registries, and lack of generalizability of existing estimates, among others.^{26,v} An estimated 5% of the total DALYs and 8% of the total deaths in India were attributed to all cancers in 2016.^{27,28} Lip and oral cavity, lung, pharynx, and esophageal cancers ranked among the top ten cancers responsible for the highest proportion of cancer DALYs in India for both males and females.²⁷

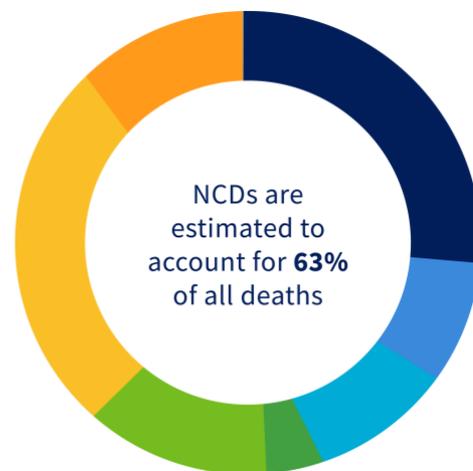
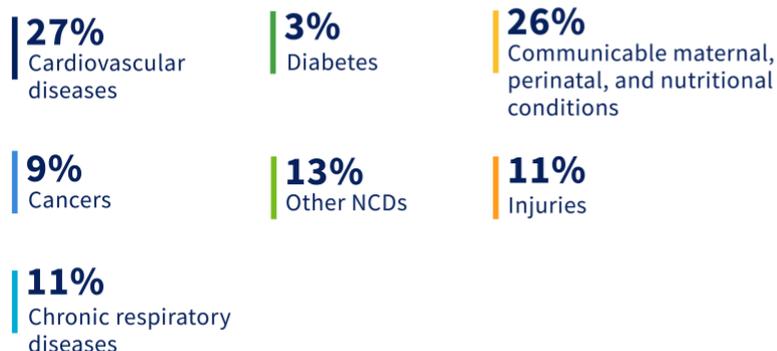
Even as far back as 1908, these cancers were noted for their high incidence in Travancore (present-day Kerala), when Bentall studied 1,700 malignancies and suggested they were connected to chewing betel quid, possibly leading to premature cancer-related death.²⁹ The correlation between such products and cancers is discussed in more detail in the tobacco use section of this report.

^v Based on feedback from in-country experts.

In summary, NCDs, which comprise cancer, COPD, CVD, and diabetes, are responsible for more than 60% of all deaths (see Figure 2.a.3).^{24,28,30} The probability of premature death due to NCDs is higher for males than for females, but both rates are projected to decrease by 2025 (see Figure 2.a.4).²⁸

Figure 2.a.3: Causes of Mortality in India

Proportional Mortality*



NCD, noncommunicable disease. Source: WHO.²⁸

Figure 2.a.4: Probability of Premature Death Due to NCDs

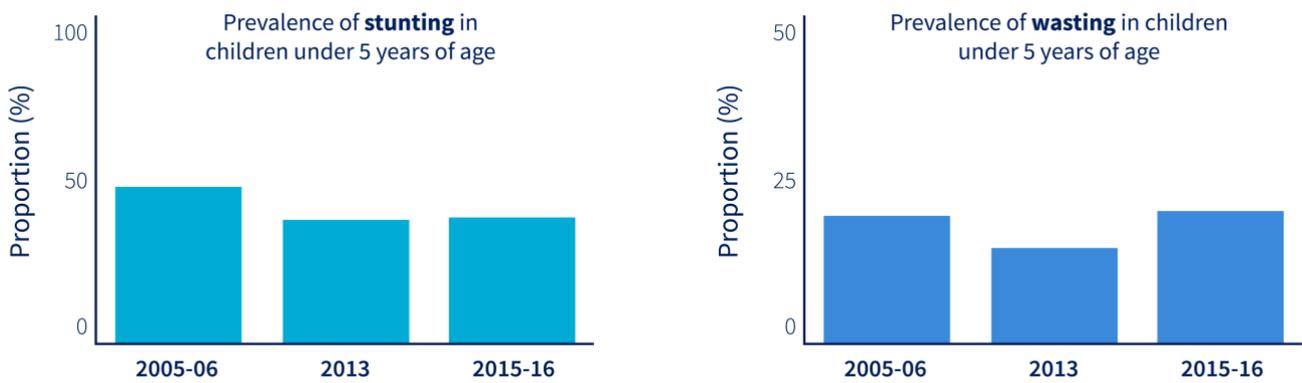


NCD, noncommunicable disease. Source: WHO.²⁸

Major Causes of Disease and Disability

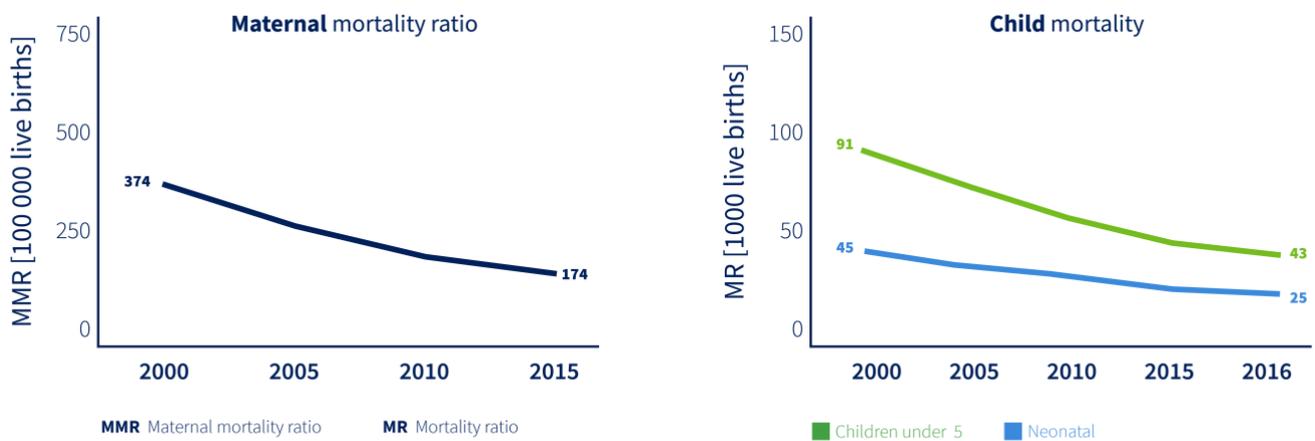
Environmental risk factors contribute to many of the India’s persistent health challenges, including air pollution; infectious diseases (e.g., malaria and TB); maternal mortality; child stunting and wasting; and under-5 mortality (see Figure 2.a.5, Figure 2.a.6, and Figure 2.a.7).³¹⁻³³ Though gradually declining, child mortality rates remain alarmingly high in the country (see Figure 2.a.6).

Figure 2.a.5: Child Stunting and Wasting (2005-2016)



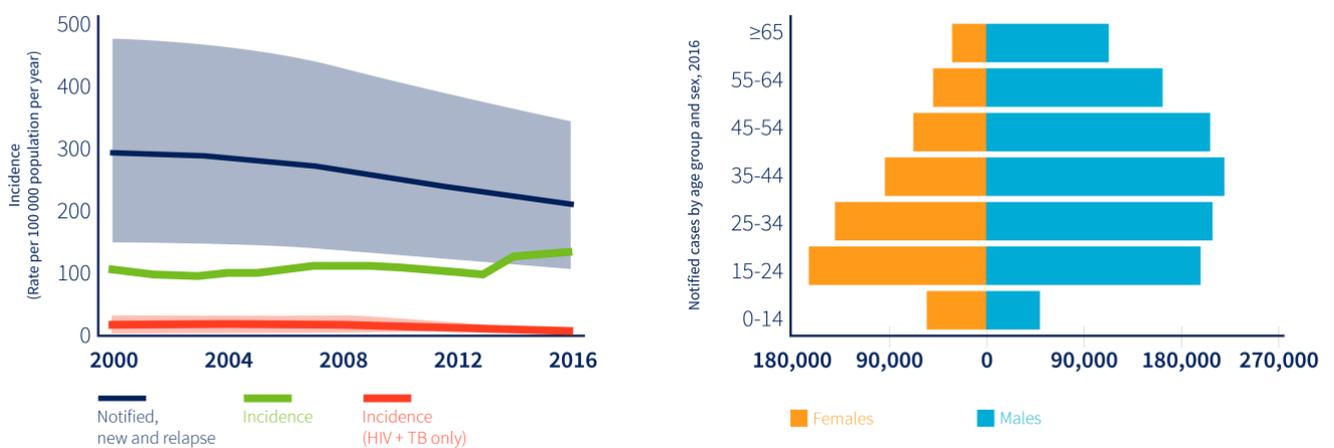
Source: WHO.³²

Figure 2.a.6: Maternal and Child Mortality (2000-2016)



Source: WHO.³²

Figure 2.a.7: Tuberculosis (2000-2016)



TB, tuberculosis. Source: WHO.³³

The incidence of TB and multidrug-resistant TB remains high in India,³⁴ and has not significantly decreased over the past two decades.³⁵ Although TB is underreported, India accounted for nearly a quarter of TB and drug-resistant TB cases globally.³⁵ For 2000-2016, there were more cases of TB reported for males than for females (Figure 2.a.7).³³

Risk Factors

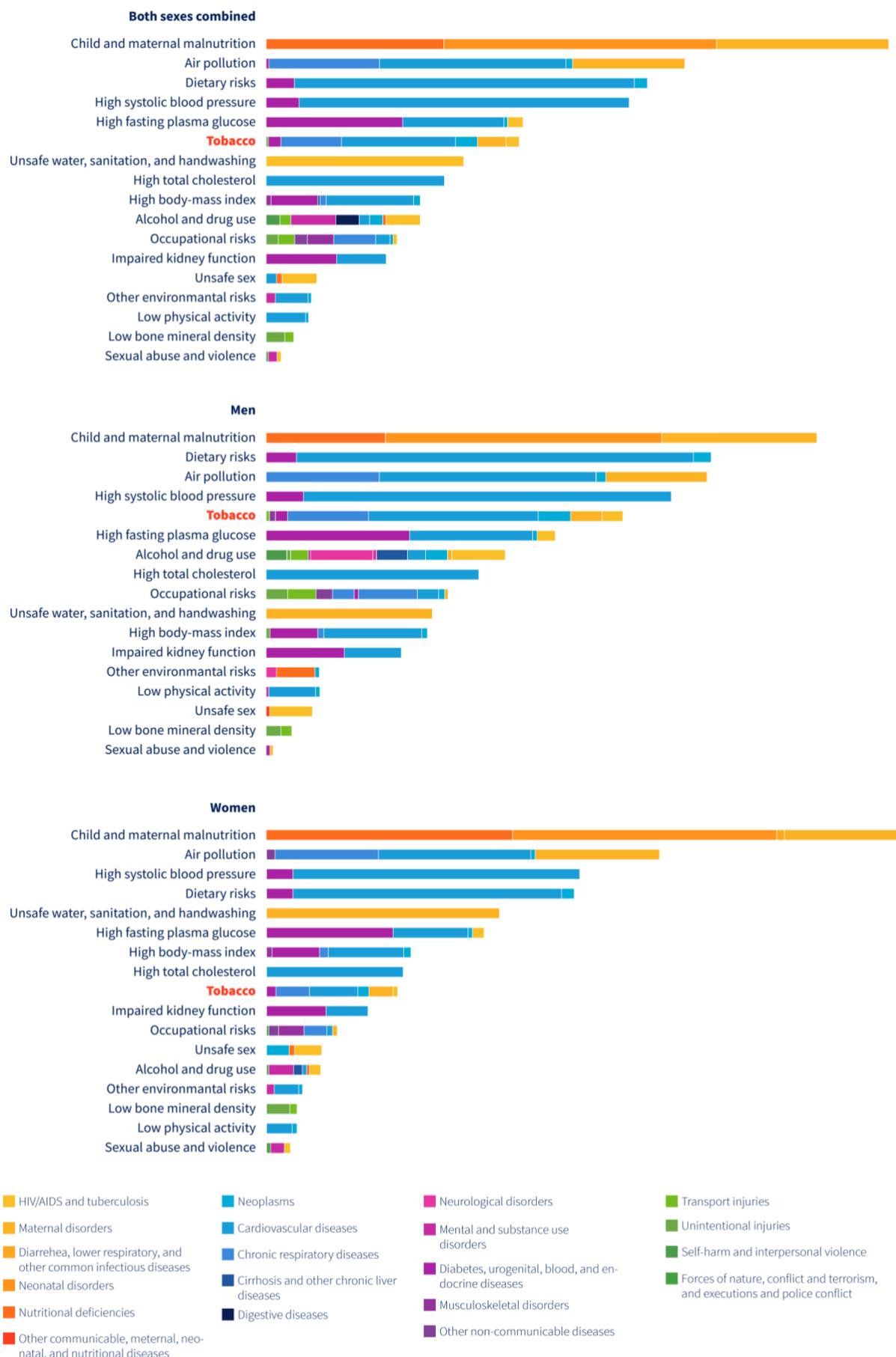
Child and maternal malnutrition, air pollution, high (systolic) blood pressure, and tobacco are among the leading risk factors for DALYs in India. The contribution of high blood pressure and tobacco to DALYs has increased between 2007 and 2017 (see Figure 2.a.8 and Figure 2.a.9).^{24,25} Air pollution in India has become a major risk factor in recent years. In 2017, the number of deaths attributable to ambient particulate matter pollution was estimated to be 38% higher in males, as compared to females. However, the number of deaths attributable to household air pollution was approximately 18% higher for females than for males.³⁶

Figure 2.a.8: Top 10 Risk Factors for Morbidity and Mortality (DALYs) (2007 vs. 2017)



DALY, disability-adjusted life year; LDL, low-density lipoprotein; WaSH, Sanitation and hygiene behaviors.
Source: The Institute for Health Metrics and Evaluation.²⁴

Figure 2.a.9: DALYs Attributable to Risk Factors in India, 2016



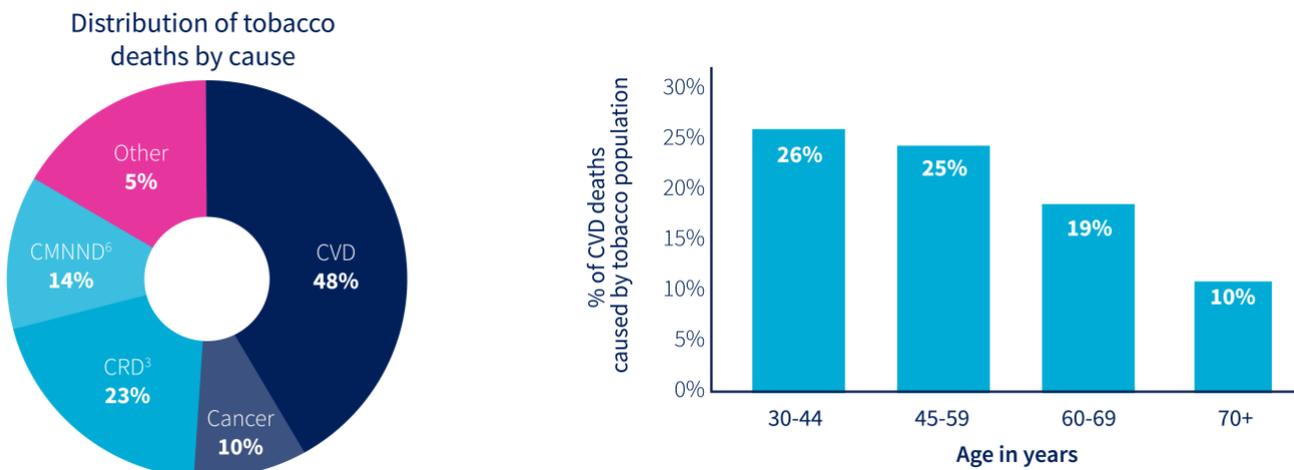
DALY, disability-adjusted life year. Source: India State-Level Disease Burden Initiative Collaborators.²⁵

B. Health and Economic Burden of Tobacco Use

Mortality

Tobacco is responsible more than one million deaths in India annually, representing 9.5% of all deaths in the country. As context, tobacco contributes to the death of eight million people worldwide each year from direct use or exposure to second-hand smoke.^{37,38} The WHO estimates that nearly half of all tobacco-attributed deaths in India are a result of cardiovascular diseases, and that 16% of cardiovascular disease deaths are caused by tobacco, with those ages 30-44 years at higher risk (see Figure 2.b.1).³⁷

Figure 2.b.1: Cardiovascular Disease: Most Common Cause of Tobacco-Attributable Mortality



CMNND, communicable maternal, neonatal, and nutritional diseases; CRD, chronic respiratory diseases; CVD, cardiovascular disease.
Source: WHO.³⁷

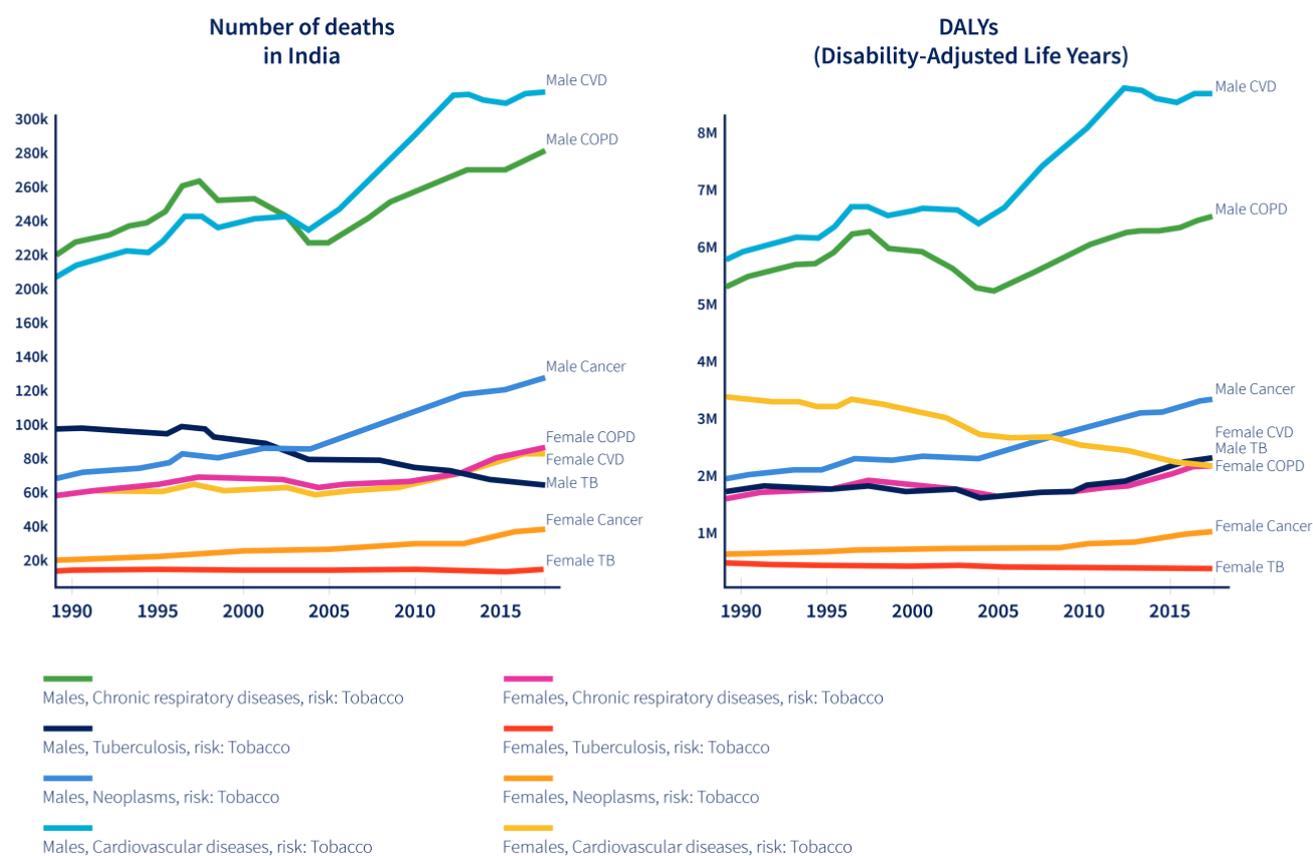
Morbidity

Tobacco-attributed deaths and DALYs caused by CVDs, chronic respiratory diseases, and cancer are higher for men than for women in India and have increased between 1990 and 2017 (see Figure 2.b.2).³⁹

In addition to being a leading risk factor for all NCDs, smoking can increase the risk of acquiring TB more than two and a half times.^{34,35,40} In fact, 40% of the TB burden in India is attributed to smoking.⁴¹ Use of bidis, specifically, is also associated TB as well as several other diseases,⁴² including respiratory conditions, CVDs,^{43,44} and lung, oral, and pharyngeal cancers.⁶ Further, studies have found that people with mental illnesses are twice as likely to smoke compared to the general population, and encounter difficulty with tobacco cessation.⁴⁵ A cross-sectional study conducted in a tertiary hospital in Mumbai similarly found that individuals with mental illnesses showed significantly higher usage of tobacco to manage their symptoms and the vast majority had started before their illness was diagnosed.⁴⁵

Various forms of tobacco use in India are responsible for an estimated 40% of all cancers.⁴⁶ The incidence of oral cancer in India is among the highest worldwide, comprising nearly half of all oral cancers globally.³⁴ Of note, India accounts for nearly three-quarters of the global burden of disease attributable to SLTs.⁴⁷ More than 350,000 people die from SLT-related diseases in the country.⁴⁸ Use of these products increases the risk of stroke, CVD, hypertension, and metabolic syndrome.⁴⁹

Figure 2.b.2: Tobacco-attributed Deaths and DALYs for CVD, COPD, TB, and Cancer (Neoplasms) (1990-2017)



COPD, chronic obstructive pulmonary disease; CVD, cardiovascular disease; DALY, disability-adjusted life year; TB, tuberculosis.
 Source: The Institute for Health Metrics and Evaluation.³⁹

Use of SLT products by women is common in India. The prevalence of SLT use by expecting or nursing women is similar to that among all women of reproductive age in India. There is a significant association between maternal use of SLT and low birth weight (LBW). SLT consumption during pregnancy leads to a 70% higher risk of maternal anemia and two to three times higher rates of stillbirth.⁵⁰ Newborn infants to mothers who used SLT during pregnancy are on average 105 g lighter than infants born to non-users (and 87 g lighter when adjusted for gestation age at birth weight).⁵¹ Similarly, the use of areca nut during pregnancy results in smaller newborn infants and neonatal withdrawal syndromes (see Section 3 for more detail).⁵²

Although SLTs are associated with lower morbidity and mortality risks than smoked forms of tobacco, an estimated 30% of oral cancers in India were caused by SLTs and areca nut use, and a further 50% was associated with the use of a combination of tobacco, areca nut, and smoking.^{53,54} Many studies have underscored the numerous carcinogenic and genotoxic effects of SLTs consumed in the country.^{55,56} Indian SLTs have also been reported to be associated with a high risk for oral and esophageal cancers, unlike snus, which has a far lower risk of cancer.^{57,58} In fact, this past October, the US Food and Drug Administration (FDA) authorized eight manufacturers to sell snus in the United States, with a “modified risk claim.” The labelling may state that “using General Snus instead of cigarettes puts you at lower risk of mouth cancer, heart disease, lung cancer, stroke, emphysema, and chronic bronchitis.”⁵⁹ Classified by the WHO as a Group 1 human carcinogen, areca nut^{vi}

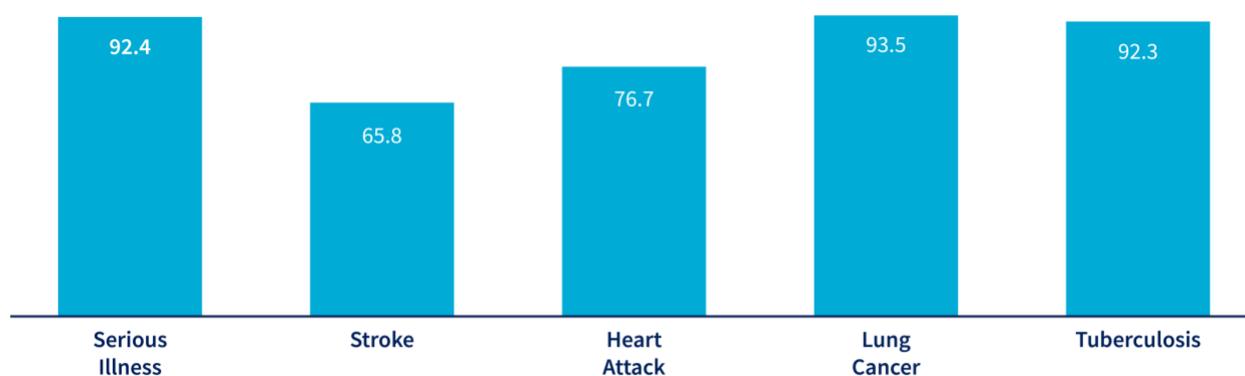
^{vi} Areca nut (betel nut) can be consumed by itself or in the form of betel quid, which is a mixture of tobacco with crushed areca nut.

increases the risk of precancerous oral lesions (submucous fibrosis) and cancers of the oral cavity, pharynx, and esophagus, as well as stomach, lung, and liver cancers.^{52,60} Areca nut is also classified as “injurious to health” under Section 2.4.5 of the “packaging and labelling” regulations.⁴⁸

Risk Perception

According to the second Global Adult Tobacco Survey India, 2016-2017 (GATS 2), the level of awareness regarding the health risks of smoking is high in India, with more than 92% of all adults reporting that smoking causes serious illnesses (see Figure 2.b.3).³⁴ It is worth noting that *bidis* are often perceived as “healthy” compared to cigarettes because of the use of *tendu* leaf and areca nuts.^{vii} The areca nut is, in fact, considered to have several beneficial medicinal properties and therapeutic effects.⁶¹

Figure 2.b.3: Percentage of Adults Who Believe That Smoking Causes Various Diseases (2016-2017)



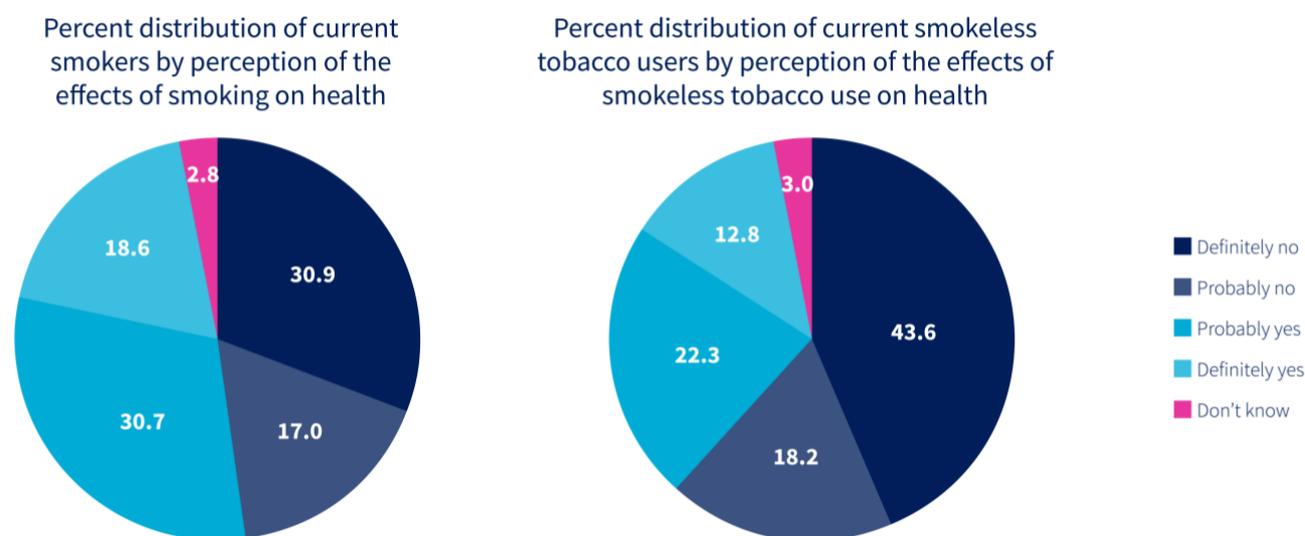
Source: GATS 2.³⁴

The dangers of SLT use are less widely appreciated among their users. More than 60% of SLT consumers in India do not believe that SLT use adversely affects their health, and nearly 44% of SLT users were certain that these products do not adversely affect their health (see Figure 2.b.4).³⁴

In fact, some reports indicate that SLT users in India believe that these products have beneficial properties and can serve as “pain relievers” and “teeth protectors.” In many rural areas in India, tobacco is generally believed to have medicinal properties.⁶²

^{vii} Results from a survey commissioned by the Foundation in 2019.

Figure 2.b.4: Perceptions of Harm Caused by Smoking and by SLTs



SLT, smokeless tobacco. Source: GATS 2.³⁴

Economic Cost of Tobacco-Attributed Morbidity and Mortality

The total economic burden of tobacco in India in 2014 was estimated to be \$22.4 billion USD, of which 16% was direct cost^{viii} and 84% was indirect cost.^{ix} The highest economic burden attributed to tobacco for direct and indirect morbidity costs was due to CVDs, followed by respiratory diseases, TB, and cancers. Notably, men accounted for 91% of the total economic burden while women accounted for 9%.^x

Further, this burden was not equal among states. Four states accounted for 60% of tobacco-attributable CVDs; three states accounted for 52% of tobacco-attributable cancers; two states accounted for 47% of tobacco-attributable respiratory diseases; and 31% of tobacco-attributable TB occurred in one state alone.³⁰ Uttar Pradesh contributed the highest overall burden (28%), followed by West Bengal (13%) and Andhra Pradesh (12%). This disparity is not surprising, as Uttar Pradesh is, by far, the largest state in India.^{25,30}

C. Trends in Health Care Spending

The Indian health care delivery system has public and private components. The public health care system focuses on providing basic health care facilities (e.g., primary health care centers in rural areas), as well as limited secondary and tertiary care institutions in key cities. The private health care system comprises secondary, tertiary, and quaternary care institutions, mainly in metro, Tier I, and Tier II cities.⁶³ With 1.35 billion beneficiaries, India's health care system is one of the world's largest, but the vast majority of citizens lack access to health coverage or quality care.^{64,65}

^{viii} About \$2.6 billion USD of the total economic cost attributed to tobacco use was related to direct medical costs for treatment of, and hospitalization due to, tobacco-related diseases. Direct medical costs comprise treatment of tobacco-attributable diseases and hospital care.

^{ix} Indirect costs include indirect morbidity costs and indirect mortality costs of premature deaths due to tobacco use.

^x Women contributed 29% of the economic burden related to SLT and presented an economic burden that was highest for cancers (38%) followed by CVD (18%), TB (17%), and respiratory diseases (1.4%).

Health care expenditures are rising alongside a growing population.^{63,64} However, India spent only 1.3% of its GDP on health care in 2017-2018 (see Table 2.c.1)⁶⁶ – which is below that of nearly all other low- and middle-income countries in the region; the analogous level of spending in Nepal was 5.6%, Cambodia was 5.9%, China was 5.1%, Sri Lanka was 3.8%, and Pakistan was 2.9%.⁶⁷ In 2017, the government set a target to raise the annual health spending to 2.5% of GDP by 2025. Even if this target were to be achieved, it would still represent one of the lowest public health expenditures globally.^{68,69}

Table 2.c.1: Trends in Public Health Expenditure

Year	Public Expenditure on Health (in Rs. Millions)#	Population (in Millions)\$	GDP* (in Rs.)	Per capita Public Expenditure on Health (in Rs.)	Public Expenditure on Health as Percentage of GDP (%)
2009-10	725360	1170	6477827	621	1.12
2010-11	831010	1180	7784115	701	1.07
2011-12	962210	1200	8736039	802	1.10
2012-13	1082360	1220	9951344	890	1.09
2013-14	1122700	1230	11272764	913	1.00
2014-15	1216002.3	1250	12433749	973	0.98
2015-16	1400545.5	1260	13764037	1112	1.02
2016-17 (RE)	1788756.3	1280	15253714	1297	1.17
2017-18 (BE)	2137195.8	1290	16751688	1657	1.28

Public expenditure on Health from "Health Sector Financing by Centre and States/UTs in India 2015-16 to 2017-18", National Health Accounts Cell, Ministry of Health & Family Welfare.

\$ "Report of the Technical Group on Population Projections May 2006", National Commission on Population, Registrar General of India

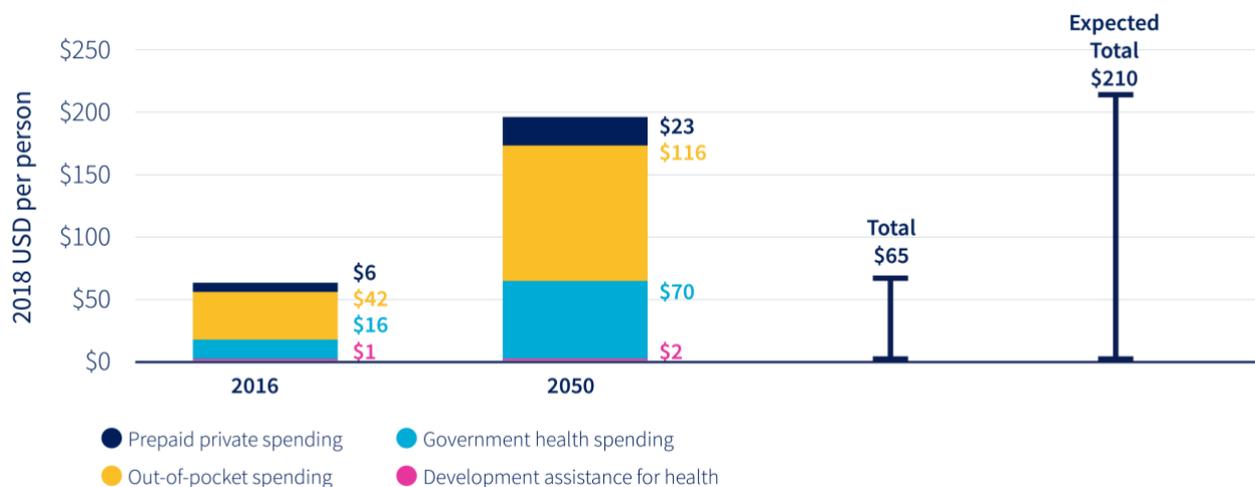
* GDP from Central Statistics Office

BE, budget estimate; GDP, gross domestic product; RE, revised estimate; Rs, rupees.

Source: Central Statistics Office, Ministry of Health and Family Welfare.⁶⁶

In 2016, an average Indian spent \$65 USD on health care, with \$42 USD spent by individuals out-of-pocket, \$16 USD spent by the government, and \$6 USD covered by prepaid private entities (see Figure 2.c.1).²⁴ Out-of-pocket costs represent the bulk of health care expenditure. They also represent some of the highest out-of-pocket expenditures compared to other BRIC countries.^{70,71}

Figure 2.c.1: Per-Person Spending (in USD) on Health Care in India in 2018 by Funding Source



Source: *The Institute for Health Metrics and Evaluation*.²⁴

Health coverage is low in India – just over one out of every ten individuals in rural and urban areas have government-funded insurance (Figure 2.c.2).^{72,73} In rural areas, 14% of individuals have insurance, which is largely government-funded. In urban areas, 18% have insurance; more specifically, 12% have government-funded insurance, 3.5% have household insurance with a private company, 2.4% have employer-funded insurance, and 0.2% have some other type of coverage.

Figure 2.c.2: Percentage Distribution of Persons by Coverage of Health Expenditure in Rural and Urban Areas

Fig. 4R: Percentage distribution of persons by coverage of health expenditure **in rural areas**

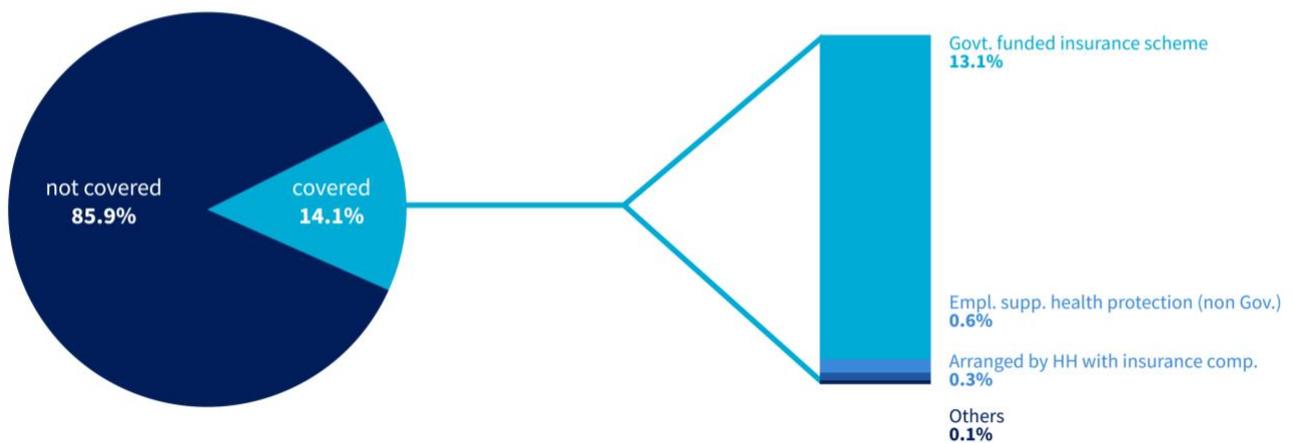
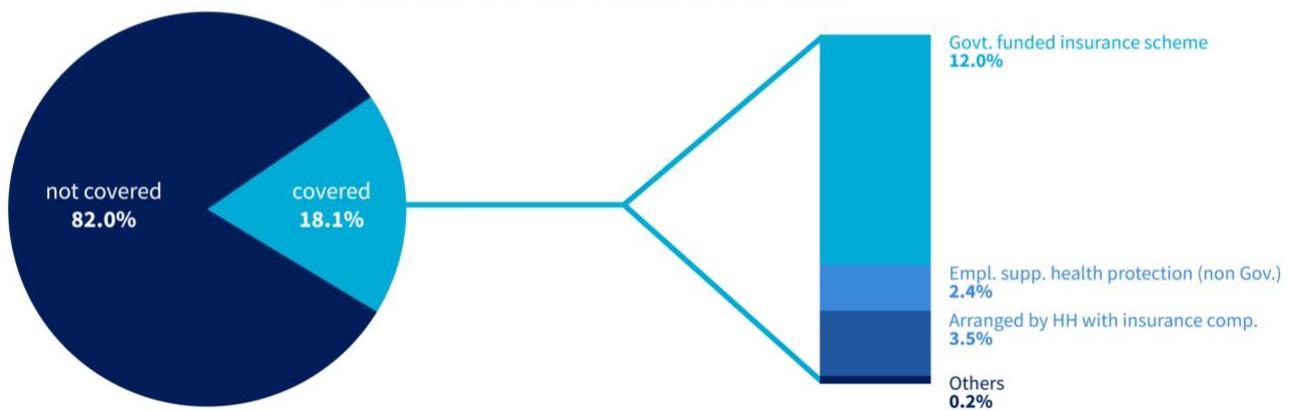


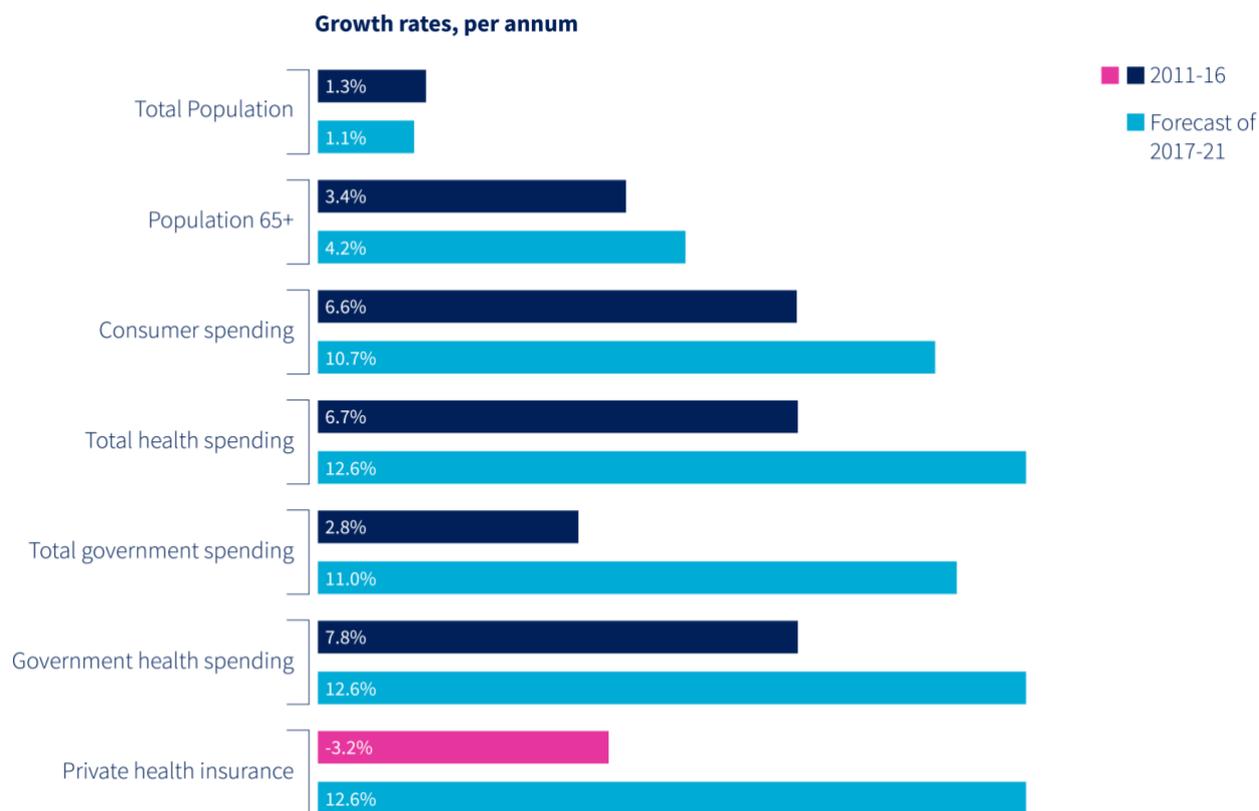
Fig. 4U: Percentage distribution of persons by coverage of health expenditure **in urban areas**



Comp, company; empl, employer; govt, government; hh, household; supp, supported. Source: Ministry of Statistics and Programme Implementation.⁷³

Health is a union, state, and concurrent subject in the Indian Constitution, with multiple layers of government overseeing various elements of it.⁷⁴ More concerted and combined effort is needed nationwide to render the health care system effective.⁷⁵ Private health insurance contribution decreased 3.2% in 2011-2016 but, like government health spending, is expected to increase by 12.6% for 2017-2021 (see Figure 2.c.3).⁷⁶

Figure 2.c.3: Projected Health Expenditure Expectations in India



Source: EY.⁷⁶

Across all age groups, women tend to have less access to health care and to hospital treatment, especially women living in rural areas.^{77,78} In old age, women report worse self-rated health, a higher prevalence of disabilities, and lower health care utilization than men.^{79,80} There is a 48% gender gap in health care expenditure attributable to variations in demographic and socioeconomic factors.⁷⁸

In 2018, the central government launched its flagship “Ayushman Bharat-National Health Protection Mission” (Ayushman Bharat), the world’s largest government-funded health care initiative. Ayushman Bharat aims to provide health care to 100 million poor families.⁸¹ The National Health Policy (NHP) aims to reduce mortality rates such as premature mortality due to CVDs, chronic respiratory diseases, cancer, and diabetes by 25% by 2025. NHP also aims to reduce the prevalence and incidence of other diseases (e.g., including leprosy, TB, blindness, and stunting), and to improve health care access by the creation of 150,000 health and wellness centers.^{82,83}

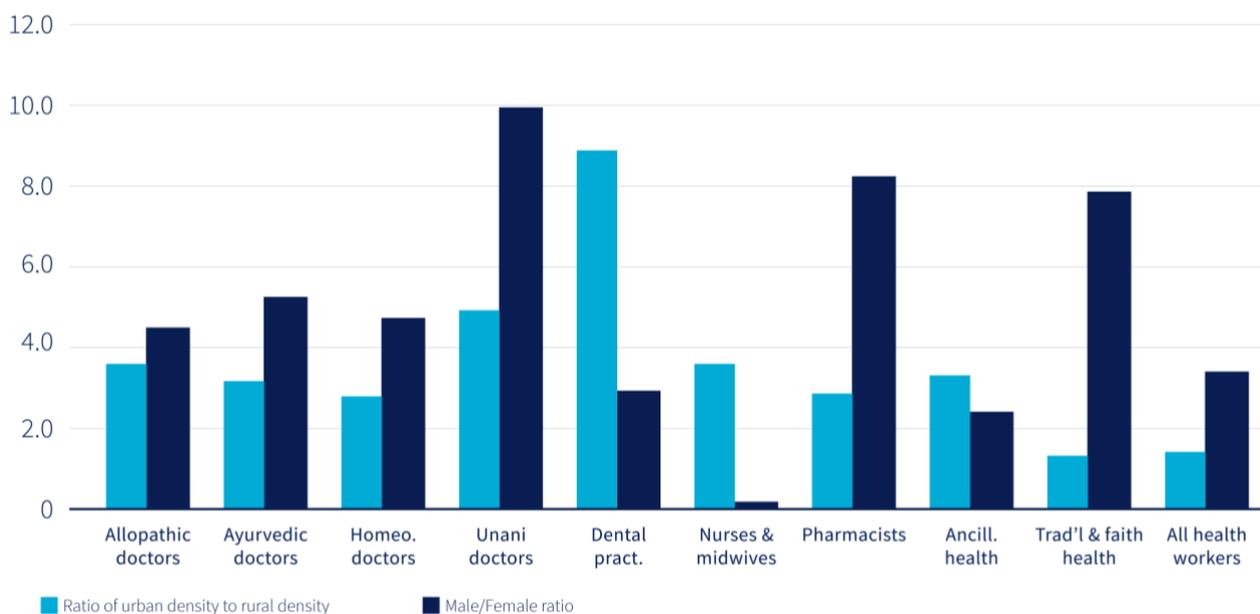
D. Health Care Professionals in India

The densities of national health workers per 100,000 residents in 2001 were as follows: doctors 79.7, nurses 61.3, ancillary health professionals 34.1, pharmacists 22.5, dental practitioners 2.4, and traditional and faith healers 1.2.⁸⁴ A recent report indicated that, in 2017, India had met the WHO-recommended doctor to population ratio (1 for 1,000 citizens) – the ratio was 1.34 for 1,000 citizens.⁸⁵ However, this bare fact elides the diverse connotations of the term “health care worker” in the country. Of workers classified under this term in India, about 40% were doctors (of whom, 77% were allopathic and 23% were ayurvedic, homeopathic, or Unani

doctors), about 31% were nurses and midwives, and only 1.2% were dentists. The remaining 29% comprised pharmacists, ancillary health professionals, and traditional and faith healers.⁸⁴

While more people reside in rural areas than in urban areas (72% vs. 28%, respectively), 59% of health professionals are located in urban areas, versus 41% in rural areas. Men account for 62% of all health professionals. The male to female ratio for doctors was 5.1 and for nurses and midwives was 0.2 (Figure 2.d.1).⁸⁴

Figure 2.d.1: Health Workers: Ratio of Urban Density to Rural Density, and Ratio of Men to Women



Source: WHO.⁸⁴

The distribution of health professionals across the country varies by state and does not always correlate to population size. For example, about 31% of all homeopathic doctors in India were in West Bengal (where 7.8% of the population resides), 37.5% of Unani doctors were in Uttar Pradesh (where 16.2% of the population resides), and 38.5% of medically qualified nurses were in Kerala (with only 3.1% of the population). The states with the highest density of female health professionals were Kerala (64.5%) and Meghalaya (64.2%), and the states with the lowest representation of female health professionals were Uttar Pradesh (19.9%) and Bihar (22.3%).⁸⁴

Smoking among health care professionals in India is common, albeit less common than within the general population.⁸⁶ Nearly a third of all physicians and almost half of male physicians smoke.^{87,88} A cross-sectional survey across Asia found that approximately 10% of medical students in India were “ever-smokers”^{xi} (this was the low compared to Bangladesh and Malaysia, where, respectively, 39% and 35% of medical students reported smoking).⁸⁹ Two studies in India showed that no more than a third of physicians have received training on smoking cessation.^{89,90}

A number of studies have found that health care providers are only nominally prepared to deliver tobacco cessation services.⁹¹⁻⁹⁴ A survey of primary care physicians, for example, found that many lack training in effective counselling techniques, nicotine replacement therapies (NRTs), and cessation medications.⁹¹ And a

^{xi} Defined as someone who has smoked in their lifetime.

study of dentists found that a quarter did not ask about tobacco use, with an even a smaller fraction providing support and follow-up services for tobacco cessation.⁹⁵ Barriers to providing robust tobacco cessation services included a lack of training, time, and financial incentives, as well as a fear of losing patients who may not appreciate dentists discussing tobacco-related matters.⁹⁶ The Global Health Professional Student Survey in India found that less than a quarter of medical students acquire knowledge about tobacco cessation during their training.⁹⁷ At present, policy efforts appear concentrated on the creation of tobacco cessation centers, despite beliefs that the coverage they provide is limited at best (see Section 5 and 6 for more details).^{91,93}

3 Tobacco Use

A. Product Type and Use

The tobacco ecosystem in India is complex and consists of both smoked and smokeless forms (see Table 3.a.1). Among smoked forms, common products include conventional cigarettes and *bidis*. Common SLTs include *gutkha*, *khaini*, *zarda*, and *tambakoo*, among others.

According to GATS 2, the prevalence of all adults aged 15 or above currently using tobacco is 28.6% (267 million), including 42.4% of men and 14.2% of women.³⁴ The National Health Policy adopted by the government in 2017 seeks to achieve a relative reduction in tobacco use by 15% in 2020 and 30% by 2025.³⁴ However, these numbers still reflect a major burden of tobacco use in India.

Table 3.a.1: Percentage of Adults Aged 15 or Older Who Are Current Users of Tobacco in India (2016-2017)

Current Tobacco Use	Men (%)	Women (%)	Urban (%)	Rural (%)	Overall (%)
Cigarettes smokers	7.3	0.6	4.4	3.8	4.0
Bidi smokers	14.0	1.2	4.7	9.3	7.7
Smokeless users	29.6	12.8	15.2	24.6	21.4

SLT, smokeless tobacco. - Source: GATS 2.³⁴

Smoked Tobacco

Cigarettes

As seen in Table 3.a.1, 7.3% of men, 0.6% of women, and 4% of all adults in India currently smoke cigarettes.³⁴ While India accounts for 18% of the total world population, retail volume of cigarettes sold in the country comprises only 1.5% of the global volume.^{98,99} The vast majority of tobacco users in India consume bidi or different forms of smokeless tobacco (see below). On average, Indians smoke about 6.2 cigarettes per day. Although the prevalence of cigarette smoking was low among women, the mean number of cigarettes smoked per day is higher than among men.¹⁰⁰

Bidis

Bidis are an alternative type of locally made low-cost, hand-rolled cigarettes. According to GATS 2, 14% of men, 1.2% of women, and 7.7% of all adults use *bidi*.³⁴ *Bidis* typically consist of finely ground, sun-dried tobacco rolled in a brown *tendu* leaf. Leaves from the *tendu* tree (*Diospyros melanoxylon*) are used to wrap *bidis*.¹⁰¹ *Bidis* are physically smaller than cigarettes but not necessarily less harmful. According to one study, *bidis* have a higher concentration of nicotine and carbon monoxide than conventional cigarettes.¹⁰² The lower socioeconomic groups in India are eight to ten times more likely to smoke *bidis* than cigarettes.¹⁰³ However, a study assessing the trends in *bidi* and cigarette smoking in India from 1998 to 2015 found that cigarettes are displacing *bidi* smoking among young adult and illiterate men.¹⁰⁴

Smokeless Tobacco

India continues to be a leading producer and consumer of smokeless tobacco. It is home to nearly 200 million SLT users, which represent two-thirds of all global smokeless tobacco use.^{34,105} SLTs are consumed either orally or nasally without combustion.¹⁰⁵ Smokeless tobacco use is more prevalent among men than women, with 30% of men and 13% of women using this form of tobacco.³⁴

Several types of SLT are favored by women. *Hogesoppu* tobacco leaf is used frequently by women in the state of Karnataka, either with or without betel. *Mishri* – a roasted, powdered preparation – is used mainly by women in lower socioeconomic groups to clean their teeth. They apply *Mishri* several times a day and continue to hold powder in their mouths. Another type of SLT used in the eastern part of the country predominantly by women is *gudhaku*, a paste made of tobacco and molasses.¹⁰⁶ One study showed that most chewing tobacco products had a higher risk for oral and esophageal cancers than non-use, while the same was not observed for snus.⁵⁸

A study that analyzed nationally representative data in 2005 and 2009 showed that SLT use continued to increase among Indians ages 15 to 49 years.¹⁰⁷ A survey of trends in age-specific standardized prevalence of SLT use showed that 34.4% of former smokers who tried at least one method for cessation in the last one year switched to SLT as a smoking cessation method.¹⁰⁷ Although gutkha was banned in 2013,¹⁰⁸ it continues to be widely available across the country (see more on Section 5 and 6 for details).

B. Product Use by Sex, Age, Region, and Socioeconomic Class

Tobacco Use by Sex

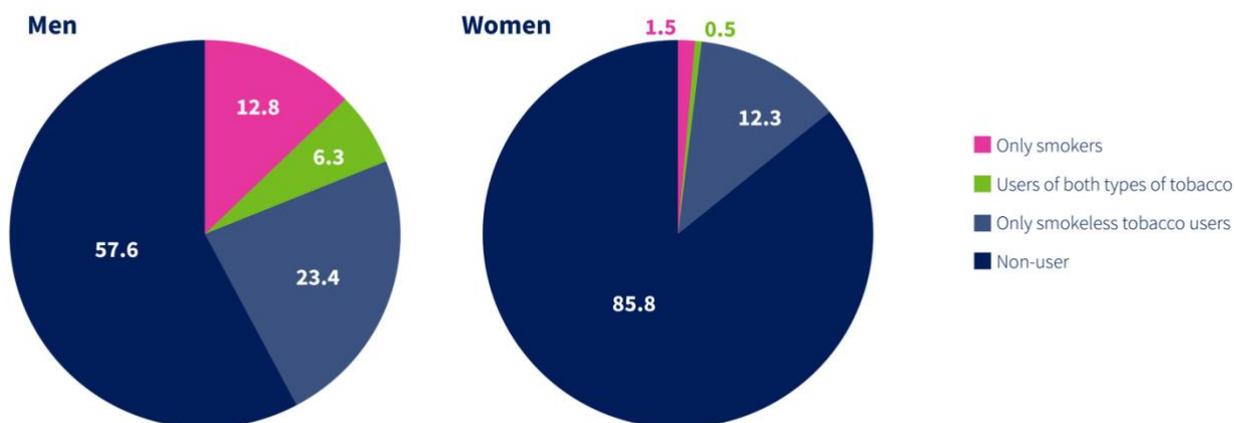
Figure 3.b.1 shows adult smoking trends in India by sex.²⁸ Figure 3.b.2 presents the distribution of tobacco use by sex.³⁴ According to GATS 2, 14.2% of women currently use tobacco, which reflects a 30% decrease since GATS 1.³⁴ Tobacco use among men and women is higher in rural areas than urban areas. While smoking among women in urban areas has shown a marginal decline, it has dropped sharply in rural areas compared to GATS 1.^{34,109} In some urban areas, female smoking may be viewed as a symbol of emancipation and modernity.^{110,111} For the most part, though, traditional values do not favor smoking by women; thus, they are more likely to consume tobacco in smokeless forms.¹⁰⁶ In the Northeastern states of Mizoram and Tripura, for instance, women's prevalence reportedly exceeds 50%, with tobacco being mostly consumed in smokeless forms (see section on tobacco use by states for more details).³⁴

Figure 3.b.1: Adult Tobacco Smoking Trends in India



Source: WHO.²⁸

Figure 3.b.2: Percent Distribution of Adults by Tobacco Use Status in India



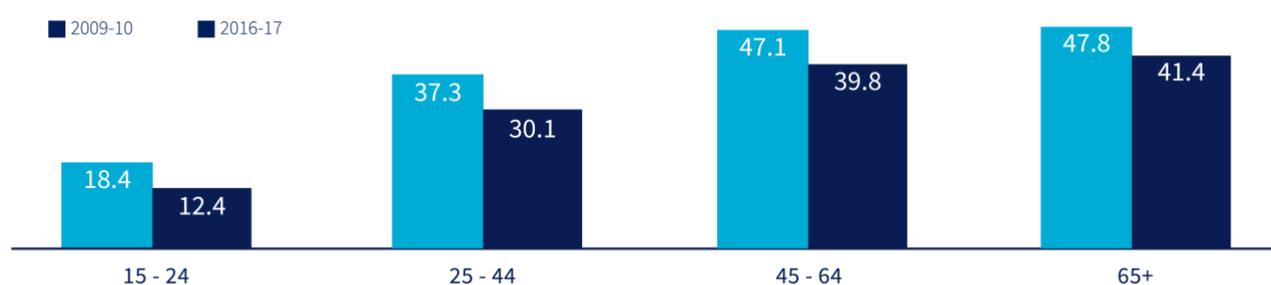
Source: GATS 2.³⁴

Tobacco Use by Age

According to GATS 2, prevalence of tobacco use appears to increase with age (see Figure 3.b.3 and Table 3.b.1).³⁴ In women, prevalence of tobacco use rose from 3.7% among those aged between 15 to 24 to 31% among women who are 65 and older. For men, prevalence of tobacco use ranged from 20% in ages 15 to 24 to 56% in the 45-64 age group, before marginally decreasing to 53% among those who are 65 and older. The Global Youth Tobacco Survey shows that about 14% of students use tobacco, suggesting that there was no significant increase between 2006 and 2009.^{112,xii} The survey also suggests that boys smoke and use smokeless tobacco at rates three and two times, respectively, as much as girls. The age of initiation of tobacco use is an important dimension because it has an influence on the duration and intensity of use.³⁴ GATS 2 shows that among daily users of tobacco, nearly half or 45% reported that they began smoking at or after the age of 20. Approximately 12% started using tobacco before turning 15 and 19% began at 18 or 19.³⁴

xii Three rounds of the Global Youth Tobacco Survey have been completed. The last one was conducted in 2009.

Figure 3.b.3: Percentage of Tobacco Users in India by Age Group, from GATS 1 and GATS 2



Source: GATS 1 and GATS 2.³⁴

Table 3.b.1: Percentage of Tobacco Users in India by Tobacco Use Pattern, According to Age

Age	Current Tobacco User	Smoked Only	SLT Only	Both Smoking and SLT	Nonuser
15-24	12.4	1.6	9.1	1.8	87.6
25-44	30.1	6.8	19.2	4.1	69.9
45-64	39.8	12.7	23	4.1	60.2
65+	41.4	11.8	25.9	3.7	58.6

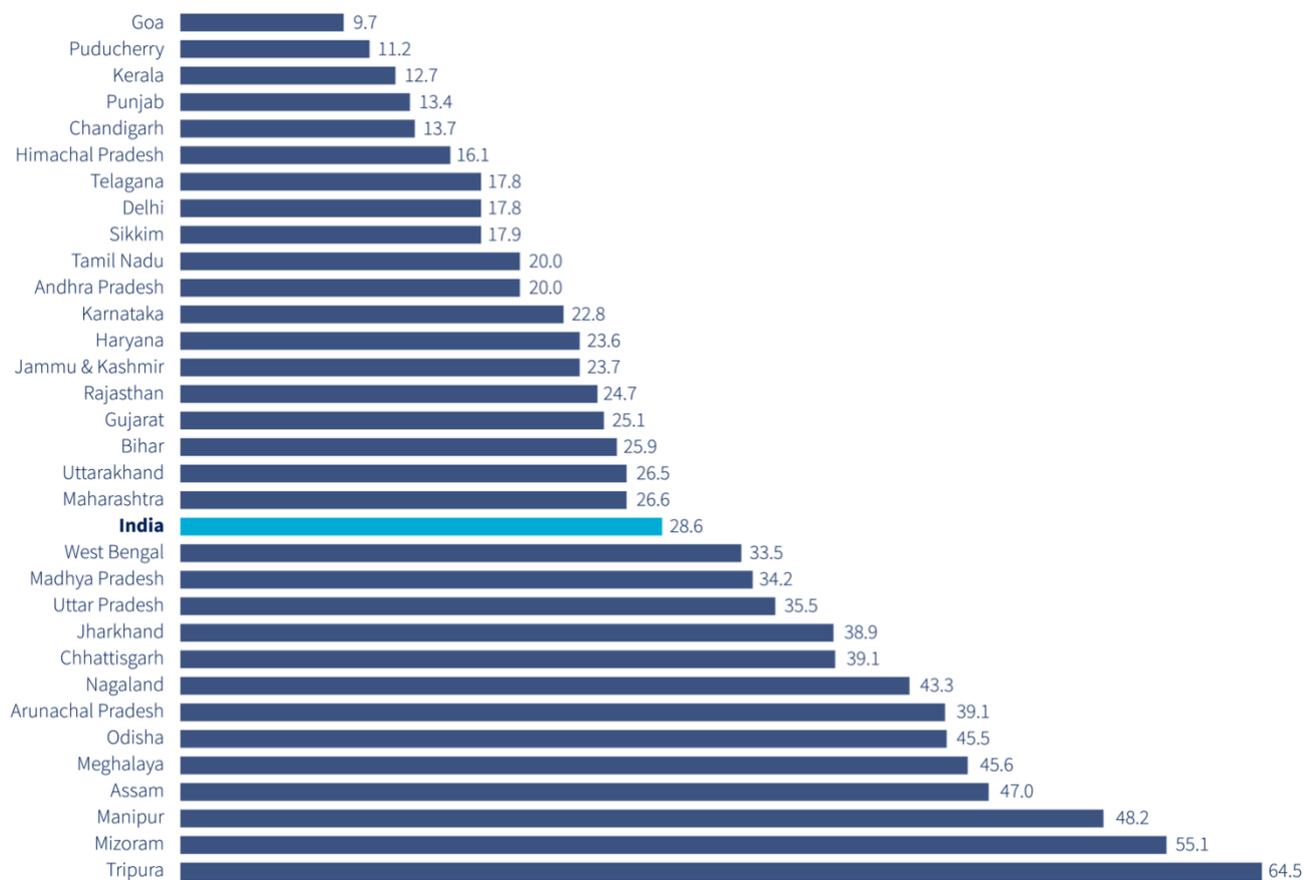
SLT, smokeless tobacco.

Source: GATS 2.³⁴

Tobacco Use by Region

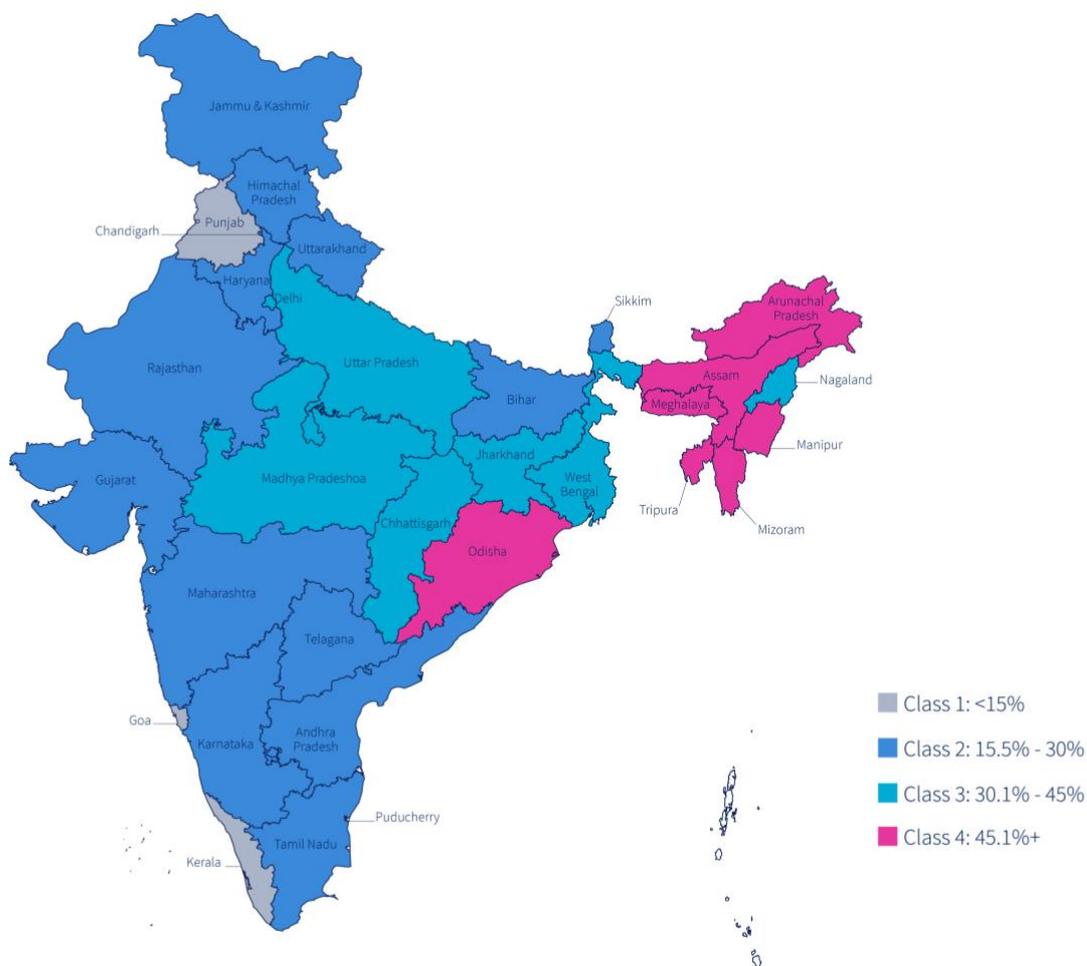
The prevalence of tobacco use varies considerably among the states (see Figure 3.b.4 and Figure 3.b.5). Overall, prevalence in the western and southern regions was lower than the national average of 28.6%, while prevalence in the northeastern and eastern states was higher. Among all states, the highest prevalence of overall tobacco use was reported in the state of Tripura in the northeast (64.5%), while the lowest was reported in Goa in the south (9.7%).

Figure 3.b.4: Current Tobacco Use Prevalence (% Smoking and/or Smokeless) Among States (2016-2017)



Source: GATS2.³⁴

Figure 3.b.5: Prevalence of Tobacco Use by States (2016-2017)



Source: GATS 2.³⁴

One study found that male adults in northeast India consumed alcohol and tobacco at rates markedly higher than the national average. The researchers also found that these rates varied across states within the region: more than 65% of the 10.2 million substance users were found to live in the state of Assam. A high level of substance use in northeast India may be linked to religious and social functions and a consequent lack of social inhibitions toward substance use, as well as ease of access.¹¹³ Researchers have also shown that, in the northeast, the prevalence of tobacco use is particularly elevated among students.¹¹⁴ At least half of daily users in Meghalaya, Sikkim, Arunachal Pradesh, and Maharashtra report that started using tobacco before the age of 18.³⁴

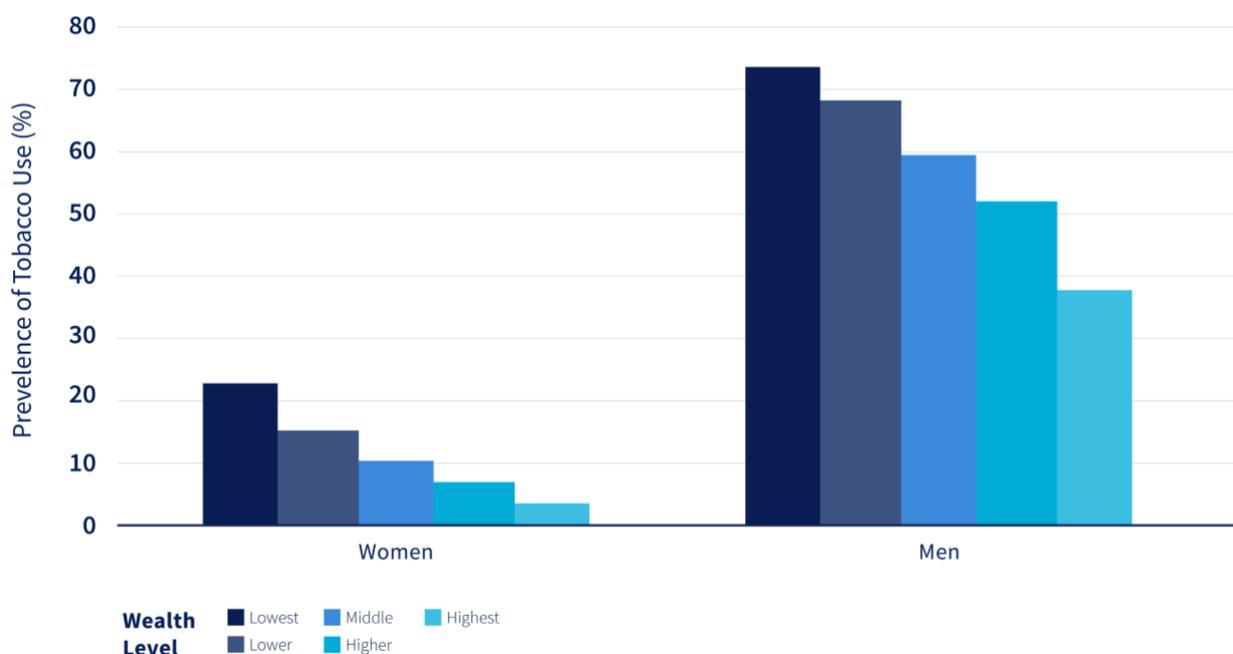
According to a report by the Indian Council of Medical Research (ICMR), which examines spatial patterns of tobacco use, there appears to be a significant correlation between smokeless tobacco use and certain socioeconomic conditions, such as *kaccha* house (colloquially translated into weak), lack of piped water, chronic illnesses, BPL card use (ration cards for those living below poverty line), and low levels of education in the northeastern states.¹¹⁵ The study also reports that smokeless tobacco use appears deeply ingrained in the sociocultural aspects of daily life. In contrast, the northern state of Punjab’s low prevalence can be likely attributed to Sikhism, which prohibits tobacco use.¹¹⁶

In most states, the prevalence of tobacco use among men is at least double that of women.³⁴ However, the prevalence of smoking among women is relatively high in several areas in the country, such as Arunachal Pradesh, Mizoram, Meghalaya, and Odisha.¹¹⁷

Tobacco Use by Socioeconomic Status

There is a clear inverse relationship between level of wealth and tobacco use in both sexes (see Figure 3.b.6).

Figure 3.b.6: Tobacco Use Among Men and Women Ages 15-49 in India by Level of Wealth



Source: WHO.¹¹⁸

A 2016 study found that overall rates of tobacco use from 2000 to 2012 were constant in the poorest households and declined among the richest (see Table 3.b.2).¹¹⁹ The researchers noted an inverse relationship between measures of socioeconomic status and tobacco use, except for cigarettes.

Table 3.b.2: Tobacco Use Prevalence (%) by Level of Wealth

	Tobacco Use		Bidi Use		Cigarette Use		SLT Use	
	Poor	Rich	Poor	Rich	Poor	Rich	Poor	Rich
2000	61.5	43.8	26.3	19.8	1.2	6.5	26.2	11.4
2012	62.7	36.8	16.8	10.7	1.3	7.0	33.9	13.5

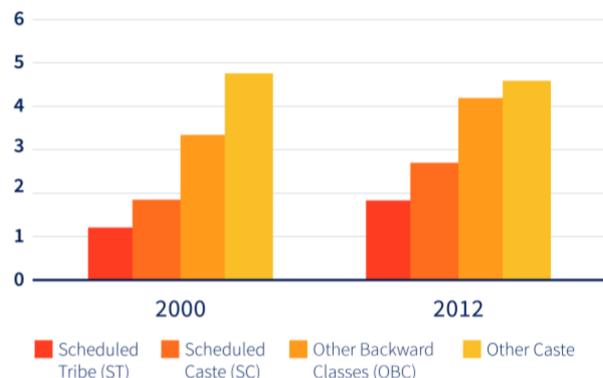
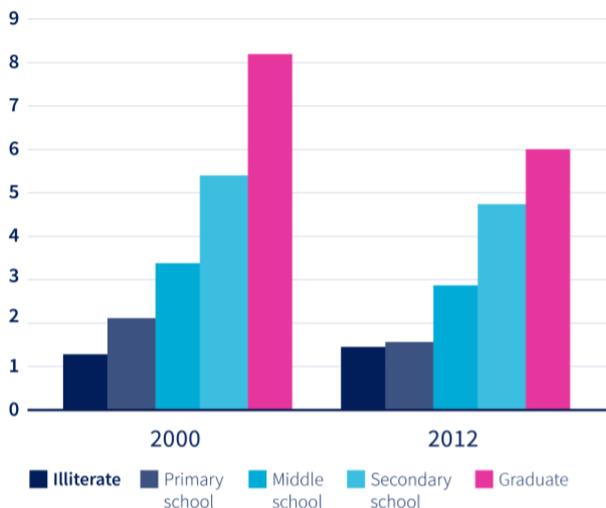
SLT, smokeless tobacco.

Source: Bhan et al.¹¹⁹

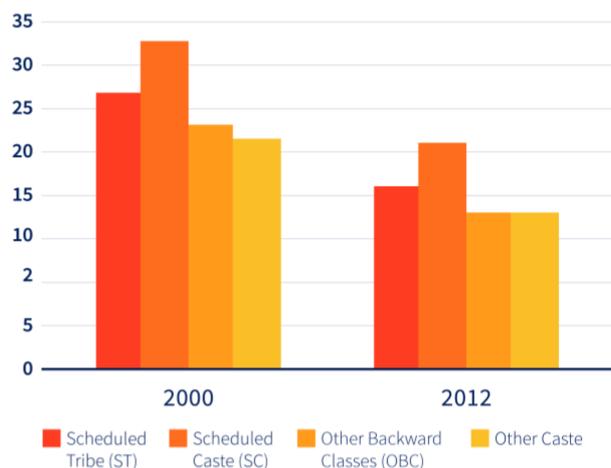
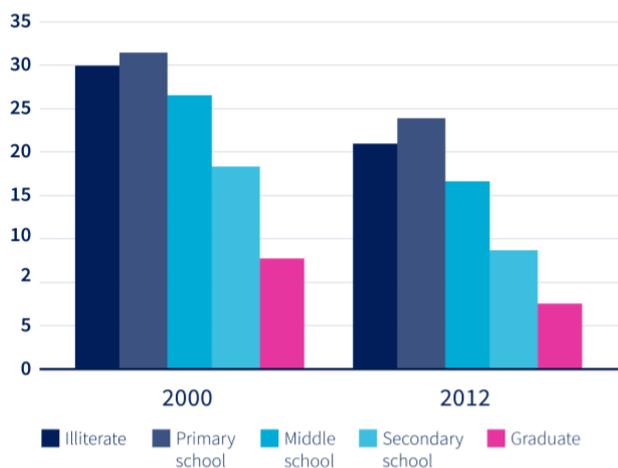
Between 2000 and 2012, cigarette use increased by 38% in illiterate households and by 32% among Scheduled Tribe (ST) households. SLT use increased for all households, with greater increases among richer, more educated, and other caste households. The use of SLT products increased by 66% during the same period across all groups (see Figure 3.b.7).¹¹⁹

Figure 3.b.7: Socioeconomic Inequalities in (a) Cigarette Use, (b) Bidi Use, and (c) Smokeless Tobacco Use, by Schooling and Caste/Tribe Status

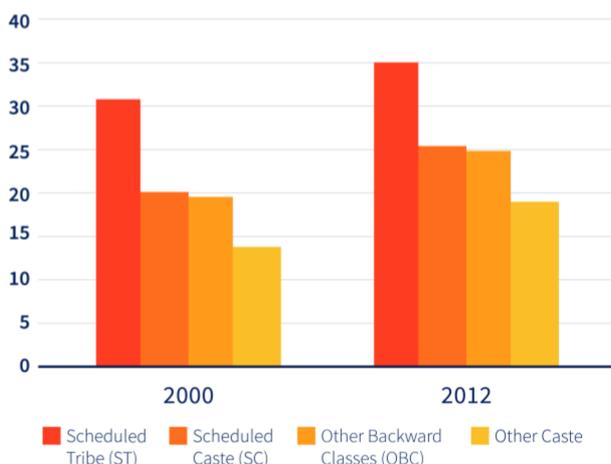
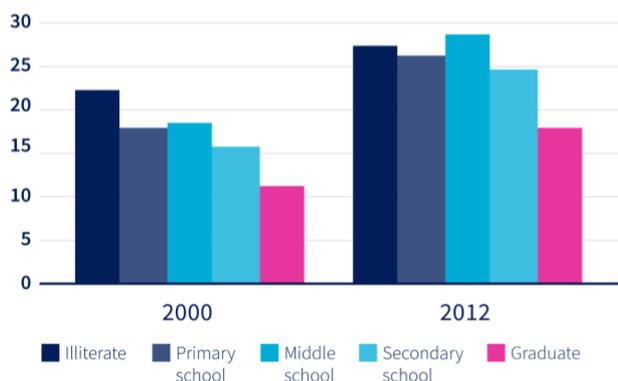
Cigarettes use



Bidi use



Smokeless tobacco use



Source: Bhan et al.¹²²

Tobacco Harm Reduction and Cessation Services and Products on the Market

India had the lowest quit rates among the countries surveyed in GATS 2 and 72% of the smokers who made an attempt to quit smoking reported that they tried to do so without any form of assistance.^{34,120} Only a small portion of smokers reported using NRT aids, prescription medicines, or other cessation support services, raising concerns over the accessibility and quality of these services. Further, nearly half of the cigarette and bidi users who made an attempt to quit reported being unable to maintain their status for more than a month.³⁴

Table 3.b.3: Percentage of Smokers Aged ≥15 Who Tried to Stop Smoking in the Past 12 Months by Different Cessation Methods, GATS 2 (2016-2017)

Background Characteristic	Use of cessation method ¹				
	Pharmacotherapy ²	Counselling/Advice ³	Switching to smokeless tobacco ⁴	Others ⁵	Without any assistance
Overall	4.1	8.6	4.1	4.8	71.7
Gender					
Men	4.2	8.6	4.0	4.6	71.5
Women	3.0	8.7	5.1	6.7	74.2
Age					
15-24	4.8	9.9	3.9	1.7	75.0
25-44	2.8	6.6	5.4	4.4	73.4
45-64	4.6	8.3	2.9	5.3	70.5
65	6.6	16.5	3.4	7.0	66.6
Residence					
Rural	6.6	8.2	2.7	5.6	76.2
Urban	3.0	8.8	4.7	4.4	69.9

- Note:** 1 Among current smokers and former smokers who have abstained for less than 12 months.
 2 Pharmacotherapy includes nicotine replacement therapy and prescription medications.
 3 Includes counselling at a cessation clinic and a telephone Quitline/helpline.
 4 Switching to smokeless tobacco is not a cessation method for smoking- though it is often perceived as such.
 5 Includes traditional medicines and other products.

Source: GATS 2.³⁴

In 2002, thirteen tobacco cessation clinics were created in India, representing the country's first formal intervention facilities. These included clinics devoted to oncology, cardiology, psychiatry, and surgery, as well as nongovernmental organization settings. Eventually expanding to include nineteen clinics, this initiative was supported by the WHO and the Ministry of Health and Family Welfare (MoHFW).⁹³ The aim was to generate

experience in tobacco cessation interventions and to investigate the feasibility of scaling up intervention strategies. A study on the effect of antismoking counselling showed that, in the first five years, 69% of users received only behavioral interventions; the rest received both behavioral interventions and pharmacotherapy. At the sixth week of follow-up, 14% of users reported to have completely quit tobacco and another 22% reported that they reduced tobacco use by at least 50%.^{93,121} The success of this initiative was ultimately limited by the small number of functional clinics and barriers to accessing these facilities, particularly among tobacco users from rural areas.

Chewing gums and patches are the only NRTs made in India; other NRT options are imported.¹²² In 2015, Rusan Healthcare Pvt. Ltd. launched India's first fully local nicotine patch, 2baconil.¹²³ According to a study on tobacco cessation medicines in Kerala, NRT gums have the highest sales in the state and the country because of low prices; yet, bupropion and varenicline are considered the most effective and affordable options when considering full treatment regimens.¹²⁴ These medications, however, are not readily accessible in the state: researchers found that bupropion and varenicline were not offered in surveyed facilities, including public hospitals and centers that provide tobacco cessation counselling or mental health treatment. The study also reported that less than 1% of local current smokers completed their treatment regimen each year with cessation medicines. More affordable and effective alternatives are needed to help increase access.¹²⁴

Table 3.b.4: Summary of Available Tobacco Use Data

Tobacco Product /Demography	Smokeless Tobacco (SLT)	Smoked Tobacco	
		Bidis	Cigarettes
%/Number of users (country-wide and adults aged ≥15) ³⁴	21.4% (199.4 million)	10.7% (99.5 million) (bidis + cigarettes)	
		7.7	4
Urban resident users, % ³⁴	15.2	4.7	4.4
Rural resident users, % ³⁴	24.6	9.3	3.8
Male users, % ³⁴	29.6	14	7.3
Female users, % ³⁴	12.8	1.2	0.6
Users without formal schooling, % ³⁴	28.9	11.3	3.6
Users with less than primary education, % ³⁴	30.7	14.1	5.6
Users with primary but less than secondary education, % ³⁴	24.1	8.5	4.3

Tobacco Product /Demography	Smoked Tobacco		
	Smokeless Tobacco (SLT)	Bidis	Cigarettes
Users with secondary education and above, % ³⁴	11.4	2.8	3.7
Users by income: ¹⁹	Highest among poorest households (poorest: 26.2% to 33.9%, richest: 11.4% to 13.5%)	Highest among poorest households (poorest: 26.3% to 16.8%, richest: 19.8% to 10.7%)	Highest among richest households (poorest: 1.2% to 1.3%, richest: 6.5% to 7.0%)
Users by socioeconomic class: ¹⁹	Highest prevalence among Scheduled Tribe	Highest prevalence among Scheduled Caste	Highest among General Caste
Risk perceptions among users	<ul style="list-style-type: none"> • >60% do not perceive SLT use as adversely affecting health³⁴ • Areca nut and products with tendu leaf are perceived as not harmful^{45,62} • >90% of SLT users believe SLTs cause oral cancer and dental diseases³⁴ 	Perceived as less harmful than cigarettes ^{xiii}	>90% perceive smoking as harmful and associated with diseases such as cancer, TB, and heart disease ³⁴
Associated diseases	<ul style="list-style-type: none"> • Higher risks of low birth weight and still birth of infants born to pregnant SLT users^{34,50} • TB⁵⁰ • Precancerous conditions such as oral submucous fibrosis⁵⁰ • Cancers of the oral cavity, pharynx, and esophagus, as well as stomach, lung, and liver cancers^{50,57,58} • Cardiovascular diseases, including stroke⁵⁰ • Diabetes⁵⁰ 	<ul style="list-style-type: none"> • Risk of respiratory disease, including respiratory TB (forced expiratory volume and forced vital capacity are worse for bidi smokers than for cigarette smokers)^{40,42,43} • Increased risk of TB compared with cigarette smoking⁴² • Cardiovascular diseases⁴² • Cancers (e.g., lung, oral, and pharyngeal cancer)⁴² • Diabetes⁴⁰ 	<ul style="list-style-type: none"> • Risks of low birth weight, TB, and oral cancer^{34,35} • Predominance of cardiovascular diseases, lung cancer, chronic obstructive respiratory disease, and diabetes^{34,35,40}
Access to cessation and harm reduction services/products	There are nineteen cessation clinics in India. ⁹³ Chewing gums and patches are the only NRTs manufactured locally while others are imported. ¹²² Pharmacotherapies such as bupropion and varenicline are considered as the most effective and affordable option when looking at the full treatment regimen. However, the availability and affordability of NRT and current cessation medication are limited. ¹²⁴		

NRT, nicotine replacement therapy; SLT, smokeless tobacco; TB, tuberculosis.

^{xiii} Results of a survey commissioned by the Foundation, 2019 (GATS 2 report does not specify perceived harmfulness of smoking bidis vs. cigarettes).

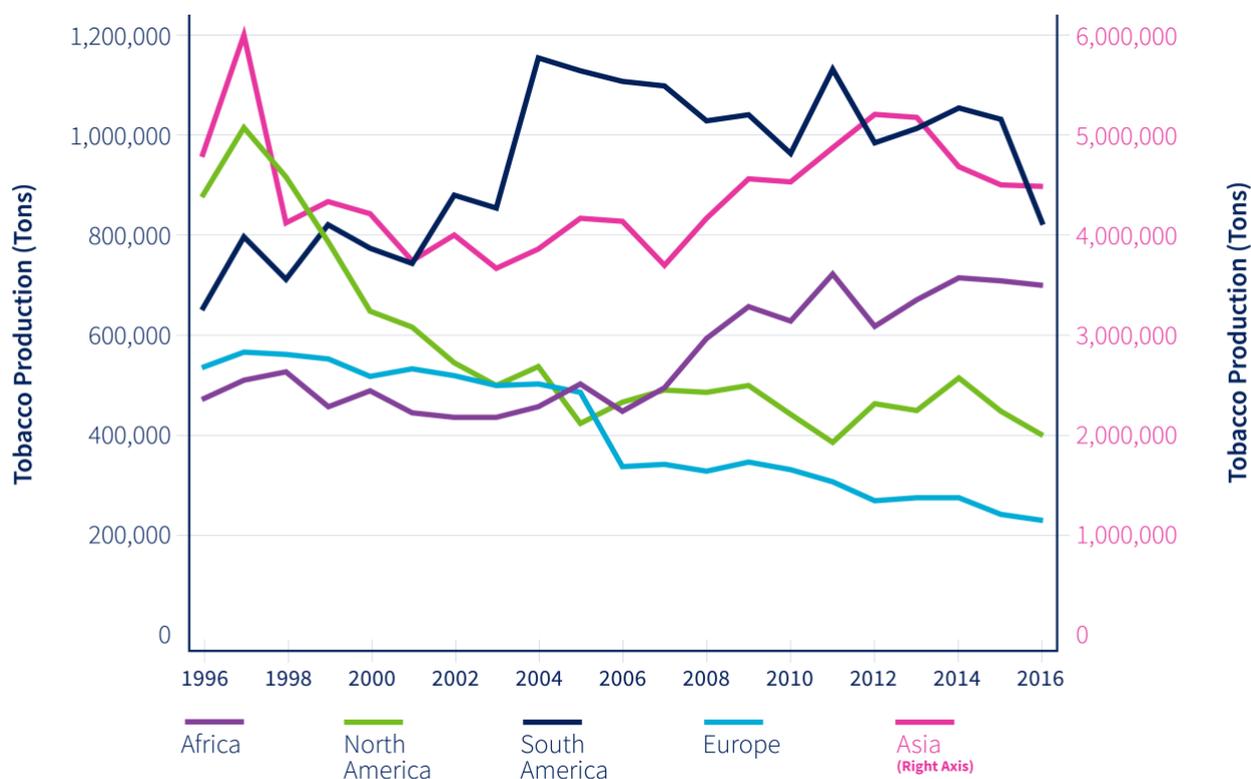
4 Tobacco Production, Employment, and Trade

A. Tobacco Production and the Economy

India's Role in Global Tobacco Production

Over the past two decades, global tobacco production has been characterized by a shift from high-income countries in Europe and North America to low- and middle-income countries in Africa, Asia, and South America (see Figure 4.a.1).¹²⁵ In line with this trend, in 2016, India became the second-largest producer of tobacco in the world.¹²⁵ Over the past two decades, the amount of tobacco India produced fluctuated from year to year. Still, production has generally trended upwards, with the country producing approximately 12,000 more tons each year^{xiv} between 1996 and 2016 (when it produced roughly 646,000 tons and 782,000 tons, respectively; see Figure 4.a.2). During this time, the area under tobacco cultivation nominally increased but the yield steadily improved, suggesting that rising yields have been a key driver behind the growth of tobacco production in India (see Figure 4.a.3 and Figure 4.a.4).

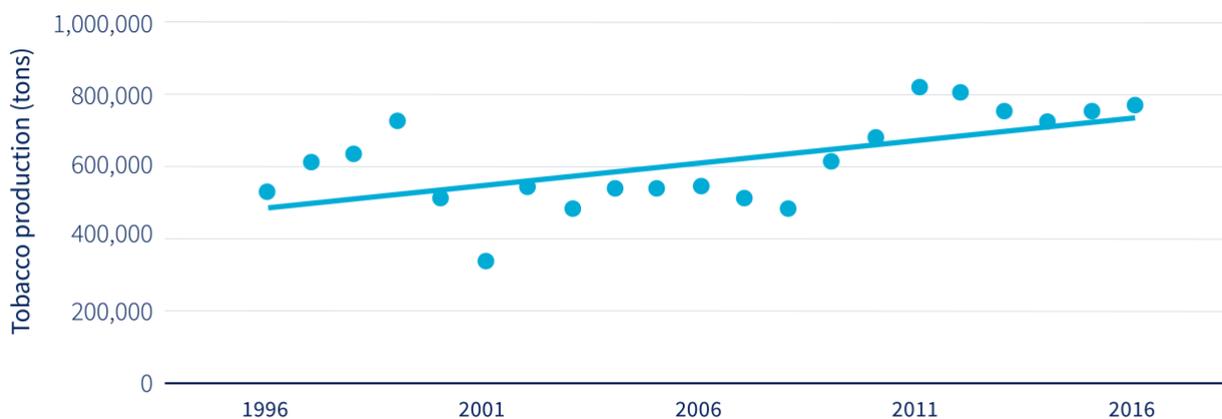
Figure 4.a.1: Trends in Tobacco Production in Tons by Region from 1996 to 2016



Source: Data from FAOSTAT.¹²⁵

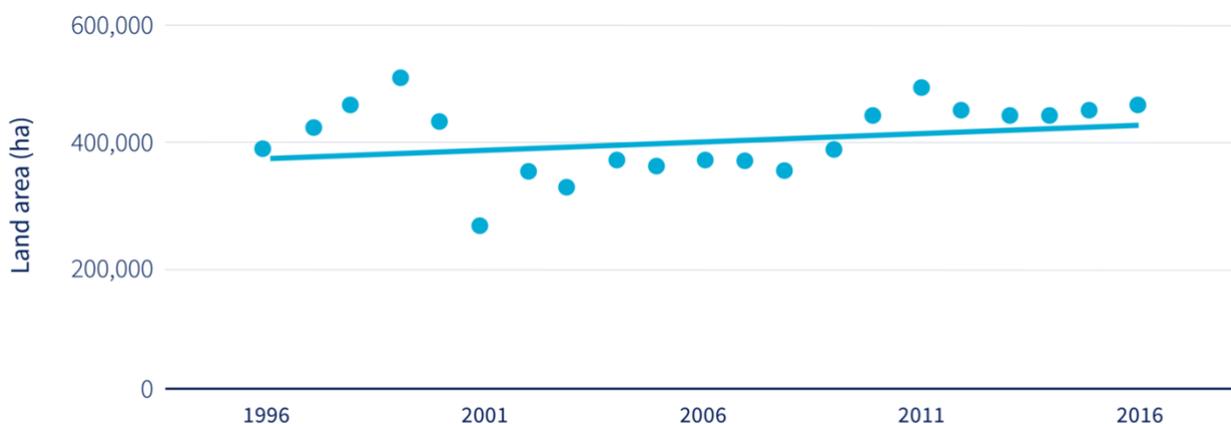
^{xiv} As estimated through simple linear regression.

Figure 4.a.2: Tons of Tobacco Produced by Year in India Between 1996 and 2016



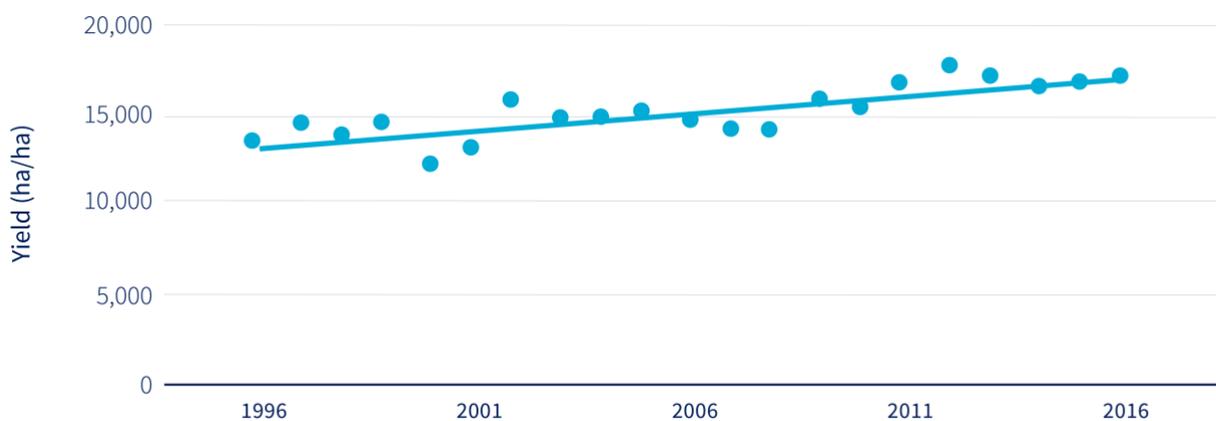
Source: Data from FAOSTAT.¹²⁵

Figure 4.a.3: Total Area of Land Under Tobacco Cultivation in Hectares in India Between 1996 and 2016



Source: Data from FAOSTAT.¹²⁵

Figure 4.a.4: Tobacco Yield in Hectograms per Hectare in India Between 1996 and 2016

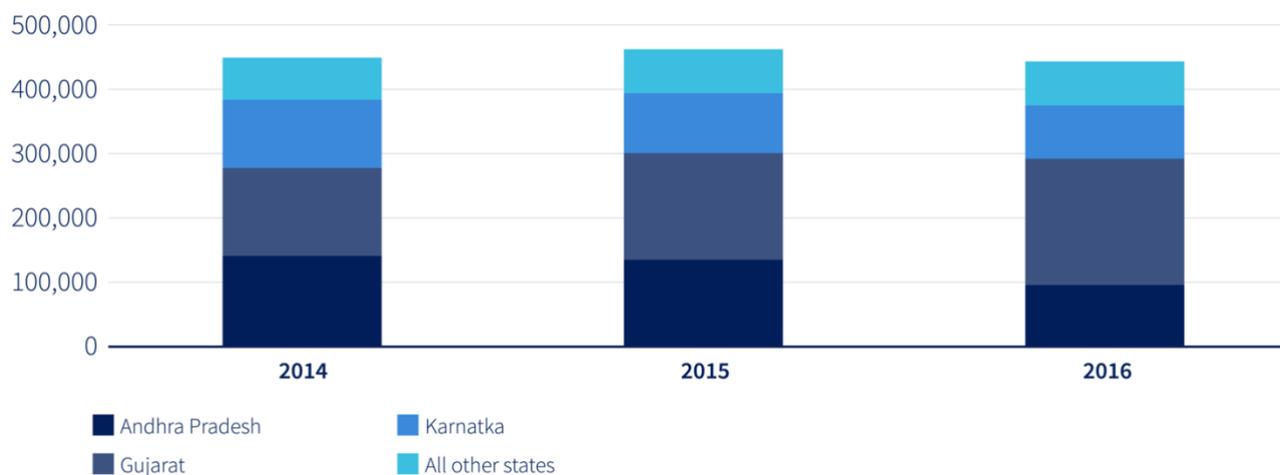


Source: Data from FAOSTAT.¹²⁵

Tobacco Production by Geography and Variety

Review of the data shows that three states – Andhra Pradesh, Gujarat, and Karnataka – account for the vast majority of land under tobacco cultivation in the country (see Figure 4.a.5).¹²⁶ This observation, of course, does not entirely come as a surprise given that growing tobacco requires a certain climate, environment, and topography to thrive. The geographic concentration of tobacco cultivation, however, is noteworthy. In recent years, Andhra Pradesh, Gujarat, and Karnataka have been home to nearly 85% of all land under tobacco cultivation in the country, with each state serving as home to one-fifth to two-fifths of all land under tobacco cultivation in a given year (see Figure 4.a.5).¹²⁶

Figure 4.a.5: Amount of Land Under Tobacco Cultivation in Hectares by State in India Between 2013 and 2016



Source: Data from Ministry of Agriculture and Farmers' Welfare.¹²⁶

Interestingly, all three of the major tobacco-producing states in India are also some of the top performers in terms of their contributions to GDP. However, this correlation may not reflect causation. It may reflect, for instance, a confounding factor such as the relative ease of doing business in all three of these states. The lack of clarity into this correlation demonstrates the need for more studies in India into the relationship between tobacco cultivation and the socioeconomic status in tobacco-growing districts in these states.^{xv}

Studies indicate that tobacco farmers typically cultivate either flue-cured tobacco (FCV) and, to a lesser extent, non-FCV varieties such as burley, air/sun cured, and oriental tobaccos, as well as the non-cigarette *bidi*, hookah, and chewing tobaccos.¹²⁷ Research into these varieties have focused primarily on increasing their productivity, with advances resulting in the yield of FCV and non-FCV tobacco varieties steadily increasing to roughly 1,600 kg/ha and 2,000 kg/ha, respectively, while maintaining the quality of tobacco leaf.¹²⁸

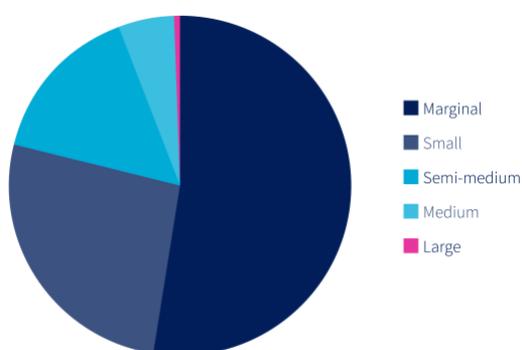
As the yield of tobacco has increased, so has interest in its potential uses beyond cigarettes. In particular, there has been steady interest in extracting several compounds from the tobacco leaf for commercial use. Researchers have explored the use of tobacco leaf as a source of organic acids such as malic and citric acid for the food and beverage industry, as a source of solanesol (used to produce vitamin E, vitamin K, and coenzyme Q10) for the pharmaceutical industry, and as a source of seed oil for use in the paint and soap industry.¹²⁸

^{xv} Studies have been conducted in India that use mixed method designs such as FGDs and government data to show that selected districts growing tobacco in Andhra Pradesh, Karnataka, and Gujarat have better socioeconomic indicators than non-tobacco-growing districts. This could be complemented with household-level surveys in these tobacco-growing districts to obtain a more robust and granular understanding of the situation on the ground and the impact on farmers.

The active ingredient in tobacco leaf – nicotine itself – has been the focus of increased interest as a source of pure nicotine for insecticide as well as smoking cessation products (e.g., nicotine gums, nicotine patches, and other forms of harm reduction and cessation therapies).¹²⁸ In recent years, India has become a leading producer and exporter of pure nicotine owing to the large network of tobacco-growing farmers extracting nicotine from tobacco waste and the high content of nicotine in tobacco leaf grown in certain regions.^{xvi} However, post-harvest processing of non-FCV varieties remains largely unmechanized and underdeveloped. Recently, a first-ever cooperative was formed in one of the leading tobacco-producing states, Gujarat, to help tobacco growers move up the value chain by extracting tobacco sap for nicotine production.¹²⁹

Additional research into the current and potential uses of tobacco leaf – outside of the production of cigarettes – may lead to potentially less harmful alternatives to its use. Experts have commented on the irony of India producing a substantial amount of pure nicotine for NRTs and other therapies for use overseas with only limited use of such cessation products domestically.^{xvii} The need to understand why that may be also represents an important area of potential research.

Figure 4.a.6: Number of Landholdings (in Thousands) Under Tobacco Crop by Size



Source: Data from Saxena et al.¹³⁰

Tobacco's Contribution to the Economy

Tobacco is typically grown by farmers with marginal or small landholdings (see Figure 4.a.6).¹³⁰ Despite the relatively large share of global tobacco production in India, unmanufactured tobacco represents a relatively small portion of the country's economy. Agriculture's contribution to the GDP has declined steadily over the years, but roughly 17% of the country's GDP in recent years comes from agriculture and, of the plethora of crops grown in India, tobacco comprises 0.2% of total gross cropped area (by comparison, rice comprises 22.3% of total gross cropped area).^{131,132}

Interestingly, even as the amount of tobacco produced in India has increased over the past two decades, the share that India exports has consistently remained less than 37% (see Figure 4.a.7).^{133,134} This finding suggests that most tobacco grown in India is for domestic consumption and that the country has captured several links in the tobacco value chain with the ability to process, manufacture, trade, and sell tobacco products in country.¹³⁴ Despite the modest contribution of its growth to the agricultural sector, tobacco still plays a significant role in the country's economy and employment.

^{xvi} Based on communication with experts in the sector.

^{xvii} Based on communication with experts in the sector.

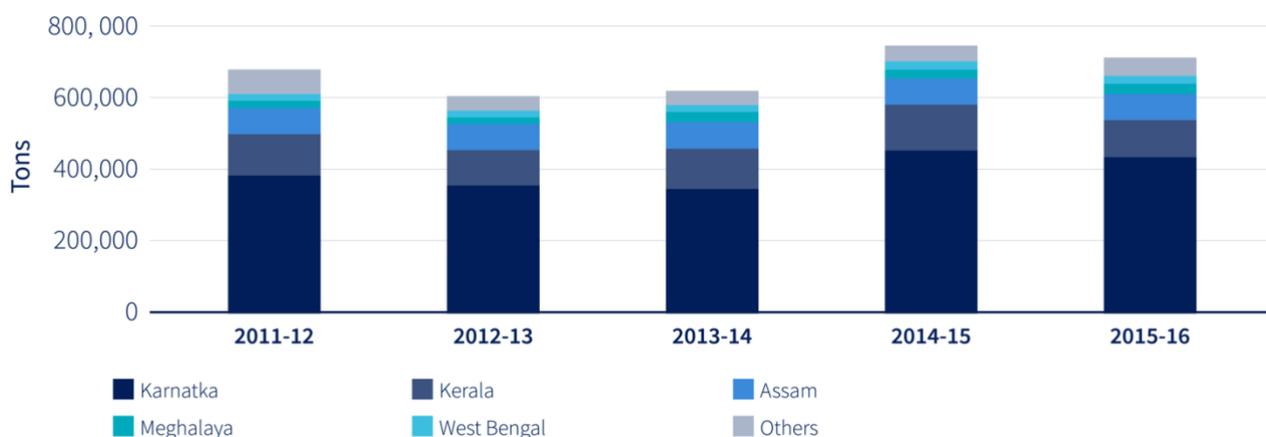
Figure 4.a.7: Tobacco Production (navy) versus Exports (light blue) in Tons in India Between 1996 and 2016



Source: Data from FAOSTAT and BACI.^{125,133}

In addition to tobacco leaf, two other crops – areca nut (also known as betel nuts) and tendu leaf – play important roles in the tobacco economy. Their contribution to the tobacco economy reflects the popularity of tobacco products such as betel quid,^{xviii} paan, and bidis in South and Southeast Asia.^{56,59,135} India produces nearly half of the entire global areca supply.¹²⁵ Its production is subsidized by the government¹³⁶ and increased roughly 50% from 483,000 tons in 2007 to 723,000 tons in 2017¹²⁵ (see Figure 4.a.8).

Figure 4.a.8: Areca Nut Production by State in India by Tons Between 2011 and 2016



Source: National Horticulture Board.¹³⁷

The growth in areca nut production reflects an increase in both the yield and the area under cultivation during this time, with production concentrated in just a few states.^{125,137} For example, Karnataka accounts for about

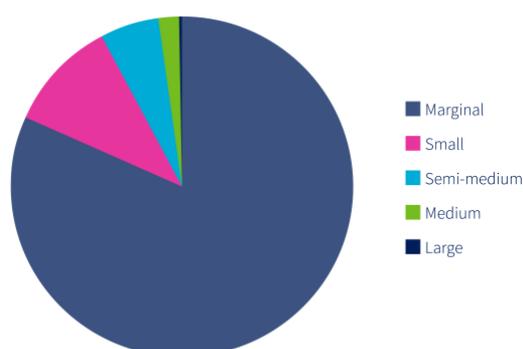
^{xviii} Areca nut is a key ingredient in betel quid, which is a liquid mixture of betel nut, tobacco, and other spices such as cinnamon and cardamom. The mixture is often mixed with lime and wrapped in leaf in a product known as paan. Both betel quid and paan are popular in India and are often used in cultural and religious ceremonies.

63% of India’s areca nut production, and just three states – Karnataka, Kerala, and Assam – account for almost 90% of production (see Figure 4.a.8).¹³⁷ Most areca nut farmers cultivate a marginal or small plot of land that is less than two hectares (see Figure 4.a.9).¹³⁸ Farmers then either sell their produce directly to a cooperative and retailers or to wholesalers through the Agricultural Market Produce Committee.

In terms of impact, a study conducted in Karnataka that looked at various regions, areca varieties, and farming systems showed that the increase in areca nut production helped most farmers cross the poverty line. The study emphasized that such farming systems played an important role in ensuring income security and that they were an important source of livelihood.¹³⁹

Little is known about other aspects of the areca nut supply chain. According to a limited number of studies, there exist between 6.25 million and ten million areca-related jobs in India; these studies also detail some of the potential occupational hazards of areca nut processing, such as repetitive motion injuries from cracking nuts.^{52,61,136,140} Such findings outline the potential scale and scope of the areca nut industry while underscoring the need for a more granular understanding of the areca nut supply chain and its impact on employment, environment, and health.

Figure 4.a.9: Number of Areca Nut Landholdings by Size



Source: Horticultural Statistics at a Glance 2017.¹³⁸

Tendu leaf is a key ingredient in *bidis*. As mentioned in Section 3, the leaves are used to wrap the tobacco and other ingredients. Given the prevalence of *bidis* in India, *tendu* leaves – primarily grown in Madhya Pradesh (25%), Chhattisgarh (20%), Bihar (15%-20%), Odisha (15%-20%), and Maharashtra (10%)¹⁴¹ – are a valuable commodity. Upon recognizing the commercial value of *tendu* leaves in the 1960s, several state governments organized the collection, trade, and marketing of the leaves. These efforts often entailed establishing cooperatives and distributing bonuses to high-performing *tendu* pluckers.¹⁴² The collection of *tendu* leaf is a major source of livelihood for tribal families (a disadvantaged socioeconomic group referred to as either “Scheduled Tribes” [STs] or “Scheduled Castes” [SCs]); and an estimated two million Indians are employed as *tendu* leaf pluckers, though this population may actually be much higher, given the number of unreported children believed to be assisting in the trade (see Table 4.a.1).¹⁴³

Table 4.a.1: Estimated Tobacco-Related Employment Based on Household-Level Survey from Tobacco Producing and Processing Regions in India

Type of job	Estimated number of jobs
Growers	420,000
Agricultural Laborers	570,000
Tobacco Processors	70,000
Tendu Leaf Pluckers	2,150,000
Bidi Rollers	3,600,000
Factory Workers	440,000
TOTAL	7,250,000

Source: Nayak.¹⁴³

Employment estimates vary significantly; and a detailed understanding of the *tendu* leaf supply chain – as well as impact on employment, environment, and health – are limited by the paucity of data on the trade. Unlike tobacco leaf, for instance, *tendu* leaf production and sales do not appear to be tracked reliably by the government or international agencies. Understanding the production and sale of the *tendu* leaf is further complicated by the fact that so much of the supply chain varies from state to state.

B. Tobacco Processing and Tobacco-Related Employment

Since most of the tobacco grown in India appears to be processed, manufactured, traded, and sold within the country, several experts have argued that its contribution to the economy and employment extends beyond the agriculture sector. Given the centrality of such arguments to the opposition of supply-side tobacco control measures, the argument merits an examination, with an emphasis on the quantity and quality of tobacco-related jobs.

Estimates of the number of tobacco-related jobs vary considerably. At the higher end – which is often cited in opposition to supply-side tobacco control efforts – are reports estimating that the sector accounts for approximately 45 million jobs in India.¹⁴⁴⁻¹⁴⁶ That estimate includes approximately 8.5 million workers involved in tobacco processing factories and *bidi* making. In contrast, a recently-published study in a peer-reviewed academic journal estimates that the tobacco industry produces roughly 7.25 million jobs in India – including 70,000 jobs in tobacco processing, 44,000 jobs in tobacco factories, 2.15 million jobs in *tendu* leaf plucking, and 3.6 million jobs in *bidi* rolling (see Table 4.a.1).¹⁴³

In a country with more than half a billion workers, tobacco-related employment may represent less than 1.4% of all jobs.^{143,147} Such findings stand in stark contrast to industry estimates and suggest that a review of the differences in data is required and, although substantial, the number of tobacco-related jobs in India could be lower than often claimed.

According to sex-disaggregated data across 17 states in 2014, about 75% of bidi workers are women (see textbox, Gender and the *Bidi* Sector, for more details).¹⁴⁸

The deep dependence on *bidi* for livelihood underscores the complexity of diversification, suggesting that accomplishing a change in livelihood away from tobacco crops is not as simple as substituting another livelihood. Rather, it may require the development of an entirely new set of drivers and a conducive ecosystem to enable a shift to alternative and sustainable forms of livelihood.

Gender and the *Bidi* Sector

The bulk of the *bidi* manufacturing industry consists of home-based women workers, most of whom live below the poverty line.^{156,157} *Bidi* workers are estimated to be among some of the poorest paid employees in India with limited social protections.^{158,159} Cultural barriers to women's economic participation, gendered labor force segregation, less opportunities in the formal economy, structural changes to the economy and displacement from other sectors, and lack of alternative income-generating opportunities, among others, has likely fueled women's participation in *bidi* rolling.^{13,160,161} Women *bidi* rollers often rely heavily on the unpaid work of other family members. In some parts of India, women are first introduced into *bidi* making when they are still girls, some as young as four years old.¹⁶²

The home-based system of *bidi* production and the nature of contract work enables manufacturing companies to maintain a vast network and evade labor laws that regulate work conditions, wages, and other employee benefits.¹⁶² According to a survey of *bidi* workers in Madhya Pradesh, their actual income earned was much lower than projected because of excessive rejection of rolled *bidis*, insufficient supply of raw materials, and other exploitative practices of contractors.¹³ Wage discrimination in the *bidi* industry is concealed by the gendered hierarchy in the division of labor, with the male employers and contractors having a significant advantage over the women home-based workers. The average daily income of employees not based in the home is more than three times the earnings of the home-based *bidi* rollers. A survey by the Labour Bureau revealed that the average wages for all *bidi* workers were approximately 40% less than the statutory minimum wage rates.¹⁶⁰

A number of laws, policies and government schemes have been developed since the 1960s for *bidi* workers such as the Beedi Workers Welfare Fund (BWWF), which includes medical assistance, education, housing and social security benefits; however, most *bidi* workers are not aware of these benefits.¹⁶³ Further, they must have identity cards issued by the *bidi* manufacturing companies in order to access the BWWF benefits.¹⁵⁸ Many women employed by registered companies do not receive identification cards. Women who roll *bidis* for unregistered companies also do not receive benefits, as unregistered companies are not legally bound to provide them to their workers.¹⁵

Quality of Tobacco-Related Employment

Shifting from the quantity to quality of tobacco-related employment also yields important insights. In terms of jobs created by tobacco processing, *bidi* rolling is – by both industry and independent estimates – the most common.^{143,145} *Bidi* rolling consists of hand rolling unprocessed tobacco in tendu leaves and bundling them for sale. The process requires little more than a box of unprocessed tobacco, tendu leaves, and any space to sit or stand. As a result, *bidi* rolling often takes place within the home and employs a disproportionate number of women and children. The repetitive motion associated with such work has been linked to high levels of neck, shoulder, and back pain, with one study finding that more than three-quarters of *bidi* rollers report such symptoms.¹⁴⁹

In addition to joint and muscle pain from repetitive motion, *bidi* rolling requires near constant handling of tobacco leaves that contain nicotine, which can be absorbed through the skin. Workers who do not wear gloves – a common occurrence because the weather is hot, the need to minimize costs is high, and an understanding of the health risks is low – are at an even higher risk.^{150,151} Researchers have also found high levels of skin diseases such as dermatitis among *bidi* rollers.¹⁴⁹

Further compounding the health risks of *bidi* rolling is the fact that such work is often carried out in small homes with poor ventilation.¹⁵² Khanna and colleagues found that inhalation of tobacco dust among *bidi* rollers can produce genetic damage and mutations.¹⁵³ Other researchers found similar evidence.^{154,155} Joshi and colleagues also found that the inhalation exposures among *bidi* workers appeared to increase the risk of tuberculosis as well as frequency of symptoms such as coughing, breathlessness, and generalized weakness.¹⁴⁹ Collectively, these findings suggest that tobacco-related employment, especially involving tobacco processing and *bidi* rolling, is associated with serious health hazards.

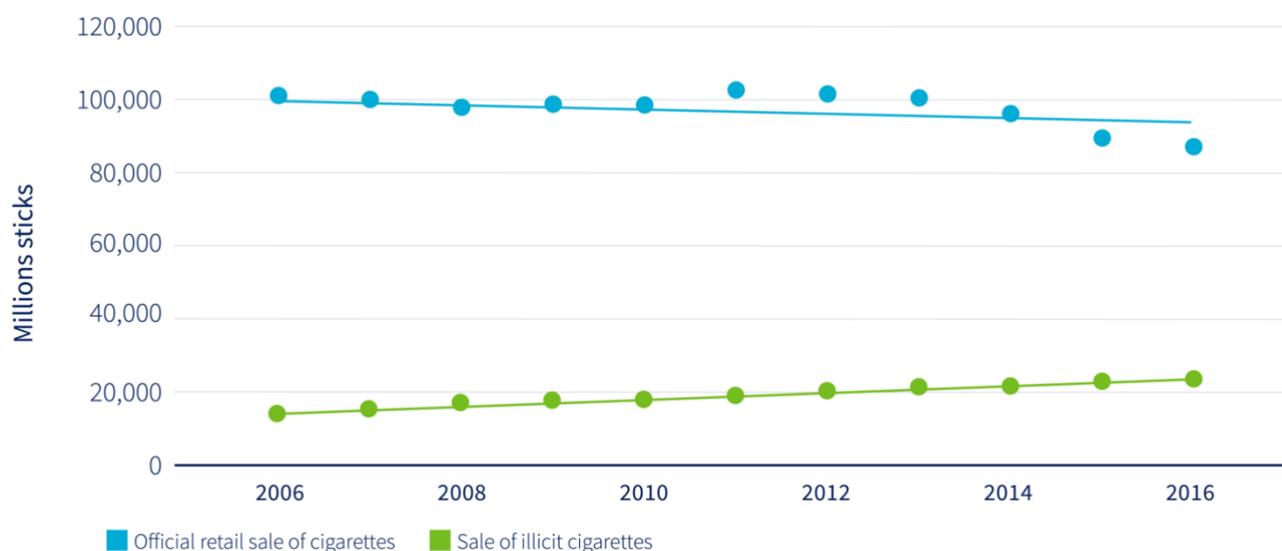
C. Tobacco Products and Illicit Trade

Tobacco products in India run the gamut, ranging from cigarettes to *bidis* to *gutkha* and other smokeless forms. The illicit trade and sale of these products are substantial. According to the Ministry of Finance and the Ministry of Commerce and Industry, between 2014-2015 and 2016-2017, the seizure of smuggled cigarettes increased more than 136%, from 1,312 to 3,108 cases.¹⁶⁴ India has become the fourth largest market in the world for the trade and sale of illicit cigarettes, as of 2018.¹⁶⁴⁻¹⁶⁶

Such statistics have caught the attention of cigarette sellers and government officials alike. For the official retail cigarette sellers, the concern is likely rooted in the fact that a rise in the trade and sale of illicit cigarettes has been mirrored by a decline in official retail sales. Between 2011 and 2015, for example, the sale of illicit cigarettes rose from 19.5 billion to 23.9 billion, while the official retail sales of cigarettes declined from 110 billion to 85.6 billion (see Figure 4.c.1).¹⁶⁶

Over the past decade, experts have also noted these corresponding trends: while illicit sales increased by approximately 5%, official retail sales declined 4.8%.¹⁶⁴ It is worth noting that the Ministry of Finance said that they have not conducted any study on the amount and trends of loss to the exchequer due to the illicit trade of tobacco products.¹⁶⁷ Experts suspect that the penetration of illicit cigarettes into the Indian market primarily reflects their cheaper prices – as a result of having evaded the requisite taxes – and, to a lesser extent, the absence of health warnings.^{164,165}

Figure 4.c.1: Millions of Cigarettes Sold in India Between 2006 and 2016



Source: Data from the Federation of Indian Chambers of Commerce and Industry (FICCI).¹⁶⁶

A particularly interesting dynamic vis-à-vis the trade and sale of illicit tobacco products is the prevalence of illegal *tendu* leaves. Notably, a study found that the difference between official estimates for *tendu* leaves auctioned versus total *bidis* made, according to the All India *Bidi* Industry Federation, was nearly 40% to 50% in 2008. This difference can likely be attributed to illegally traded *tendu* leaves by corrupt traders, local politicians, and even possibly insurgent groups.^{168,169} Such findings have led experts to suggest that *tendu* leaves in general and, specifically, illegally sold *tendu* leaves help ensure low prices and, in turn, the popularity of *bidis*.¹⁶⁸ Moreover, they argue that the failure to collect taxes on illegally sold *tendu* leaves likely resulted in a loss of approximately \$200 million USD for the government in 2007.¹⁶⁸ These findings, however, are often caveated by the observation that very little is known about the illegal trade of *tendu* leaves and its dynamics.

5 Key Players Across the Tobacco Sector

A. Key Players in the Tobacco Industry

Smoked Tobacco

Cigarettes

Retail sales of cigarettes in India are dominated by three leading players (see Table 5.a.1).⁹⁹ With country-wide distribution, a large portfolio of brands, and nearly 80% market share, the Indian Tobacco Company (ITC) is the largest player in the country. The company employs more than 26,000 staff at more than five factories and three leaf-threshing plants across six states.¹⁶⁴ In 2019, ITC's cigarette division accounted for 46% of its gross revenue, representing a decrease from previous years: the division was responsible for 52% of sales in 2018 and nearly two-thirds of sales in 2016 and 2017. This trend tracks with strategic changes within the company, which is attempting to reduce its dependence on tobacco for revenue.¹⁷⁰

The Indian government has a nearly 8% stake in ITC. Further, government-owned insurance companies are significant shareholders of ITC, yielding a combined direct and indirect government stake of nearly 25% (see Table 5.a.2). British American Tobacco (BAT) is the largest non-Indian investor in the Indian tobacco industry, holding an approximately 30% interest in ITC.⁹⁹ BAT also holds a 32% stake in Vazir Sultan Tobacco (VST). Philip Morris International (PMI) owns 25% of Godfrey Phillips, the second largest tobacco company.⁹⁹ Based on 2017-2018 estimates, Godfrey Phillips India generated approximately \$640 million USD in revenue.¹⁷¹ The company has business interests in chewing and confectionery products, mouth fresheners, and retail. It also runs an extensive cigar business and has had a license agreement with PMI since 2011 to manufacture and distribute its Marlboro brand in India.^{165,172}

Table 5.a.1: Leading Cigarettes Companies and Market Share in 2018

Company	Ownership	Market Share (NBO)
Indian Tobacco Company (ITC) Ltd.	Private; 30% BAT ⁹⁹ ; SUUT 7.94%; LIC 16.29% ¹⁷³	79.3% ¹⁶⁵
Godfrey Phillips India Ltd.	Private; 25% PMI ⁹⁹	10.9% ¹⁶⁵
Vazir Sultan Tobacco Company (VST) Ltd.	Private; 32% BAT ⁹⁹	7.7% ¹⁶⁵
Others	Various	2.1% ¹⁶⁵

BAT, British American Tobacco; LIC, Life Insurance Corporation of India; NBO, national brand owner; PMI, Philip Morris International; SUUT, Specific Undertaking of the Unit Trust of India.

Table 5.a.2: Shareholding of Indian Tobacco Company (ITC)

No.	Name of the Shareholder	Total Shares held	Shares as % of Total No. Of Shares
1	Bodies Corporate	3,742,848,064	30.51
2	QIB - Insurance Company Registered	393,048,215	3.2
3	Life Insurance Corporation of India	1,997,566,067	16.29
4	Specified Undertaking of the Unit Trust of India	974,531,427	7.94
5	Government of Singapore	193,588,227	1.58
6	General Insurance Corporation of India	215,474,572	1.76
7	ICICI Prudential Life Insurance Company Limited	165,751,813	1.35
8	Non-Resident Indian (NRI)	78,715,043	0.64
9	Trusts	98,972,684	0.81
10	The New India Assurance Company Limited	184,056,650	1.5
11	The Oriental Insurance Company Limited	136,362,834	1.11
12	Clearing Members	8,346,638	0.07
13	Foreign Nationals	222,120	0
14	IEPF	25,121,171	0.2
15	Tobacco Manufacturers (India) Limited	2,978,347,320	24.28
16	Myddleton Investment Company Limited	486,331,940	3.96
17	Rothmans International Enterprises Limited	154,954,890	1.26

Source: Moneycontrol.¹⁷³

Bidis

Given the informal, opaque, and decentralized nature of the industry, official data on *bidi* production, sales, and profits are difficult to track. There are about 300 major brands of *bidis*, and thousands of small-scale manufacturers and contractors.¹⁵⁹ A survey of 2,841 unorganized *bidi* manufacturing firms found that while the industry was spread across 17 states, more than 95% of *bidi* production was concentrated in 10 states.¹⁵⁹ Another study found that virtually all *bidi* manufacturing is unregistered and in the informal sector.¹⁷⁴ – features

that complicate the regulation of this sector. Indeed, Odisha’s industry minister stated that it is difficult to control *bidi* manufacturers because they routinely underreport production to avoid taxes, labor costs, or provision of benefits.¹⁷⁵ Major manufacturers include Tiger Brand *bidi* (in Madhya Pradesh, with \$90 million USD revenue as of 2011) and Ceejay Group (in Western Maharashtra, with \$5 billion USD in revenue as of 2011).¹⁷⁵

Smokeless Tobacco

For decades, the SLT industry has been dominated by the United States, Sweden, and India; in recent years, however, bans in India have reportedly resulted in shrinking retail volumes.⁹⁹ Like *bidis*, most SLT products are manufactured and sold in-country in traditional and informal markets.^{xix} About a third of the market comprises commercially manufactured products.⁴⁸ Data on smokeless tobacco manufacturers are limited, but key manufacturers are listed in Table 5.a.3.¹⁷⁶⁻¹⁷⁹ Indian-owned DS Group has more than 30% of retail volume share among current SLT companies in the country.^{165,180} To reduce dependence on tobacco, which accounts for 25% of its revenue, DS Group has diversified its portfolio.¹⁸¹

Table 5.a.3: Leading Smokeless Tobacco Companies

Company	Headquarters	Notes
Dhariwal Industries	Pune	One of the oldest SLT companies in India. It is part of the Manikchand Group, with business interests in packaging, bottled water, power, and real estate. ¹⁷⁶
Dharampal Satyapal Ltd. and Dharampal Premchand Ltd. (“DS Group”)	Kolkata, Gurgaon	The DS Group has been in business for more than 90 years with 85% of its revenue coming from chewing tobacco and paan masala. Starting from December 2014, DSL began to shift tobacco sales into a newly formed entity within the group (DS Chewing Products LLP). ¹⁷⁷
Som Sugandh Industries (also known as the “Dilbagh Group”)	Delhi	The third largest SLT company in India and produces three products – Dilbagh brand (gutkha), Talab (gutkha), and Hot (khaini). Talab Gutkha is packaged “in attractive sachets” making it a “hot favorite among youth across all income groups.” ¹⁷⁶
Vimal Pan Masala	Delhi	Widely available
Shikhar Group	Delhi	Produces gutkha, pan masala, and khaini. ¹⁷⁸
JMJ Group	Goa	Manufactures pan masala with highly flavored ingredients like elaichi, catechu, lime, spices, and saffron. ¹⁷⁹

SLT, smokeless tobacco.

B. Lead Funders, Researchers, and Advocates for Tobacco Control and Related Research

Most of the tobacco control funding in India traces back to Bloomberg Philanthropies and, specifically, the Bloomberg Initiative to Reduce Tobacco Use. From 2008 through 2019, the organization invested \$1 billion USD in global tobacco control¹⁸² through their largest investment vehicle, the Campaign for Tobacco-Free Kids, and

^{xix} Like *bidis*, many of the SLT products are made in home-based units and are largely untaxed.

through four partner organizations: Centers for Disease Control and Prevention, the Johns Hopkins Bloomberg School of Public Health, the World Health Organization (WHO), and the World Lung Foundation.

These investments primarily serve to implement MPOWER policies, which, though important, need to be supplemented with better tools to accelerate a reduction in deaths from smoking. In 2016, the Ministry of Home Affairs raised concerns that Bloomberg Philanthropies was running a campaign to “target” Indian tobacco businesses and “aggressively” lobby against the sector.¹⁸³ As context, India has stepped up scrutiny of nongovernmental organizations registered under the Foreign Contribution Regulation Act (FCRA), cancelling the FCRA licenses of more than 20,000 nonprofit organizations.¹⁸⁴ A list of Bloomberg grantees through December 2020 is available (see Table 5.b.1).¹⁸⁵

Several tobacco-related research programs (listed in Table 5.b.2) are supported by the Wellcome Trust/Department of Biotechnology India Alliance, a public charity that funds Indian health and biomedical research.¹⁸⁶⁻¹⁹³ The US National Institutes of Health (NIH) is also active in supporting research on tobacco use prevention.¹⁹² Under the NIH umbrella, the Fogarty International Center (FIC) is dedicated to building partnerships between international health research institutions and training the next generation of scientists for global health needs (see Table 5.b.2).¹⁹⁴

Table 5.b.1: Programs Funded by Bloomberg Initiative to Reduce Tobacco Use

Projects	Grants	Focus	Approach
Advancing the NTCP in Uttarakhand through capacity building, multi-stakeholder engagement, legislation enforcement, and stopping tobacco industry interference	Balajee Sewa Sansthan	Tobacco control policy	Capacity building
Developing and strengthening institutional mechanisms to implement national tobacco control law and NTCP in the state of Jammu and Kashmir, and adopting guidelines to protect the state government’s program on tobacco control aligned with FCTC article 5.3	Directorate of Health Services Kashmir	Tobacco control policy	
Strengthening of NTCP in Gujarat	Faith Foundation	Tobacco control policy	Capacity building
Advancing tobacco control in Haryana, Punjab, and Chandigarh through capacity building, enforcement of tobacco control laws, and multi-stakeholder engagement	Generation Saviour Association	Tobacco control policy	Policy advocacy
Contributing to ensuring maximization of “tobacco-free” culture in Gujarat by engaging with policy makers, implementers, and other stakeholders	Institute for Studies and Transformations		
Undertaking steps toward Tobacco Free Generation 2025 through effective implementation of smoke-free, TAPS-free policies, and other initiatives including progressive restriction of the sale of tobacco products	Karnataka State Health and Family Welfare Society – Anti-Tobacco cell	Tobacco control policy	Legislative/ policy development
Advancing tobacco control in Kerala through implementation of strategic policies	Kerala Voluntary Health Services	Tobacco control policy	Community mobilization

Projects	Grants	Focus	Approach
Advancing tobacco control through institutionalization of the NTCP, and capacity building and implementation in the state of Madhya Pradesh	Madhya Pradesh Voluntary Health Association	Tobacco control policy	Capacity building
Advancing tobacco control through capacity building, multi-stakeholder engagement, and enforcement of legislation in Marathwada region of Maharashtra	Marathwada Gramin Vikas Sanstha	Tobacco control policy	Capacity building
De-normalizing tobacco industry's corporate social responsibility in India	Mary Anne Charity Trust		Industry monitoring
"Operation Suraksha" – ensuring smoke-free and TAPS-free environment across 11 city corporations in Karnataka through institutionalization	Movement for Alternatives and Youth Awareness		Capacity building/implementation support
Effective implementation of tax and TAPS measures for prevention and control of smokeless tobacco in South East Asia Region	National Institute of Cancer Prevention and Research	Tax/price	Policy implementation
Programs for government and private lawyers working in NTCP and state cells to develop capacity in tobacco control and related legal strategies	National Law School of India		Capacity building
Advancing tobacco control at national and subnational levels through capacity building, MPOWER implementation, and support to NTCP	Post Graduate Institute of Medical Education and Research	Tobacco control policy	Capacity building
Advancing tobacco control through system strengthening for NTCP and implementation of evidence-based strategies in Bihar, Jharkhand, and Delhi	Socio Economic and Educational Development Society	Tobacco control policy	Legislation implementation
Youth-led coalition building to promote educational & advocacy campaigns for tobacco control in Andhra Pradesh	Star Youth Association		Advocacy
Prevention of tobacco use through policy change, leadership, and life skills development	Tomorrow's Foundation		Capacity building/Policy development
Comprehensive strategies compliant with FCTC Article 5.3 and MPOWER	Uttar Pradesh Voluntary Health Association	Tobacco control policy	Policy implementation
Supporting the development of tobacco-free Rajasthan	Voluntary Association of Agricultural General Development Health and Reconstruction Alliance		Policy development
Supporting the development of tobacco-free Lucknow	Vinoba Sewa Ashram		Policy development
Strengthening partnerships and links between health and development institutions including for tobacco control	Voluntary Health Association of India		Advocacy

Projects	Grants	Focus	Approach
Promoting effective tobacco control through education, awareness, research, and stakeholders' dialogue; supporting tobacco control in Assam; helping make Indian cities and younger generations tobacco-free	Voluntary Organization in Interest of Consumer Education		Advocacy

FCTC, Framework Convention on Tobacco Control; NCT, National Capital Territory; NTCP, National Tobacco Control Program; TAPS, tobacco advertising, promotion, and sponsorship.

Source: Bloomberg Philanthropies.¹⁸⁵

Table 5.b.2: Lead Funders for Tobacco Control and Related Research in India

Funders	Introduction	Major Tobacco Control Programs/Research
Bloomberg	The Bloomberg Initiative funds activities in LMICs, with a special emphasis on India ¹⁹¹	Key strategies include creating smoke-free public places, banning tobacco ads, increasing tobacco tax, requiring health warning labels, and supporting mass media campaigns ¹⁸⁶ 2019 policy focus: “Support effective tax and price measures for tobacco products with an emphasis on bidis; support FCTC- compliant COTPA amendment at the national level; advocate for effective, comprehensive, FCTC-compliant implementation of TAPS and/or smoke-free policies; and counter industry interference and support passage and implementation of Article 5.3” ¹⁸⁷
Wellcome Trust	The Wellcome Trust/DBT India Alliance is an independent initiative funded equally by the Wellcome Trust, UK and the Department of Biotechnology (DBT) and government of India, aiming to gather transformative ideas and supporting research on improving health and well-being ¹⁸⁸	Funded a study on integrating tobacco cessation into routine dental practices in 2018. Research focused on understanding how the oral health care system helps support tobacco cessation, changes needed to benefit tobacco cessation, and views of dental patients on tobacco control services ¹⁸⁹
		Funded a study on genetic signature for tobacco and betel nut chewing HPV-negative early tongue cancer and a prognostic biomarker for metastasis, which found genomic alterations and a tobacco mutational signature in patients with early-stage tongue cancer. These patients habitually chewed betel nuts, areca nuts, lime, or tobacco ¹⁹⁰
		Funded a study on the impact of India’s NTCP on bidi and cigarette consumption. Findings indicated that early implementation of the NTCP may not have produced reductions in tobacco use, which reflects generally poor performance of the implementation and enforcement of tobacco control policies ¹⁹¹
National Institutes of Health (NIH)	NIH supports research on tobacco use prevention, including projects in regulatory science, addiction, tobacco control, health effects, cancer prevention, and behavioral studies ¹⁹²	NIH Fogarty International Center supports Project ACTIVITY in Delhi, a group-randomized intervention trial designed to develop, implement, and evaluate a comprehensive, community-based approach to tobacco control for youth living in urban slums ¹⁹³

COTPA, Cigarettes and Other Tobacco Products Act; FCTC, Framework Convention on Tobacco Control; LMICs, low- and middle-income countries; NTCP, National Tobacco Control Program; TAPS, tobacco advertising, promotion, and sponsorship.

C. Status of Media Awareness and Coverage of Tobacco-Related Issues

According to GATS 2, 76% of adults noticed anti-smoking information and 67.3% of adults noticed anti-SLT information in a public place or medium (print or electronic media, internet, public walls, transportation) during the 30 days preceding the survey (see Table 5.c.1).³⁴ Exposure to anti-smoking information was higher than the exposure to information against SLT use. A higher percentage of men noticed anti-smoking/SLT information than women. For both men and women, a smaller proportion of tobacco users noticed anti-tobacco

information than non-users. More urban residents reported noticing anti-smoking information and anti-SLT information than rural residents.³⁴

The use of mass media campaigns has been adopted as a critical public health policy tool, with one campaign reporting that anti-SLT advertisements led 75% of smokeless-only users and 77% of dual users to be more concerned about the effects of SLT on their health.¹⁹⁵ Another study indicates that a tobacco control mass media campaign had the desired effect among women and rural tobacco users with lower socioeconomic status.¹⁹⁶

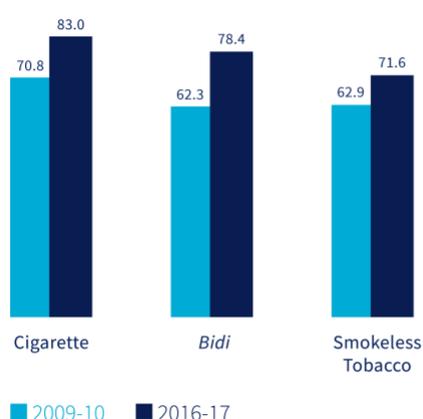
Table 5.c.1: Percentage of Adults Aged 15 or Above Who Noticed Anti-Tobacco Information During the Last 30 Days at Any Location (GATS 2)

Background Characteristic	Anti-smoking information			Anti-smokeless tobacco information		
	Overall	Current smoker	Current non-smoker	Overall	Current user of smokeless tobacco	Current non-user of smokeless tobacco
Overall	76.0	75.0	76.1	67.3	62.9	68.5
Gender						
Men	84.3	78.4	85.7	75.5	70.3	77.7
Women	67.3	40.1	67.9	58.6	44.9	60.7
Age						
15-24	82.5	79.6	82.6	74.3	70.6	74.7
25	73.6	74.6	73.5	64.7	61.7	65.7
Residence						
Urban	88.5	89.0	88.4	78.4	77.0	78.7
Rural	69.4	69.9	69.4	61.4	58.3	62.4

Source: GATS 2.³⁴

According to GATS 2, the percentage of tobacco smokers and SLT users who noticed health warning labels increased since GATS 1 (see Figure 5.c.1).¹⁹⁷ However, prior research in India found that only 51% of unique cigarette packs¹⁹⁸ and 2% of unique SLT products¹⁹⁹ had compliant health warning labels. The almost-complete lack of compliance for warning labels on smokeless products is compounded by the fact that these products are particularly popular among people in rural areas with lower levels of education.²⁰⁰

Figure 5.c.1: Percentage of Current Cigarette Smokers, *Bidi* Smokers, and Smokeless Tobacco Users Who Noticed Health Warning Labels (GATS 1 and GATS 2)



Source: GATS 1 and GATS 2.¹⁹⁷

Another study on the effectiveness of health warning labels on SLT products in four Indian states found that such warnings are low in effectiveness²⁰¹ (see Table 5.c.2). Researchers found that 27% of the SLT users surveyed were not aware of the health warning labels on packages. Among respondents who noticed the labels, fewer than a fifth reported that such warnings made them think about risks or about quitting.

Among SLT users who quit, graphic warnings appeared to be more effective than symbolic warnings (awareness of the warnings among SLT quitters was 86.8% for graphic warnings and 77.8% for symbolic warnings).^{xx} However, the change from symbolic warning to graphic health warning labels did not lead to a significant increase in effectiveness on any of the health warning label indicators among people who continued to use SLT products.²⁰¹ Other studies have reported that pictorial warnings were more effective than text warnings.²⁰² Still, most Indian users purchase loose cigarettes; as such, the vast majority of smokers will never see a pack.²⁰³

Table 5.c.2: Percentage of Smokers/Smokeless Tobacco Users Who Thought About Quitting Because of a Warning Label in the Past 30 Days (GATS 2, 2016-2017)

Counter Advertising	Men (%)	Women (%)	Overall (%)
Current cigarette smokers who thought about quitting because of a warning label	64.6	26.7	61.9
Current <i>bidi</i> smokers who thought about quitting because of a warning label	55.8	28.6	53.8
Current smokeless tobacco users who thought about quitting because of a warning label	52.9	29.9	46.2

Source: GATS 2.¹⁹⁷

Overall, 22.3% of adults had noticed some form of marketing (advertisement or promotion) of smoking tobacco and 20.5% of adults noticed any advertisement or promotion of SLT in the preceding 30 days.³⁴ Table 5.c.3 presents more detailed information on tobacco advertising or promotion by smoking status.¹⁹⁷

^{xx} As background, in 2009, India introduced a single health warning label on SLT products. It was a symbolic image of a scorpion covering 40% of the front surface. In 2011, this was changed to four graphic images. The study examined the effectiveness of changing symbolic to graphic images on SLT products.

Table 5.c.3: Percentage of Adults Aged 15 and Above Who Noticed any Type of Cigarette, *Bidi*, and Smokeless Tobacco Advertisement or Promotion in the Past 30 Days (GATS 1 and GATS 2)*

Tobacco Industry Advertising	Current Smokers (%)	Non-Smokers (%)	Overall (%)
Adults who noticed smoking tobacco advertisement	23.7	18.7	19.2
Adults who noticed any type of cigarette promotion*	8.1	4.9	5.3
Adults who noticed any type of bidi promotion*	11.0	4.7	5.4
	Smokeless Tobacco Users (%)	Non-Users (%)	Overall (%)
Adults who noticed smokeless tobacco advertisement	21.4	17.5	18.3
Adults who noticed any type of smokeless tobacco promotion*	8.0	5.1	5.7

* Includes products at sale prices, free samples, free gifts, or discount offers on other products when buying tobacco products, clothing, or other items with brand name or logo of the product, promotion in mail, and surrogate advertisement.

Source: GATS 1 and GATS 2.¹⁹⁷

In 2003, the Cigarettes and Other Tobacco Products Act (COTPA) was enacted in India to ban tobacco advertisements, except for “point of sale” (PoS) and “on-pack” advertising. A survey conducted in Mumbai showed that full compliance with PoS regulations is rare.²⁰⁴

5 Regulation of Tobacco: Status, Benefits, and Gaps

A. Major milestone policies for tobacco and harm reduction products market in India

2003:	India signs the WHO Framework Convention on Tobacco Control (WHO FCTC) ⁶²
2004:	India ratifies the WHO FCTC ⁶²
2007:	National Tobacco Control Program (NTCP) is established in 42 districts of 21 states/union territories of the country
2011:	Under the 2011 Food Safety and Standards Regulation, the MoHFW issues a ban on the sale of food products containing tobacco or nicotine, such as gutkha and paan masala ²⁰⁵
2012:	NTCP Operational Guidelines are released by MoHFW ²⁰⁶
2015-2016:	Ministry of Agriculture and Farmers' Welfare implements crop diversification program ²⁰⁷
2017:	National Framework for Joint TB-Tobacco Collaborative Activities published ²⁰⁸
	28% goods and services tax (GST) levied on all tobacco products ^{209,210}
	Tiered excise tax on cigarettes introduced ²¹¹
2018:	E-cigarettes banned by several states ²¹²
	NTCP implemented in all 36 states/union territories covering around 612 districts across the country ²¹³
	Tobacco quit-line number added on tobacco product packaging for the first time ²¹⁴
	Advisory issued by MoHFW to all states and union territories to stop the manufacture, sale, and import of electronic nicotine delivery systems (ENDS) ²¹⁴
	The National Health Profile 2018 outlines the goal of the Indian government with regard to tobacco: a relative reduction in the prevalence of tobacco use by 15% in 2020 and 30% in 2025 ⁶⁶
	Accession to FCTC Protocol to eliminate illicit trade in tobacco products ²¹⁵
2019:	The Indian Council of Medical Research publishes a white paper. The government links the health risks associated with e-cigarettes to that of combustible cigarettes, and recommends a nationwide e-cigarette ban ²¹⁶
	E-cigarettes are banned – first through an executive ordinance and then through parliament ²¹⁷

B. Tobacco regulation

Comprehensive tobacco control policies have been developed and reviewed by an Inter-Ministerial task force operating under the Cabinet Secretary and the NTCP, which was launched in 2007-2008. To implement this program, Tobacco Control Cells (TCC) were established at national, state, and district levels.²⁰⁶ The National Tobacco Control Cell (NTCC) operates under the MoHFW, and is responsible for overall policy formulation, planning, monitoring, and evaluating activities envisaged under the NTCP. Each state and district have been directed to establish similar TCC to review the implementation of the NTCP at subnational levels.²¹⁸

Between the 2007 and 2019, the funds and personnel allotted to the NTCP grew substantially. In the 2007-2008 period, the program consisted of eight full-time tobacco control staff with a budget of INR Cr 25 (\$551,876 USD)²¹⁹; in 2018-2019, the program comprised 1,489 full-time staff, with a planned budget of nearly INR Cr 105 (\$15.3 million USD).²²⁰

The NTCC is responsible for overall policy formulation and execution of various activities, including expanding cessation facilities; launching the National Tobacco Quit-Line and help line; establishing tobacco product testing laboratories; and promoting advocacy, intersectoral linkages, and research.²¹⁴ The State TCC is responsible for implementing the NCTP at the state level and integrating tobacco control into other health programs. District TCCs implement NTCP activities at a more local level; responsibilities include, for example, expanding tobacco cessation facilities, including those offering pharmacologic treatment.

C. Policies Prohibiting Tobacco and Harm Reduction Products in India

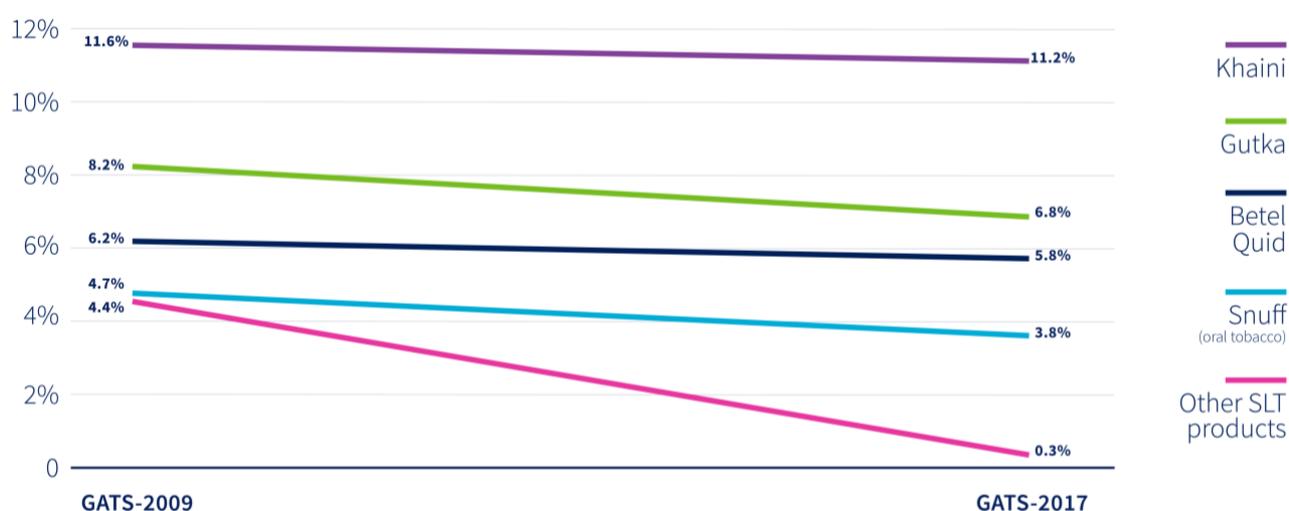
Harm Reduction Products

E-cigarettes are relatively new in India and have been a source of intense debate. In 2019, the Indian government banned the sale, manufacture, or import of all ENDS – including e-cigarettes, heat-not-burn devices, vape, e-shisha, and e-nicotine-flavored hookah.²¹⁷ There is a growing demand for reduced-risk products globally, as well as evidence on e-cigarettes as a potential cessation tool, and it is important to consider the implications of this ban.^{221,222}

Gutkha and Paan Masala

SLTs come in variety of forms, including *khaini*, *gutkha*, betel quid, and snuff. *Gutkha* is the second most used SLT (see Figure 6.c.1).^{34,223}

Figure 6.c.1: Commonly Used SLT Products Among the Adult (Age ≥15 Years) Indian Population in 2009 and 2017



SLT, smokeless tobacco. Sources: GATS²³⁴ and Cancer India.²²³

In 2011-2012, the Indian government banned the production, sale, and consumption of food products containing nicotine such as *gutkha*.²⁰⁵ By the end of 2012, 14 of India's 29 states had enacted the ban; and in April 2013, the Supreme Court directed all states to comply.²²⁴

Based on the GATS surveys, it is estimated that in 2009, nearly 26% of adults or 216 million Indian people used smokeless tobacco^{34,xxi}. Among this group, approximately 31.4%, or 68 million, used *gutkha*. In 2017, the number of SLT users had declined by 4.5 percentage points to 21.4% of the Indian population (to 207 million) and *gutkha* users had declined to about 66 million. The share of *gutkha* users among total SLT users remained about the same, at 31.8%. The India Against Cancer initiative estimated that in 2017, the number of adults in India who used *gutkha* was comparable to the entire population of France.²²³

This suggests that despite the ban, *gutkha* use remains common in India.²²⁵ A 2019 reports suggests that the SLT industry in India has continued to circumvent laws through strategies such as “brand stretching” (using SLT brands on non-tobacco products in likely violation of COPTA Section 5 and FCTC Article 13).⁴⁸ Further, a 2017 survey revealed that, among respondents living in states with bans, 86% stated that *gutkha* was easily available and only 5% stated that the product was difficult to find.²²⁶ Out of 18 states that have banned tobacco, survey results identified only two states, Madhya Pradesh and Tamil Nadu, where the ban yielded noticeable effects. The lack of efficacy in other states appears to be the result of poor enforcement.

D. MPOWER and FCTC Policies: Progress and Gaps

MPOWER serves two primary functions: (1) monitoring the smoking epidemic; and (2) measuring reductions in tobacco demand.

Monitoring

The 2019 *WHO Report on the Global Tobacco Epidemic* indicates that India fails to thoroughly monitor tobacco use.²²⁷ Though this report offers useful data on general prevalence, more research is needed to generate insights into specific populations of interest. For example, no periodic prevalence data are available for health care workers, who play important role in informing public opinion, particularly among youth.

Smoking Cessation Progress and Gaps in Policies

Since 2007, India has adopted a robust national tobacco cessation strategy and developed clinical guidelines for smoking cessation as part of NTCP. Cessation support (e.g., counselling) is now fully covered in primary health care facilities and hospitals, and partially covered in offices of health care professionals.²²⁰ Individuals hoping to quit also have access to pharmaceutical aids, including over-the-counter NRTs (e.g., patch, gum, lozenge, spray, or inhaler) as well as prescription medications such as varenicline (also known by the trade name Chantix) and bupropion (also known by the trade names Zyban or Wellbutrin). Yet, whereas NRTs are fully covered, prescriptions are not.²²⁰ Tobacco cessation is included in health care degree curricula, and primary care providers receive brief training in tobacco-related interventions (refer to Section 2 for limitations).²²⁷ Finally, in 2017, smoking cessation strategies were incorporated into treatment programs at tuberculosis clinics.²⁰⁸

Despite a plethora of programs and policies, many aspects of tobacco-related health care have seen minimal improvement. In 2009, 53% of patients were asked about their smoking status by health care providers and 46% were advised to quit. In 2017, these numbers rose only slightly, to 54.5% and 48.8%, respectively.^{34,228} The percentage of quit attempts by smokers stalled at 38% in both years, and only a fraction of smokers used

xxi We took population data from World Bank Health, Nutrition and Population database, and the prevalence rates from GATS 1 and GATS 2. In 2009, the population aged 15+ in India was 834.1 million: 404.6 million females and 429.5 million males. In 2017, the adult population increased to 967.2 million: 469.2 million females and 498 million males.

cessation aides: approximately 4.1% used pharmacotherapy and less than 10% sought counseling. This finding suggests that many smokers still try the “cold-turkey” method without seeking additional help. Indeed, the GATS 2 report reveals that 71.7% of surveyed individuals prefer tobacco cessation without any assistance.³⁴

India has strong health warning legislation, as elaborated in Section 5. Cigarette and SLT packaging must contain two warnings, including a photograph or graphic image that covers 85% of the front and rear display areas.²¹⁴ In 2009, nearly 71% of current smokers noticed warning labels on cigarette packages, and in 2017, that number increased 83% (see Figure 5.c.1).¹⁹⁷

India has enacted smoke-free legislation that bans the use of cigarettes in several public facility categories, including government, health care, and educational facilities. Despite fines for violators, compliance remains suboptimal. Rates of compliance are highest in public transportation and indoor offices, and lowest at universities.²²⁰

As part of a comprehensive tobacco control program, India conducts at least one national mass media campaign per year,^{xxii} consisting of three steps: (1) planning, (2) implementation, and (3) evaluation. However, as of 2018, an evaluation has not been conducted.²²⁰ Although direct advertising of tobacco products is banned on TV, radio, billboards, print outlets, and the internet, direct advertising is still allowed at the point of sale. Compliance with the advertising ban is moderate, receiving a score of seven out of ten in 2018.²²⁰ Data from GATS 1 and GATS 2 suggest the visibility of cigarette ads is very low.³⁴

Tax Policy on Tobacco Products

India has a tiered excise tax system for cigarettes, SLTs, and other tobacco products. With respect to cigarettes, there is a clear move toward a more uniform excise system than the current multi-tier excise tax system, in which tax rates vary based on the length and the filter characteristics of cigarettes (see Table 6.d.1).^{211,229} The government is currently attempting to eliminate unfiltered cigarette production by imposing similar tax rates on unfiltered and filtered cigarettes of the same or similar lengths. Further, the government is encouraging production of cigarettes 65-70 mm in length, charging higher rates for cigarettes that are longer than 70 mm. In FY 2015-16, excise duties on cigarettes generated only INR 183.3 billion in revenue,²²⁰ which was about 2% of total tax revenues of INR 9.4 trillion.²³⁰ However, the tax rates have changed since November 2017.

Table 6.d.1: Cigarette Excise Taxes in India Effective in July and November 2017

Cigarette Excise (CGST)	July 2017	November 2017
Length of unfiltered cigarettes, mm		
≤65	5% + INR 1591	5% + INR 2076
>65 to ≤75	5% + INR 2876	5% + INR 3668
Length of filtered cigarettes, mm		

^{xxii} A campaign is a communication activity lasting at least 3 weeks in a year and uses mass media (TV, radio, print, outdoor billboards, internet) to inform and educate the public about the harms of tobacco use and second-hand smoke exposure, to increase support for tobacco control policies or laws, to encourage tobacco users to quit, and/or to challenge tobacco industry practices.

≤65	5% + INR 1591	5% + INR 2076
>65 to ≤70	5% + INR 2126	5% + INR 2747
>70 to ≤75	5% + INR 2876	5% + INR 3668
>75	5% + INR 4170	36% + INR 4170

INR amounts are per thousand sticks.

Source: GST Council.^{211,229}

Prior to 2017 tax reforms, *bidis* were subject to specific excise taxes. Under this system, hand-rolled and machine-made *bidis* were taxed at a fraction of cigarette excise rates. As of July 2017, however, all tobacco products are subject to a 28% GST.²¹⁰ A study found that even the poorest *bidi* smokers are not sensitive to price adjustments.²³¹ The researchers found that price elasticity for *bidi* smokers of the lowest economic status is 0.43 – meaning, that if the price of *bidis* increases by 10%, then demand will be reduced by 4.3% among poor *bidi* smokers.

It is important to evaluate the level of tax burden on all tobacco products, with particular consideration of the burden on *bidis* and SLTs, as compared to cigarettes (see Table 6.d.2 and Table 6.d.3). Such evaluation reveals that the government still uses tax policy to protect small producers by levying relatively lower tax rates. The government has also used tax policy to bolster the ban on *gutkha* and similar products. In 2017, they levied on these products an ad valorem excise tax of 204%, compared with other SLT products (see Table 6.d.2). This suggests that the government has taken strides to reduce production and consumption of *gutkha* in states that do not effectively implement the ban. It also confirms that *gutkha* is still produced in some states, and that government is aware of as much. Relatedly, there is no information on tax avoidance by the local producers of tobacco products. Tax avoidance underscores the weaknesses of the current tax system and the tax administration.

Table 6.d.2: Excise Tax Rates in July and November 2017 on SLTs

Smokeless Tobacco Products	July 2017	November 2017
Pan masala	60%	60%
Pan masala containing tobacco “gutkha”	204%	204%
Chewing tobacco (without lime tube)	160%	160%
Chewing tobacco (with lime tube)	142%	142%
Filter khaini	160%	160%
Preparations containing chewing tobacco	72%	72%
Jarda-scented tobacco	160%	160%

Snuff	72%	72%
All goods, other than pan masala containing tobacco “gutkha” bearing a brand name	96%	96%
All goods, other than pan masala containing tobacco “gutkha” not bearing a brand name	89%	89%

Source: GST Council.^{211,229}

Table 6.d.3: Excise Tax on Other Smoked Tobacco Products

Smoking Tobacco Products	November 2017
Cigar, cheroots, cigarillo	21% or INR 4170/1000, whichever is higher
Hookah or gudaku, bearing a brand name	72%
Hookah or gudaku, not bearing a brand name	17%
Other water pipe smoking tobacco not bearing a brand name	11%
Other smoking tobacco bearing a brand name	49%
Other smoking tobacco not bearing a brand name	11%

Source: GST Council.^{211,229}

E. FCTC and Supply-Side Measures

Based on FCTC guidelines, India discourages “sales to and by minors” via three strategies: (1) creating smoke-free schools through health education curriculum; (2) installing information boards that convey no sale of tobacco products to minors; and (3) a ban on sales to and by minors in areas under the administrative control of the Railway Department.²⁰⁶ According to a presentation in 2014 sponsored by the MoHFW, implementation of this provision remains a challenge.²³²

The FCTC COP8 report indicates that the Indian government has implemented a crop diversification program, a sub-scheme of the *Rashtriya Krishi Vikas Yojna* program, in select tobacco-producing states.^{207,214} About 16% of tobacco land under cultivation have been diversified.^{125,233} The Tobacco Institute of India (TII) claims that between 2001-2002 and 2013-2014, the gross earnings of Flue-Cured Virginia tobacco growers have increased more than six times, from INR Cr 585 to INR Cr 3,873, respectively.²³⁴

There are central and state level laws, policies, and schemes available to support beedi workers though their impact has been limited. According to the FCTC COP8 report, the MoHFW and the Ministry of Labor & Employment initiated a Skill Development training program to help bidi rollers shift to alternative vocations, but the report contains no information about the outcomes of this program.²¹⁴ Other supporting initiatives include, for example, a Bidi Workers Welfare Fund, wherein bidi workers who have registered with the National Health Insurance Scheme receive identity cards and a range of social protections including scholarships for their children.²³⁵ Two older publications indicate that bidi workers desire a shift to alternative livelihoods but there are limited recent robust studies that have surveyed the socioeconomic status, health, and working conditions of those involved in the trade or successful transitions to alternative higher-income livelihoods.^{236,237}

A number of reports discuss the trade of illicit cigarettes in India.²³⁸ The government's report to COP8 indicates significant reductions in seizures of cigarettes and *bidis* in recent years: in 2015-2016, nearly 309 million cigarettes and 7.6 million *bidi* sticks were seized; in 2017-2018, these numbers dropped to 96 million and 1.8 million, respectively.²¹⁴ According to the TII, the government has stated that illicit cigarette seizures have more than doubled, from 1,312 incidents in 2014-2015 to 3,108 incidents in 2016-2017.²³⁹ Still, declining or increasing numbers of seizures do not provide a clear picture on the magnitude of illicit trade. Indeed, there is a significant knowledge gap about illicit trade and associated costs. For example, little is known about the flow of illicitly traded unmanufactured and manufactured tobacco products (e.g., counterfeit, original brands), originating countries (e.g., China, Cambodia, Pakistan, Indonesia, Philippines), mode of transportation, and the market price of illicit tobacco products.

References

1. The World Bank. India. <https://data.worldbank.org/country/india>. Accessed August 25, 2019.
2. Central Intelligence Agency. The World Factbook. <https://www.cia.gov/library/publications/the-world-factbook/geos/in.html>. Updated January 20, 2018. Accessed August 25, 2019.
3. The World Bank. GDP (current US\$): India. <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD>. Accessed January 24, 2020.
4. The World Bank. GDP growth (annual %) - India. https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=IN&name_desc=false. Accessed January 24, 2020.
5. The World Bank. The World Bank in India. <https://www.worldbank.org/en/country/india/overview>. Updated October 25, 2019. Accessed January 24, 2020.
6. United Nations Development Programme. *Human Development Report 2019*. <http://hdr.undp.org/sites/default/files/hdr2019.pdf>. Published 2019. Accessed March 11, 2020.
7. Oxfam International. India Extreme Inequality in Numbers. <https://www.oxfam.org/en/even-it/india-extreme-inequality-numbers>. Accessed August 25, 2019.
8. The World Bank. GINI Index (World Bank Estimate) - India. <https://data.worldbank.org/indicator/SI.POV.GINI?locations=IN>. Accessed August 25, 2019.
9. Kanbur R, Zhuang J. Urbanization and inequality in Asia. *Asian Dev Rev.* 2013;30(1):131-147. https://www.mitpressjournals.org/doi/pdf/10.1162/ADEV_a_00006. Accessed August 25, 2019.
10. Asaria M, Mazumdar S, Chowdhury S, Mazumdar P, Mukhopadhyay A, Gupta I. Socioeconomic inequality in life expectancy in India. *BMJ Glob Health.* 2019;4(3):e001445. <https://gh.bmj.com/content/4/3/e001445>. Accessed August 25, 2019.
11. Indian states by GDP per capita. Statistics Times website. <http://statisticstimes.com/economy/gdp-capita-of-indian-states.php>. Updated September 28, 2019. Accessed October 4, 2019.
12. Chakravarty M. The Class Divide in Indian Education System. <https://www.livemint.com/Opinion/DuRPMPSqaaqCDLoNMgRABL/The-class-divide-in-Indian-education-system.html>. Published January 23, 2018. Accessed August 25, 2019.
13. Mazumdar I. Approach Paper: Vulnerabilities of Women Homebased Workers. New Delhi, India: Centre for Women's Development Studies; 2005. https://www.academia.edu/1187411/Approach_paper_Vulnerabilities_of_women_home_based_workers. Accessed August 25, 2019.
14. Geetika, Singh T, Gupta A. Women working in informal sector in India: a saga of lopsided utilization of human capital. *International Proceedings of Economics Development and Research.* 2011;4:534-538. <http://www.ipedr.com/vol4/106-M00051.pdf>. Accessed August 25, 2019.
15. McKinsey Global Institute. The Power of Parity: How Advancing Women's Equality Can Add \$12 Trillion to Global Growth. https://www.mckinsey.com/~media/McKinsey/Featured%20Insights/Employment%20and%20Growth/How%20advancing%20womens%20equality%20can%20add%2012%20trillion%20to%20global%20growth/MGI%20Power%20of%20parity_Full%20report_September%202015.ashx. Published September 2015. Accessed August 25, 2019.
16. *The Economist*. Why India needs women to work. <https://www.economist.com/leaders/2018/07/05/why-india-needs-women-to-work>. July 5, 2018. Accessed January 24, 2020.
17. The World Bank. Rural Population: India. <https://data.worldbank.org/indicator/SP.RUR.TOTL?locations=IN>. Revised 2018. Accessed August 25, 2019.
18. The World Bank. Urban Population: India. <https://data.worldbank.org/indicator/SP.URB.TOTL?locations=IN>. Revised 2018. Accessed August 25, 2019.
19. Sivaramakrishnan KC, Singh BN. Paper on urbanisation. <http://planningcommission.nic.in/reports/sereport/ser/vision2025/urban.pdf>. Accessed October 4, 2019.
20. Agarwal S, Satyavada A, Kaushik S, Kumar R. Urbanization, urban poverty and health of the urban poor: status, challenges and the way forward. *Demogr India.* 2007;36(1):121-134. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3133050. Accessed October 4, 2019.

21. The World Bank. Population living in slums (% of urban population). <https://data.worldbank.org/indicator/EN.POP.SLUM.UR.ZS?locations=IN>. Accessed April 30, 2020.
22. Yach D, Mathews C, Buch E. Urbanisation and health: methodological difficulties in undertaking epidemiological research in developing countries. *Soc Sci Med*. 1990;31(4):507-514. <https://www.ncbi.nlm.nih.gov/pubmed/2218632>. Accessed October 5, 2019.
23. Chauhan RK, Mohanty SK, Subramanian SV, Parida JK, Padhi B. Regional estimates of poverty and inequality in India, 1993–2012. *Soc Indic Res*. 2016;127(3):1249-1296. <https://link.springer.com/article/10.1007%2Fs11205-015-1006-6>. Accessed August 25, 2019.
24. Institute for Health Metrics and Evaluation. India: How Much Is Spent on Health – Now, and in the Future – and From Which Sources? <http://www.healthdata.org/india>. Accessed August 26, 2019.
25. India State-Level Disease Burden Initiative Collaborators. Nations within a nation: variations in epidemiological transition across the states of India, 1990-2016 in the Global Burden of Disease Study. *Lancet*. 2017;390(10111):2437-2460. [https://www.thelancet.com/journals/lanct/article/PIIS0140-6736\(17\)32804-0/fulltext](https://www.thelancet.com/journals/lanct/article/PIIS0140-6736(17)32804-0/fulltext). Accessed October 15, 2019.
26. Behera P, Patro BK. Population based cancer registry of India – the challenges and opportunities. *Asian Pac J Cancer Prev*. 2018;19(10):2885-2889. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6291027/>. Accessed January 28, 2020.
27. India State-Level Disease Burden Initiative Cancer Collaborators. The burden of cancers and their variations across the states of India: the Global Burden of Disease Study 1990–2016. *Lancet Oncol*. 2018;19(10):1289-1306. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6167407/pdf/main.pdf>. Accessed October 15, 2019.
28. World Health Organization. Noncommunicable Diseases (NCD) Country Profiles, 2018: India. https://www.who.int/nmh/countries/2018/ind_en.pdf?ua=1. Accessed August 26, 2019.
29. Bentall WC. Cancer in Travancore: a resume of 1,700 cases. *Ind Med Gaz*. 1908;43(12):452-458. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2437651/pdf/brmedj07986-0012.pdf>. Accessed October 15, 2019.
30. John RM, Rout SK, Kumar BR, Arora M. *Economic Burden of Tobacco Related Diseases in India*. New Delhi, India: Ministry of Health and Family Welfare, Government of India; 2014. <https://mohfw.gov.in/sites/default/files/Report%20on%20Economic%20Burden%20of%20Tobacco%20Related%20Diseases%20in%20India.pdf>. Accessed October 15, 2019.
31. Fullman N, Fortunati R. Progress and Prospects: Health-Related Sustainable Development Goals. Institute for Health Metrics and Evaluation website. <http://www.healthdata.org/acting-data/progress-and-prospects-health-related-sustainable-development-goals>. Published September 12, 2017. Accessed August 26, 2019.
32. World Health Organization. 2018 Health SDG Profile: India. http://www.searo.who.int/entity/health_situation_trends/cp_ind.pdf. Updated July 2018. Accessed August 26, 2019.
33. World Health Organization. Global Tuberculosis Report 2017. Annex 2: Country Profiles for 30 High TB Burden Countries. https://www.who.int/tb/publications/global_report/gtbr2017_annex2.pdf?ua=1. Accessed August 26, 2019.
34. Tata Institute of Social Sciences, Mumbai and Ministry of Health and Family Welfare, Government of India. *Global Adult Tobacco Survey GATS 2 India 2016-2017 Report*. http://download.tiss.edu/Global_Adult_Tobacco_Survey2_India_2016-17_June2018.pdf. Published June 2018. Accessed August 26, 2019.
35. World Health Organization. Global Tuberculosis Report 2018. https://www.who.int/tb/publications/global_report/en/. Accessed October 15, 2019.
36. India State-Level Disease Burden Initiative Air Pollution Collaborators. The impact of air pollution on deaths, disease burden, and life expectancy across the states of India: the Global Burden of Disease Study 2017. *Lancet Planet Health*. 2019;3(1):e26-e39. [https://www.thelancet.com/pdfs/journals/lanplh/PIIS2542-5196\(18\)30261-4.pdf](https://www.thelancet.com/pdfs/journals/lanplh/PIIS2542-5196(18)30261-4.pdf). Accessed August 26, 2019.
37. World Health Organization. Factsheet 2018 India. https://apps.who.int/iris/bitstream/handle/10665/272672/wntd_2018_india_fs.pdf?sequence=1&isAllowed=y. Accessed August 27, 2019.
38. World Health Organization. Tobacco. <https://www.who.int/news-room/fact-sheets/detail/tobacco>. Published July 26, 2019. Accessed August 27, 2019.

39. Institute for Health Metrics and Evaluation database. 2017 Global Burden of Disease Study data resources. <http://ghdx.healthdata.org>. Accessed August 27, 2019.
40. The NCD Alliance: Putting Non-Communicable Diseases on the Global Agenda. https://ncdalliance.org/sites/default/files/rfiles/NCDa_Tobacco_and_Health.pdf. Accessed August 26, 2019.
41. World Health Organization. Tuberculosis & Tobacco. https://www.who.int/tobacco/publications/health_effects/factsheet_tub_tob.pdf. Published November 2009. Accessed August 27, 2019.
42. Gupta PC, Asma S. *Bidi Smoking and Public Health*. New Delhi, India: Ministry of Health and Family Welfare, Government of India; 2008. https://www.who.int/tobacco/publications/prod_regulation/bidi_smoking_public_health.pdf. Published March 2008. Accessed October 17, 2019.
43. Duong M, Rangarajan S, Zhang X, et al. Effects of bidi smoking on all-cause mortality and cardiorespiratory outcomes in men from south Asia: an observational community-based substudy of the Prospective Urban Rural Epidemiology Study (PURE). *Lancet Glob Health*. 2017;5(2):e168-e176. <https://www.thelancet.com/action/showPdf?pii=S2214-109X%2817%2930004-9>. Accessed October 17, 2019.
44. Ray CS, Gupta PC. Bidis and smokeless tobacco. *Curr Sci*. 2009;96(10):1324-1334. https://pdfs.semanticscholar.org/373d/27935d4d86b4c360247ce6c8427e184d4f65.pdf?_ga=2.81990486.1955535996.1569437604-1314808023.1569437604. Accessed October 17, 2019.
45. Chinchole VS, Swamy RS, SinhaDeoraj, Shah HR, KamathRavindra M. Comparison of patterns and perception of tobacco use in psychotic and non-psychotic mentally ill patients. *IOSR J Dent Med Sci*. 2016;15(12):58-63. http://www.iosrjournals.org/iosr-jdms/papers/Vol15-Issue%2012/Version-10/I_15120105863.pdf. Accessed August 27, 2019.
46. Kulkarni N. Women and tobacco – an overview. *Curr Trends Biomed Eng Biosci*. 2017;2(5):555599. <https://juniperpublishers.com/ctbeb/CTBEB.MS.ID.555599.php>. Accessed August 27, 2019.
47. Siddiqi K, Shah S, Abbas SM, et al. Global burden of disease due to smokeless tobacco consumption in adults: analysis of data from 113 countries. *BMC Med*. 2015;13:194. <https://bmcmecine.biomedcentral.com/track/pdf/10.1186/s12916-015-0424-2>. Accessed October 16, 2019.
48. Yadav A, Ling P, Glantz S. Smokeless tobacco industry's brand stretching in India. *Tob Control*. Published Online January 9, 2020. doi: 10.1136/tobaccocontrol-2019-055382. <https://tobaccocontrol.bmj.com/content/tobaccocontrol/early/2020/01/08/tobaccocontrol-2019-055382.full.pdf?ijkey=updGzXHAY9sMcUO&keytype=ref>. Accessed March 11, 2020.
49. Gupta R, Gupta N, Khedar RS. Smokeless tobacco and cardiovascular disease in low and middle income countries. *Indian Heart J*. 2013;65(4):369-377. <https://www.sciencedirect.com/science/article/pii/S0019483213001855>. Accessed October 31, 2019.
50. Gupta PC, Arora M, Sinha D, Asma S, Parascondola M, eds. *Smokeless Tobacco and Public Health in India: Executive Summary*. New Delhi, India: Ministry of Health and Family Welfare, Government of India; 2016. http://www.searo.who.int/india/tobacco/smokeless_tobacco_and_public_health_in_india.pdf?ua=1. Accessed October 16, 2019.
51. Gupta PC, Subramoney S. Smokeless tobacco use, birth weight, and gestational age: population based, prospective cohort study of 1217 women in Mumbai, India. *BMJ*. 2004;328(7455):1538. Epub 2004 Jun 15. <https://www.bmj.com/content/328/7455/1538>. Accessed October 16, 2019.
52. Pankaj C. Areca nut or betel nut control is mandatory if India wants to reduce the burden of cancer especially cancer of the oral cavity. *Int J Head Neck Surg*. 2010;1(1):17-20. <https://pdfs.semanticscholar.org/c4e5/8375811cb7e0762a3bf83b786f5f27fb709b.pdf>. Accessed October 16, 2019.
53. Fisher MT, Tan-Torres SM, Gaworski CL, Black RA, Sarkar MA. Smokeless tobacco mortality risks: an analysis of two contemporary nationally representative longitudinal mortality studies. *Harm Reduct J*. 2019;16(1):27. <https://harmreductionjournal.biomedcentral.com/track/pdf/10.1186/s12954-019-0294-6>. Accessed August 27, 2019.
54. Public Health Law Center, Tobacco Control Legal Consortium. Risks of Betel Quid & Tobacco Use. <https://www.publichealthlawcenter.org/sites/default/files/resources/Health-Risks-Betel-Quid-and-Tobacco-2017.pdf>. Published July 2017. Accessed August 27, 2019.

55. Sankhla B, Kachhwaha K, Hussain SY, Saxena S, Sireesha SK, Bhargava A. Genotoxic and carcinogenic effect of *gutkha*: a fast-growing smokeless tobacco. *Addict Health*. 2018;10(1):52-63. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6312563/>. Accessed August 27, 2019.
56. Niaz K, Maqbool F, Khan F, Bahadar H, Ismail Hassan F, Abdollahi M. Smokeless tobacco (*paan* and *gutkha*) consumption, prevalence, and contribution to oral cancer. *Epidemiol Health*. 2017;39:e2017009. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5543298/>. Accessed August 27, 2019.
57. Asthana S, Labani S, Kailash U, Sinha DN, Mehrotra R. Association of smokeless tobacco use and oral cancer: a systematic global review and meta-analysis. *Nicotine Tob Res*. 2019;21(9):1162-1171. <https://academic.oup.com/ntr/article/21/9/1162/4998035>. Accessed October 16, 2019.
58. Gupta S, Gupta R, Sinha DN, Mehrotra R. Relationship between type of smokeless tobacco & risk of cancer: a systematic review. *Indian J Med Res*. 2018;148(1):56-76. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6172923/>. Accessed October 16, 2019.
59. FDA grants first-ever modified risk orders to eight smokeless tobacco products [press release]. Silver Spring, MD: US Food and Drug Administration; October 22, 2019. <https://www.fda.gov/news-events/press-announcements/fda-grants-first-ever-modified-risk-orders-eight-smokeless-tobacco-products>. Accessed March 11, 2020.
60. Gupta PC, Ray CS, Papke RL, et al. Perspectives on areca nut with some global implications: symposium report. *Transl Res Oral Oncol*. 2018;3:1-8. <https://journals.sagepub.com/doi/pdf/10.1177/2057178X18814068>. Accessed October 16, 2019.
61. Arecanut and Human Health. Kasaragod, Kerala, India: ICAR-Central Plantation Crops Research Institute. https://anantkumarhegde.com/site/assets/pdfs/Health-Benefits-of-arecanut_full.pdf. Accessed October 17, 2019.
62. Reddy KS, Gupta PC, eds. *Report on Tobacco Control in India*. https://www.who.int/fctc/reporting/Annex6_Report_on_Tobacco_Control_in_India_2004.pdf. Published 2004. Accessed August 27, 2019.
63. Nilai N. A review of Indian healthcare sector. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2952286. Published April 13, 2017. Accessed August 26, 2019.
64. Worldometers. India Population 2019. <https://www.worldometers.info/world-population/india-population/>. Accessed September 11, 2019.
65. World Health Organization. India tries to break cycle of health-care debt. Bulletin of the World Health Organization. <https://www.who.int/bulletin/volumes/88/7/10-020710/en/>. Accessed April 28, 2020.
66. Central Bureau of Health Intelligence, Directorate General of Health Services, Ministry of Health and Family Welfare, Government of India, WHO Collaborating Centre on Family of International Classifications (ICD-10, ICF & ICHI). *National Health Profile 2018*. 13th issue. <https://cdn.downtoearth.org/in/pdf/NHP-2018.pdf>. Accessed August 26, 2019.
67. The World Bank. Current health expenditure (% of GDP). <https://data.worldbank.org/indicator/SH.XPD.CHEX.GD.ZS>. Accessed April 28, 2020.
68. Kalra A. India Plans to Raise Health Spending by 11 Percent in Budget; Less Than Requested. Reuters website. <https://www.reuters.com/article/us-india-budget-health-exclusive/india-plans-to-raise-health-spending-by-11-percent-in-budget-less-than-requested-idUSKBN1F711N>. Published January 18, 2018. Accessed August 26, 2019.
69. Xu K, Soucat A, Kutzin J, et al. *Public Spending on Health: A Closer Look at Global Trends*. Geneva, Switzerland: World Health Organization; 2018. WHO/HIS/HGF/HFWorkingPaper/18.3. <https://apps.who.int/iris/bitstream/handle/10665/276728/WHO-HIS-HGF-HF-WorkingPaper-18.3-eng.pdf>. Accessed August 26, 2019.
70. Widely Disparate Spending on Health Forecast Through 2040 [press release]. Seattle, WA: Institute for Health Metrics and Evaluation; April 19, 2017. <http://www.healthdata.org/news-release/widely-disparate-spending-health-forecast-through-2040>. Accessed August 26, 2019.
71. Rodwin VG, Fabre G, Ayoub RF. BRIC health systems and big pharma: a challenge for health policy and management. *Int J Health Policy Manag*. 2018;7(3):201-206. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5890064/pdf/ijhpm-7-201.pdf>. Accessed August 26, 2019.
72. India Brand Equity Foundation. *India Now, Business and Economy. Towards a Healthier India – Focus on Accessibility, Affordability, and Quality*. 2018;5(1):1-30. <https://www.ibef.org/Fbook/India-Now-Business-and-Economy-July-August-2018.pdf>. Published August 20, 2018. Accessed August 26, 2019.

73. National Sample Survey Office. *Key Indicators of Social Consumption in India: Health*. NSS 71st Round, January-June 2014. New Delhi, India: Ministry of Statistics and Programme Implementation, Government of India; 2015. http://www.thehinducentre.com/multimedia/archive/02460/nss_71st_ki_health_2460766a.pdf. Published June 2015. Accessed October 17, 2019.
74. Rao KR, Panchamukhi PR. Health and the Indian Constitution. CMDR Monograph Series No. 7. Karnataka, India: Centre for Multi-Disciplinary Development Research. http://cmdr.ac.in/editor_v51/assets/Mono-7.pdf. Accessed January 28, 2020.
75. Ranjan A. India's Great Healthcare Challenge, Also an Opportunity: Health Insurance in Indian Market. <https://thriveglobal.com/stories/india-s-great-healthcare-challenge-also-an-opportunity/>. Published October 22, 2018. Accessed August 26, 2019.
76. EY. Global Analysis of Health Insurance in India. [https://www.ey.com/Publication/vwLUAssets/FY-global-analysis-of-health-insurance-in-india/\\$File/ey-global-analysis-of-health-insurance-in-india.pdf](https://www.ey.com/Publication/vwLUAssets/FY-global-analysis-of-health-insurance-in-india/$File/ey-global-analysis-of-health-insurance-in-india.pdf). Published 2018. Accessed August 26, 2019.
77. Kapoor M, Agrawal D, Ravi S, Roy A, Subramanian SV, Guleria R. Missing female patients: an observational analysis of sex ratio among outpatients in a referral tertiary care public hospital in India. *BMJ Open*. 2019;9(8):e026850. <https://bmjopen.bmj.com/content/9/8/e026850.full>. Accessed August 26, 2019.
78. Saikia N, Moradhvaj, Bora JK. Gender difference in health-care expenditure: evidence from India Human Development Survey. *PLoS One*. 2016;11(7):e0158332. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4938214/>. Accessed August 26, 2019.
79. Roy K, Chaudhuri A. Influence of socioeconomic status, wealth and financial empowerment on gender differences in health and healthcare utilization in later life: evidence from India. *Soc Sci Med*. 2008;66(9):1951-1962. <https://www.ncbi.nlm.nih.gov/pubmed/18313185/>. Accessed October 17, 2019.
80. Bora JK, Saikia N. Gender differentials in self-rated health and self-reported disability among adults in India. *PLoS One*. 2015;10(11):e0141953. <https://www.ncbi.nlm.nih.gov/pubmed/26536133/>. Accessed October 17, 2019.
81. National Portal of India. Ayushman Bharat – National Health Protection Mission. <https://www.india.gov.in/spotlight/ayushman-bharat-national-health-protection-mission>. Accessed October 17, 2019.
82. Government of Tamil Nadu. *Pharmaceuticals and Biotechnology Sector Profile*. <https://www.tngim.com/wp-content/uploads/2018/12/Pharmaceuticals-Biotechnology.pdf>. Published 2018. Accessed October 17, 2019.
83. Government of India, Ministry of Health and Family Welfare. *National Health Policy 2017*. https://www.nhp.gov.in/nhpfiles/national_health_policy_2017.pdf. Accessed October 17, 2019.
84. Anand S, Fan V. *The Health Workforce in India*. Human Resources for Health Observer Series No. 16. Geneva, Switzerland: World Health Organization; 2016. https://www.who.int/hrh/resources/16058health_workforce_india.pdf. Accessed October 17, 2019.
85. Kumar R, Pal R. India achieves WHO recommended doctor population ratio: a call for paradigm shift in public health discourse! *J Family Med Prim Care*. 2018;7(5):841-844. Accessed October 17, 2019.
86. Nilan K, McKeever TM, McNeill A, Raw M, Murray RL. Prevalence of tobacco use in healthcare workers: a systematic review and metaanalysis. *PLoS One*. 2019;14(7):e0220168. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6657871/pdf/pone.0220168.pdf>. Accessed October 17, 2019.
87. Cattaruzza MS, West R. Why do doctors and medical students smoke when they must know how harmful it is? *Eur J Public Health*. 2013;23(2):188-189. <https://academic.oup.com/eurpub/article/23/2/188/683606>. Accessed September 19, 2019.
88. Smith DR, Leggat PA. An international review of tobacco smoking in the medical profession: 1974–2004. *BMC Public Health*. 2007;7:115. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1906758/>. Accessed January 28, 2020.
89. Sreeramareddy CT, Suri S, Menezes RG, et al. Self-reported tobacco smoking practices among medical students and their perceptions towards training about tobacco smoking in medical curricula: a cross-sectional, questionnaire survey in Malaysia, India, Pakistan, Nepal, and Bangladesh. *Subst Abuse Treat Prev Policy*. 2010;5:29. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2994841/pdf/1747-597X-5-29.pdf>. Accessed October 17, 2019.
90. Thungappa S, Rajappa R, Rao R, Saleel M. Health professional's perception towards smoking: a cross-sectional study from Bangalore, India. Abstract P2.10-07. *J Thorac Oncol*. 2018;13(10 suppl):S775-S776. [https://www.jto.org/article/S1556-0864\(18\)32294-9/pdf](https://www.jto.org/article/S1556-0864(18)32294-9/pdf). Accessed October 17, 2019.

91. Panda R, Jena PK. Examining physicians' preparedness for tobacco cessation services in India: findings from primary care public health facilities in two Indian states. *Australas Med J*. 2013;6(3):115-121. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3626027/pdf/AMJ-06-115.pdf>. Assessed January 28, 2020.
92. Mony PK, Vishwanath NS, Krishnan S. Tobacco use, attitudes and cessation practices among healthcare workers of a city health department in Southern India. *J Family Med Prim Care*. 2015;4(2):261-264. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4408712/>. Assessed January 28, 2020.
93. Murthy P, Saddichha S. Tobacco cessation services in India: recent developments and the need for expansion. *Indian J Cancer*. 2010;47(suppl 1):69-74. <http://www.indianjancer.com/article.asp?issn=0019-509X;year=2010;volume=47;issue=5;spage=69;epage=74;aualast=Murthy>. Assessed January 28, 2020.
94. Oberoi SS, Sharma G, Nagpal A, Oberoi A. Tobacco cessation in India: how can oral health professionals contribute? *Asian Pac J Cancer Prev*. 2014;15(5):2383-2391. <http://journal.waocp.org/?sid=Entrez:PubMed&id=pmid:24716989&key=2014.15.5.2383>. Assessed January 28, 2020.
95. Shah Ra, Shah Ru, Bhojani U, Shah S. Dentists and tobacco cessation: moving beyond the willingness [letter]. *J Indian Assoc Public Health Dent*. 2017;15(3):263-264. <http://www.jiaphd.org/downloadpdf.asp?issn=2319-5932;year=2017;volume=15;issue=3;spage=263;epage=264;aualast=Shah;type=2>. Assessed January 30, 2020.
96. Mitra DK, Pawar SD, Mandal A, et al. Attitudes of dental professionals toward tobacco use. *J Indian Soc Periodontol*. 2015;19(3):317-321. <http://www.jisponline.com/article.asp?issn=0972-124X;year=2015;volume=19;issue=3;spage=317;epage=321;aualast=Mitra>. Assessed January 30, 2020.
97. Sinha DN, Singh G, Gupta PC, et al. Linking India global health professions student survey data to the world health organization framework convention on tobacco control. *Indian J Cancer*. 2010;47(suppl 1):30-34. <http://www.indianjancer.com/text.asp?2010/47/5/30/65177>. Assessed March 13, 2020.
98. The World Bank. Population, total. <https://data.worldbank.org/indicator/SP.POP.TOTI?locations=IN-1W>. Accessed October 18, 2019.
99. Foundation for a Smoke-Free World. Global Trends in Nicotine. <https://www.smokefreeworld.org/sites/default/files/fsfw-report-trends-in-nicotine-1005201811.pdf>. Published 2018. Accessed August 27, 2019.
100. Mohan P, Lando HA, Panneer S. Assessment of tobacco consumption and control in India. *Indian J Clin Med*. 2018;9:1-8. https://journals.sagepub.com/doi/full/10.1177/1179916118759289#_i6. Accessed August 27, 2019.
101. The Tendu Leaf Makes/Breaks Governments. DownToEarth website. <https://www.downtoearth.org.in/coverage/the-tendu-leaf-12528>. Published June 28, 2015. Accessed October 18, 2019.
102. Malson JL, Sims K, Murty R, Pickworth WB. Comparison of the nicotine content of tobacco used in *bidis* and conventional cigarettes. *Tob Control*. 2001;10(2):181-183. <https://tobaccocontrol.bmj.com/content/10/2/181>. Accessed August 27, 2019.
103. Jandoo T, Mehrotra R. Tobacco control in India: present scenario and challenges ahead. *Asian Pac J Cancer Prev*. 2008;9(4):805-810. <http://journal.waocp.org/?sid=Entrez:PubMed&id=pmid:19256780&key=2008.9.4.805>. Accessed October 18, 2019.
104. Mishra S, Joseph RA, Gupta PC, et al. Trends in *bidi* and cigarette smoking in India from 1998 to 2015, by age, gender and education. *BMJ Glob Health*. 2016;1(1):e000005. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5321300/>. Accessed August 27, 2019.
105. Palipudi KM, Asma S, Gupta P. Global prevalence of smokeless tobacco use among youth and adults. In: Hatsukami DK, Zeller M, Gupta P, Parascandola M, Asma S, eds. *Smokeless Tobacco and Public Health: A Global Perspective*. Bethesda, MD: US Department of Health and Human Services, Centers for Disease Control and Prevention and National Institutes of Health, National Cancer Institute; 2014:27-74. NIH publication 14-7983. https://cancercontrol.cancer.gov/brp/tcrb/global-perspective/Chapter_2_SmokelessTobaccoAndPublicHealth.pdf. Accessed August 27, 2019.
106. World Health Organization South-East Asia. Report on Oral Tobacco Use and Its Implications in South-East Asia. http://www.searo.who.int/tobacco/topics/oral_tobacco_use.pdf. Published 2004. Accessed August 26, 2019.
107. Mini GK, Thankappan KR. Switching to smokeless tobacco, the most common smoking cessation method: results from the Global Adult Tobacco Survey, India. *Public Health*. 2016;136:172-174. <https://www.sciencedirect.com/science/article/pii/S0033350616300221>. Accessed August 27, 2019.

108. India's most populous state bans deadly *gutka* chewing tobacco. Campaign for Tobacco-Free Kids website. https://www.tobaccofreekids.org/blog/2013_04_05_gutka. Published April 5, 2013. Accessed August 27, 2019.
109. World Health Organization. Global Adult Tobacco Survey (GATS) Fact Sheet, India: 2009-2010. https://www.who.int/tobacco/surveillance/en_tfi_india_gats_fact_sheet.pdf. Accessed January 30, 2020.
110. Greaves L, Jategaonkar N, Sanchez S, eds. Turning a New Leaf: Women, Tobacco, and the Future. British Columbia Centre of Excellence for Women's Health (BCCEWH) and International Network of Women Against Tobacco (INWAT). Vancouver: British Columbia Centre of Excellence for Women's Health; July 2006. http://bcccewh.bc.ca/wp-content/uploads/2012/05/2006_Turning-New-Leaf.pdf. Accessed August 26, 2019.
111. Salvi D, Nagarkar A. A qualitative study exploring women's journeys to becoming smokers in the social context of urban India. *Women Health*. 2018;58(4):466-482. <https://www.ncbi.nlm.nih.gov/pubmed/28328385>. Accessed August 26, 2019.
112. Gajalakshmi V, Kanimozhi CV. A survey of 24,000 students aged 13–15 years in India: Global Youth Tobacco Survey 2006 and 2009. *Tob Use Insights*. 2010;3:23-31. <https://journals.sagepub.com/doi/full/10.1177/1179173X1000300001>. Accessed January 30, 2020.
113. Saikia N, Debbarma B. The socioeconomic correlates of substance use among male adults in Northeast India. *Clin Epidemiol Glob Health*. <https://www.sciencedirect.com/science/article/pii/S2213398418303403?via%3Dihub> Published June 10, 2019. Accessed October 18, 2019.
114. Sinha DN, Gupta PC, P G. Tobacco use among students and school personnel in India. *Asian Pac J Cancer Prev*. 2007;8(3):417-421. http://journal.waocp.org/article_24628_dfb6c959b15cf60353c2dc0b7d5dfd37.pdf. Accessed October 18, 2019.
115. Singh KJ, Singh N. Geographical variation on smokeless tobacco consumption among male and female in northeast states, India. *Int J Humanit Soc Sci Invent*. 2016;5(7):36-42. <https://pdfs.semanticscholar.org/b887/9651ef408af6d4bbda933d6aa934098c7b6d.pdf>. Accessed January 30, 2020.
116. Fu SH, Jha P, Gupta PC, Kumar R, Dikshit R, Sinha D. Geospatial analysis on the distributions of tobacco smoking and alcohol drinking in India. *Plos One*. 2014;9(7):e102416. <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0102416>. Accessed October 18, 2019.
117. Rani M, Bonu S, Jha P, Nguyen SN, Jamjoum L. Tobacco use in India: prevalence and predictors of smoking and chewing in a national cross sectional household survey. *Tob Control*. 2003;12(4):e4. <https://tobaccocontrol.bmj.com/content/tobaccocontrol/12/4/e4.full.pdf>. Accessed October 15, 2019.
118. World Health Organization. Tobacco use and its impact on health. Prevalence of tobacco use and factors influencing initiation and maintenance among women. In: *Gender, Women, and the Tobacco Epidemic*. Geneva, Switzerland: WHO; 2010:29-50. https://www.who.int/tobacco/publications/gender/en_tfi_gender_women_prevalence_tobacco_use.pdf. Accessed August 27, 2019.
119. Bhan N, Karan A, Srivastava S, Selvaraj S, Subramanian SV, Millett C. Have socioeconomic inequalities in tobacco use in India increased over time? Trends from the National Sample Surveys (2000-2012). *Nicotine Tob Res*. 2016;18(8):1711-1718. <https://academic.oup.com/ntr/article/18/8/1711/2492934>. Accessed August 27, 2019.
120. Chowdhery S. Why India Is Tobacco Harm Reduction's Most Important Frontier. <https://filtermag.org/why-india-is-tobacco-harm-reductions-most-important-frontier/>. Published September 25, 2018. Accessed October 18, 2019.
121. Ghasura SA, Patel M. How effective are 5A's of counseling as a means of curbing tobacco addiction in the attendees of TCC (Tobacco Cessation Centre), Ahmedabad: a descriptive follow-up study. *Int J Multidiscip Res Dev*. 2016;3(2):76-79. <http://www.allsubjectjournal.com/archives/2016/vol3/issue2>. Accessed October 18, 2019.
122. Sharma NC. Nicotine replacement therapy is the new hope for smokers. *India Today*. July 17, 2015. <https://www.indiatoday.in/mail-today/story/nicotine-replacement-therapy-dhhs-nitrd-smokeless-tobacco-282905-2015-07-17>. Accessed October 18, 2019.
123. India's First Nicotine Patch, 2baconil™ Launched by Rusan Healthcare [press release]. Mumbai, Maharashtra, India: Business Wire India; May 11, 2015. <https://www.businesswireindia.com/indias-first-nicotine-patch-2baconil-launched-by-rusan-healthcare-43696.html>. Accessed October 18, 2019.

124. Sarma S, Hari Krishnan S, Baldrige AS, et al. Availability, sales, and affordability of tobacco cessation medicines in Kerala, India. *Circ Cardiovasc Qual Outcomes*. 2017;10(11):e004108. <https://www.ahajournals.org/doi/pdf/10.1161/CIRCOUTCOMES.117.004108>. Accessed October 18, 2019.
125. Food and Agriculture Organization (FAO) of the United Nations. FAOSTAT. <http://www.fao.org/faostat/en/#home>. Accessed August 15, 2019.
126. Government of India, Ministry of Agriculture and Farmers Welfare. Lok Sabha: Unstarred Question No. 3433. Production of Tobacco. <http://164.100.24.220/loksabhaquestions/annex/15/AU3433.pdf>. Published 2018. Accessed May 1, 2020.
127. The Tobacco Institute of India. Tobacco Production. <https://www.tiionline.org/facts-sheets/tobacco-production/>. Accessed October 20, 2019.
128. Sarala K, Murthy TGK, Prabhakara Rao K, Ravisankar H. Tobacco research in India: trends and developments. *Agrotechnology*. 2013;2(3). <https://www.longdom.org/open-access/Tobacco-Research-in-India-Trends-and-Developments-2168-9881.1000113.pdf>. Accessed October 20, 2019.
129. India's first cooperative for nicotine industry & tobacco farmers formed in Gujarat. Indus Dictum website. <https://indusdictum.com/2019/11/06/indias-first-cooperative-for-nicotine-industry-tobacco-farmers-formed-gujarat/>. Published November 6, 2019. Accessed January 31, 2020.
130. Saxena M, Yadav SJ, Ojha SAK, et al. *All India Report on Agriculture Census 2010-11*. New Delhi, India: Agriculture Census Division, Department of Agriculture, Cooperation & Farmers Welfare, Ministry of Agriculture & Farmers Welfare, Government of India; 2015. <http://agcensus.nic.in/document/ac1011/reports/air2010-11complete.pdf>. Published December 8, 2015. Accessed October 20, 2019.
131. Press Information Bureau, Government of India, Ministry of Finance. Contribution of Various Sectors to GDP. <http://pib.gov.in/newsite/PrintRelease.aspx?relid=186413>. Published December 14, 2018. Accessed August 28, 2019.
132. Department of Agriculture, Cooperation & Farmers Welfare, Ministry of Agriculture & Farmers Welfare, Government of India. *Pocket Book of Agricultural Statistics 2017*. New Delhi, India: Government of India; 2017. http://agricoop.nic.in/sites/default/files/pocketbook_0.pdf. Accessed August 28, 2019.
133. Centre D'Études Prospectives et D'Informations Internationales (CEPII). BACI World Trade Database. http://www.cepii.fr/CEPII/en/bdd_modele/presentation.asp?id=37. Published 2016. Accessed August 16, 2019.
134. Shah R, Bartone D, Ferguson R. *Global Trends in Tobacco Production and Trade*. New York, NY: Foundation for a Smoke Free World; 2019. https://www.smokefreeworld.org/sites/default/files/uploads/fsfw_report_9.9.191.pdf. Published September 9, 2019. Accessed October 20, 2019.
135. Mehrotra R, Yadav A. A tough nut to crack. *The Hindu*. March 10, 2018. <https://www.thehindu.com/sci-tech/health/a-tough-nut-to-crack/article23036520.ece>. Updated March 11, 2018. Accessed October 20, 2019.
136. Tigari H, Rajamma S. Forming system and income security: a case of areca nut farmers. *Int J Commer*. 2019;7(2). http://shanlaxpublications.com/wp-content/uploads/COM_V7_N2_001.pdf. Accessed October 20, 2019.
137. National Horticulture Board. Indian Production of ARECANUT (HSCODE-1092), 2011-2016. APEDA Agri Exchange website. http://apeda.in/agriexchange/India%20Production/India_Productions.aspx?hscod=1092. Accessed February 3, 2020.
138. Horticultural Statistics Division, Department of Agriculture, Cooperation & Farmers Welfare, Ministry of Agriculture & Farmers Welfare. *Horticultural Statistics at a Glance 2017*. New Delhi, India: Government of India; 2017. [http://nhb.gov.in/statistics/Publication/Horticulture%20at%20a%20Glance%202017%20for%20net%20uplod%20\(2\).pdf](http://nhb.gov.in/statistics/Publication/Horticulture%20at%20a%20Glance%202017%20for%20net%20uplod%20(2).pdf). Accessed October 31, 2019.
139. Aditya KS, Praveen KV, Kammardi TNP. Integrated farming systems and income security: the case of arecanut farmers in Karnataka, India. *Econ Aff*. 2017;62(2):243-251. <https://ndpublisher.in/admin/issues/FAv62no2f.pdf>. Accessed October 20, 2019.

140. Naagarajan R, Meenakshi R. Analysis of areca nut production and export in India. *Int J Appl Soc Sci*. 2016;3(3&4):67-81. <https://scientificresearchjournal.com/journal/applied-social-science/international-journal-of-applied-social-science-volume-34-march-april-2016/>. Accessed October 31, 2019.
141. Sahu LK, Ayuband MA, Netam OK. Trends in growth of collection and sales of 'tendu leaves' in Chhattisgarh state, India. *Plant Arch*. 2017;17(1):132-134. [http://plantarchives.org/PDF%2017-1/132-134%20\(3532\).pdf](http://plantarchives.org/PDF%2017-1/132-134%20(3532).pdf). Accessed October 20, 2019.
142. Government of India, Ministry of Environment, Forests and Climate Change. Lok Sabha: Unstarred Question No. 4086. <http://164.100.47.194/Loksabha/Questions/QResult15.aspx?qref=73092&lsno=16>. Published 2018. Accessed October 20, 2019.
143. Nayak NS. Estimates of tobacco-dependent employment in India. *Economic & Political Weekly*. October 6, 2018. <https://www.epw.in/journal/2018/40/notes/estimates-tobacco-dependent-employment.html>. Accessed August 28, 2019.
144. Government of India, Ministry of Agriculture and Farmers' Welfare. Lok Sabha: Starred Question No. 486. <https://loksabha.nic.in/Members/QResult16.aspx?qref=67486>. Published 2018. Accessed August 28, 2019.
145. The Tobacco Institute of India. Livelihood. <https://www.tionline.org/facts-sheets/livelihood/>. Accessed August 28, 2019.
146. The Tobacco Institute of India. About the Tobacco Institute of India. <https://www.tionline.org/about-us/introduction/>. Accessed August 28, 2019.
147. The World Bank. Labor Force, Total, India. <https://data.worldbank.org/indicator/SL.TLF.TOTL.IN?locations=IN>. Accessed February 3, 2020.
148. Government of India, Ministry of Agriculture and Farmers' Welfare. Annexure I to Lok Sabha: Starred Question No. 475. http://164.100.47.193/Annexure_New/lsq16/2/as475.htm. Published August 11, 2014. Accessed February 3, 2020.
149. Joshi KP, Robins JM, Parashramlu, Venu, Mallikarjunaih KM. An epidemiological study of occupational health hazards among *bidi* workers of Amarchinta, Andhra Pradesh. *J Acad Indus Res*. 2013;1(9):561-564. <https://pdfs.semanticscholar.org/8dcf/18b44854f0455d3cc4d6731274e4424d1d87.pdf>. Accessed August 28, 2019.
150. Sabale RV, Kowli SS, Chowdhary PH. Working condition and health hazards in beedi rollers residing in the urban slums of Mumbai. *Indian J Occup Environ Med*. 2012;16(2):72-74. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3617511/>. Accessed August 28, 2019.
151. Hu T. Tobacco farming, tobacco taxation, and alternative crops: China, Tanzania, and Kenya. Presentation to the World Bank Group, Global Tobacco Taxation Conference; April 18-19, 2018; Washington, DC.
152. Shukla P, Khanna A, Jain SK. Working condition: a key factor in increasing occupational hazard among *bidi* rollers: a population health research with respect to DNA damage. *Indian J Occup Environ Med*. 2011;15(3):139-141. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3299100/>. Accessed August 28, 2019.
153. Khanna A, Gautam DS, Gokhale M, Jain SK. Tobacco dust induced genotoxicity as an occupational hazard in workers of *bidi* making cottage industry of central India. *Toxicol Int*. 2014;21(1):18-23. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3989910/>. Accessed August 28, 2019.
154. Govekar RB, Bhisey RA. Elevated urinary thioether excretion among *bidi* rollers exposed occupationally to processed tobacco. *Int Arch Occup Environ Health*. 1992;64(2):101-104. <https://link.springer.com/article/10.1007/BF00381476>. Accessed August 28, 2019.
155. Bagwe AN, Bhisey RA. Occupational exposure to tobacco and resultant genotoxicity in *bidi* industry workers. *Mutat Res*. 1993;299(2):103-109. <https://www.sciencedirect.com/science/article/abs/pii/016512189390087T>. Accessed August 28, 2019.

156. Standing Committee on Labour & Welfare (1994-95). Seventh Report on Ministry of Labour—Welfare of Beedi Workers. https://eparlib.nic.in/bitstream/123456789/57609/1/labour_10_07_1994.pdf. Published November 1994. Accessed August 28, 2019.
157. John P. *Beedi Industry and Welfare of Workers in India: Review of Policies and Literature*. New Delhi, India: Center for Health & Social Justice. http://www.chsj.org/uploads/1/0/2/1/10215849/policy_review.pdf. Accessed August 28, 2019.
158. Committee on the Welfare of Scheduled Castes and Scheduled Tribes (2018-2019). *Twenty-Eighth Report on Ministry of Labour & Employment*. https://eparlib.nic.in/bitstream/123456789/783956/1/16_Welfare_of_Scheduled_Castes_and_Scheduled_Tribes_28.pdf. Published January 2019. Accessed August 28, 2019.
159. Nandi A, Ashok A, Guindon GE, Chaloupka FJ, Jha P. Estimates of the economic contributions of the *bidi* manufacturing industry in India. *Tob Control*. 2015;24(4):369-375. <https://pdfs.semanticscholar.org/c319/958c915692296d0468eaa301a73c9ba8e385.pdf>. Accessed August 28, 2019.
160. Mazumdar I. Homebased Work in 21st Century India. Occasional Paper No. 64. New Delhi, India: Centre for Women's Development Studies; 2018. <https://www.cwds.ac.in/wp-content/uploads/2018/05/OccasionalPaper64IM.pdf>. Published May 2018. Accessed August 28, 2019.
161. Council on Foreign Relations. India Introduces Economic Reforms to Improve Women's Access to Markets and Financial Assets. <https://www.cfr.org/interactive/womens-participation-in-global-economy/case-studies/india>. Accessed August 28, 2019.
162. Pande R. Women's work in the beedi industry in India. In: *Women in Nation Building: A Multi-Dimensional Perspective*. Hyderabad, India: Panchjanya Publications; 2007:7-34. https://www.researchgate.net/publication/230582460_Women's_work_in_the_beedi_industry_in_India. Published January 2007. Accessed August 28, 2019.
163. Ghatak A, Gautam S. *Ground Realities of Beedi Workers in Madhya Pradesh*. New Delhi, India: Center for Health & Social Justice; 2017. http://www.chsj.org/uploads/1/0/2/1/10215849/ground_realities_of_beedi_workers_in_mp.pdf. Accessed August 28, 2019.
164. ITC Limited. Report and Accounts 2018. <https://www.itcportal.com/about-itc/shareholder-value/annual-reports/itc-annual-report-2018/pdf/ITC-Report-and-Accounts-2018.pdf>. Accessed August 28, 2019.
165. Euromonitor International. Tobacco in India. <https://www.euromonitor.com/tobacco-in-india/report>. Published July 2019. Accessed March 12, 2020.
166. FICCI CASCADE. Invisible Enemy: A Threat to our National Interests. <http://ficci.in/spdocument/20807/final-Smuggling-report.pdf>. Published 2015. Accessed August 28, 2019.
167. Government of India, Ministry of Finance. Lok Sabha: Unstarred Question No. 4031. Illicit Domestic Trade of Tobacco. <http://164.100.24.220/loksabhaquestions/annex/15/AU4031.pdf>. Accessed August 28, 2019.
168. Lal PG, Wilson NC. The perverse economics of the *bidi* and *tendu* trade. *Econ Polit Wkly*. 2012;47(2):77-80. <http://indiaenvironmentportal.org.in/files/file/Bidi%20and%20Tendu%20Trade.pdf>. Accessed March 12, 2020.
169. Lal P. Estimating the size of tendu leaf and *bidi* trade using a simple back-of-the-envelope method. *Ambio*. 2012;41(3):315-318. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3357852/>. Accessed August 28, 2019.
170. Malviya S. From a cigarette addict, ITC turns into a social smoker. *The Economic Times*. <https://economictimes.indiatimes.com/industry/cons-products/fmcg/from-a-cigarette-addict-itc-turns-into-a-social-smoker/articleshow/69780944.cms>. Updated June 14, 2019. Accessed October 21, 2019.
171. Lee M. Disney Looks to Extinguish E Cig Named "Jedi." <https://piratedthoughts.com/disney-looks-to-extinguish-e-cig-named-jedi/amp/>. Published October 14, 2019. Accessed October 21, 2019.
172. Godfrey Phillips India Limited. Who We Are. <https://www.godfreyphillips.com/company/who-we-are/>. Accessed March 12, 2020.
173. MoneyControl website. ITC shareholding. https://www.moneycontrol.com/bse/shareholding/shp_public_shares.php?sc_disp=ITC&classic=true. Accessed October 24, 2019.

174. *Bidi Industry in India: Output, Employment and Wages*. New Delhi, India: Public Health Foundation of India; 2017. http://www.searo.who.int/india/topics/tobacco/bidi_industry_in_india_output_employment_and_wages_highlights.pdf. Accessed October 21, 2019.
175. The Center for Public Integrity. In India, *Bidi* Industry's Clout Trumps Health Initiatives. <https://publicintegrity.org/health/in-india-bidi-industrys-clout-trumps-health-initiatives/>. Updated May 19, 2014. Accessed August 29, 2019.
176. Campaign for Tobacco-Free Kids. Tobacco Industry Profile – India. https://www.tobaccofreekids.org/assets/global/pdfs/en/TI_Profile_%20India_Final.pdf. Published December 2010. Accessed August 29, 2019.
177. ICRA reaffirms ratings of [ICRA]AA-(Stable) and [ICRA]A1+ for Dharampal Satyapal Limited. Rationale Report. <https://www.icra.in/Rationale/ShowRationaleReport/?Id=37032>. Published June 28, 2017. Accessed October 21, 2019.
178. Shikhar Group. About Us. <http://shikhargroup.in/company/about-us>. Accessed August 29, 2019.
179. Santosh. Top *Gutkha* and Pan Masala Manufacturing Companies in India Are Threat for Young Generation and Clean India. World Blaze website. <https://www.worldblaze.in/top-gutkha-and-pan-masala-manufacturing-companies-in-india-are-threat-for-young-generation-and-clean-india/>. Published February 20, 2018. Accessed August 29, 2019.
180. Euromonitor International. Tobacco in India. Published July 2018. Accessed March 12, 2020.
181. Sourav. Diversifying beyond the Initial Tobacco Business, Story of DS Group. <https://www.nextbigbrand.in/diversifying-beyond-the-initial-tobacco-business-story-of-ds-group/>. Published April 30, 2019. Accessed October 21, 2019.
182. Bloomberg Philanthropies. Annual Report 2019. https://www.bbhub.io/dotorg/sites/39/2019/06/AnnualReport2019_Digital.pdf. Accessed August 29, 2019.
183. Kalra A. Exclusive: Bloomberg charity scrutinized by India for anti-tobacco funding, lobbying – documents. Reuters website. <https://www.reuters.com/article/us-india-tobacco-bloomberg/exclusive-bloomberg-charity-scrutinized-by-india-for-anti-tobacco-funding-lobbying-documents-idUSKCN1B9129>. Published August 29, 2017. Accessed August 29, 2019.
184. Bhattacharya D. FCRA Licences of 20,000 NGOs Cancelled: Act Being Used as Weapon to Silence Organisations. Firstpost website. <https://www.firstpost.com/india/fcra-licences-of-20000-ngos-cancelled-act-being-used-as-weapon-to-silence-organisations-3181560.html>. Published October 26, 2018. Accessed August 29, 2019.
185. Bloomberg Philanthropies. Bloomberg Initiatives to Reduce Tobacco Use: Grants Program. https://tobaccocontrolgrants.org/What-we-fund?who_region=SEARO&country_id=38&date_type=1&date_from=2017-01-01&date_to=2025-02-25&submit=Search. Accessed August 29, 2019.
186. Bloomberg Philanthropies. Tobacco Control: If Left Unchecked, Tobacco Use Will Kill One Billion People This Century. <https://www.bloomberg.org/program/public-health/tobacco-control/>. Accessed October 21, 2019.
187. Applications Invited for Bloomberg Initiative to Reduce Tobacco Use Grants Program. NGO Box website. https://ngobox.org/nb/full_grant_announcement_Applications-Invited-for-Bloomberg-Initiative-To-Reduce-Tobacco-Use-Grants-Program-_2083. Accessed October 21, 2019.
188. India Alliance. About India Alliance. <https://www.indiaalliance.org/about-IA>. Accessed February 5, 2020.
189. Shah R, Shah R, Shah S, Bhojani U. Integrating tobacco cessation into routine dental practice: protocol for a qualitative study. *BMJ Open*. 2019;9:e028792. (<https://bmjopen.bmj.com/content/9/8/e028792>). Accessed October 21, 2019.
190. Upadhyay P, Gardi N, Desai S, et al. Genomic characterization of tobacco/nut chewing HPV-negative early stage tongue tumors identify *MMP10* as a candidate to predict metastases. *Oral Oncol*. 2017;73:56-64. (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5628952/>). Accessed October 21, 2019.
191. Nazar GP, Chang KC-M, Srivastava S, et al. Impact of India's National Tobacco Control Programme on bidi and cigarette consumption: a difference-in-differences analysis. *Tob Control*. 2018. doi: 10.1136/tobaccocontrol-2018-054621. [Epub ahead of print]. <https://tobaccocontrol.bmj.com/content/early/2019/02/13/tobaccocontrol-2018-054621>. Accessed October 21, 2019.
192. National Institutes of Health. Tobacco Use. <https://prevention.nih.gov/research-priorities/tobacco-use>. Accessed October 21, 2019.

193. National Institutes of Health, Fogarty International Center. Anti-Smoking Programs Target Indian Youth. <https://www.fic.nih.gov/News/Examples/Pages/smoking-india.aspx>. Accessed October 21, 2019.
194. National Institutes of Health, Fogarty International Center. About the Fogarty International Center. <https://www.fic.nih.gov/About/Pages/default.aspx>. Accessed October 21, 2019.
195. Murukutla N, Turk T, Prasad CV, et al. Results of a national mass media campaign in India to warn against the dangers of smokeless tobacco consumption. *Tob Control*. 2012;21(1):12-17. <https://www.ncbi.nlm.nih.gov/pubmed/21508418>. Accessed August 29, 2019.
196. Turk T, Murukutla N, Gupta S, et al. Using a smokeless tobacco control mass media campaign and other synergistic elements to address social inequalities in India. *Cancer Causes Control*. 2012;23(suppl 1):81-90. https://www.researchgate.net/profile/Tahir_Turk/publication/221963779_Use_of_social_marketing_campaign_and_other_synergies_to_address_social_inequalities_in_smokeless_tobacco_consumption_in_India/links/00b7d52d9027fdc830000000/Use-of-social-marketing-campaign-and-other-synergies-to-address-social-inequalities-in-smokeless-tobacco-consumption-in-India.pdf. Accessed October 21, 2019.
197. World Health Organization. GATS 2: Global Adult Tobacco Survey India 2016-17 Fact Sheet. https://www.who.int/tobacco/surveillance/survey/gats/GATS_India_2016-17_FactSheet.pdf. Accessed October 21, 2019.
198. TPackSS: Tobacco Pack Surveillance System Cigarette Health Warning Label Compliance: India – 2016. https://globaltobaccocontrol.org/tpackss/sites/default/files/tpackss_indiawave2_healthwarning_06_28_18.pdf. Accessed October 21, 2019.
199. TPackSS: Tobacco Pack Surveillance System Smokeless Tobacco Health Warning Label Compliance: India – 2016. https://www.globaltobaccocontrol.org/tpackss/sites/default/files/tpackss_smokeless_HWI_10_22_2018.pdf. Accessed October 21, 2019.
200. Iacobelli M, Saraf S, Welding K, Clegg Smith K, Cohen JE. Manipulated: graphic health warnings on smokeless tobacco in rural India. *Tob Control*. 2019. doi: 10.1136/tobaccocontrol-2018-054715. [Epub ahead of print]. <https://tobaccocontrol.bmj.com/content/early/2019/01/28/tobaccocontrol-2018-054715>. Accessed October 21, 2019.
201. Gravely S, Fong GT, Driezen P, et al. An examination of the effectiveness of health warning labels on smokeless tobacco products in four states in India: findings from the TCP India cohort survey. *BMC Public Health*. 2016;16(1):1246. <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-016-3899-7>. Accessed October 22, 2019.
202. Ratih SP, Susanna D. Perceived effectiveness of pictorial health warnings on changes in smoking behaviour in Asia: a literature review. *BMC Public Health*. 2018;18(1):1165. <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-018-6072-7>. Accessed August 29, 2019.
203. Lal P, Kumar R, Ray S, et al. The single cigarette economy in India—a back of the envelope survey to estimate its magnitude. *Asian Pac J Cancer Prev*. 2015;16(13):5579-5582. <https://www.ncbi.nlm.nih.gov/pubmed/26225713>. Accessed October 22, 2019.
204. Khariwala SS, Garg A, Stepanov I, et al. Point-of-sale tobacco advertising remains prominent in Mumbai, India. *Tob Regul Sci*. 2016;2(3):230-238. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5313054/>. Accessed October 22, 2019.
205. Ministry of Health and Family Welfare. Food Safety and Standards (Prohibition and Restrictions on Sales) Regulations, 2011. *The Gazette of India: Extraordinary* website. [https://upload.indiacode.nic.in/showfile?actid=AC_CEN_39_65_00002_200634_1517807326101&type=regulation&filename=3.%20ESS\(Prohibition%20and%20%20Restriction%20on%20Sales\)%20Regulation%202011.pdf](https://upload.indiacode.nic.in/showfile?actid=AC_CEN_39_65_00002_200634_1517807326101&type=regulation&filename=3.%20ESS(Prohibition%20and%20%20Restriction%20on%20Sales)%20Regulation%202011.pdf). Accessed February 5, 2020.
206. *Operational Guidelines: National Tobacco Control Programme*. New Delhi, India: National Tobacco Control Cell, Ministry of Health and Family Welfare, Government of India; 2015. <http://ntcp.nhp.gov.in/assets/document/Guideline-manuals/Operational-Guidelines-National-Tobacco-Control-Programme.pdf>. Accessed October 22, 2019.
207. Framework Convention of Tobacco Control (FCTC), Conference of Parties. Comments/Inputs of the Department of Agriculture, Cooperation, and Farmers Welfare. https://untobaccocontrol.org/impldb/wp-content/uploads/India_Annex-8_Comments_Inputs-of-the-Department-of-Agriculture-Cooperation-and-Farmers-Welfare.pdf. Accessed October 22, 2019.
208. *National Framework for Joint TB-Tobacco Collaborative Activities*. New Delhi, India: Ministry of Health and Family Welfare, Government of India; 2017. <https://tbcindia.gov.in/WriteReadData/TB-Tobacco.pdf>. Published May 2017. Accessed August 26, 2019.

209. Goods and Services Tax (GST) Council. GST Rate Schedule for Goods [As per discussions in the GST Council Meeting held on 18th May, 2017]. <http://www.gstcouncil.gov.in/sites/default/files/gst%20rates/chapter-wise-rate-wise-gst-schedule-18.05.2017.pdf>. Published May 18, 2017. Accessed October 22, 2019.
210. Goods and Services Tax (GST) Council. Rate of GST on Goods [booklet]. <http://gstcouncil.gov.in/sites/default/files/NOTIFICATION%20PDF/goods-rates-booklet-03.July2017.pdf>. Published July 3, 2017. Accessed October 22, 2019.
211. Goods and Services Tax (GST) Council. Notification No. 1/2017-Compensation Cess (Rate). <http://gstcouncil.gov.in/sites/default/files/gst%20rates/notfctn-1-compensation-cess-english.pdf>. Published June 28, 2017. Accessed October 22, 2019.
212. Sharma NC. 12 States Ban E-Cigarettes, Health Ministry Urges All to Follow. Live Mint News website. <https://www.livemint.com/news/india/12-states-ban-e-cigarettes-health-ministry-urges-all-to-follow-1552447122172.html>. Updated March 13, 2019. Accessed October 22, 2019.
213. National Health Mission. National Tobacco Control Programme (NTCP). <https://nhm.gov.in/index1.php?lang=1&level=2&sublinkid=1052&lid=607>. Accessed February 5, 2020.
214. Framework Convention of Tobacco Control (FCTC), Conference of Parties. 2018 - Core Questionnaire of the Reporting Instrument of WHO FCTC. https://untobaccocontrol.org/impldb/wp-content/uploads/India_2018_report.pdf. Published September 14, 2018. Accessed October 22, 2019.
215. United Nations. Protocol to Eliminate Illicit Trade in Tobacco Products. Depository Notification. https://untobaccocontrol.org/impldb/wp-content/uploads/India_Annex-7_Depository-Notification-Accession-to-Protocol_2012.pdf. Published November 12, 2012. Accessed October 22, 2019.
216. Indian Council of Medical Research. White Paper on Electronic Nicotine Delivery System (ENDS) Released at ICMR Headquarters [press release]. https://www.icmr.nic.in/sites/default/files/press_realease_files/Press_Release_2.pdf. Published May 31, 2019. Accessed August 30, 2019.
217. Ministry of Health and Family Welfare, Government of India. Bill No. 342 of 2019. The Prohibition of Electronic Cigarettes (Production, Manufacture, Import, Export, Transport, Sale, Distribution, Storage and Advertisement) Bill, 2019. http://164.100.47.4/BillsTexts/LSBillTexts/Asintroduced/342_2019_LS_E.pdf. Accessed February 5, 2020.
218. Ministry of Health and Family Welfare, Government of India. About National Tobacco Control Cell (NTCC). <https://mohfw.gov.in/sites/default/files/About%20NTCC.pdf>. Accessed August 30, 2019.
219. World Health Organization. *WHO Report on the Global Tobacco Epidemic, 2008*. Appendix I: Country Profiles. Geneva, Switzerland: WHO; 2008. https://www.who.int/tobacco/mpower/mpower_report_country_profiles_2008.pdf?ua=1. Accessed October 22, 2019.
220. World Health Organization. *WHO Report on the Global Tobacco Epidemic, 2019*. Appendix VII: Country Profile: India. Geneva, Switzerland: WHO; 2019. https://www.who.int/tobacco/surveillance/policy/country_profile/ind.pdf?ua=1. Accessed February 5, 2020.
221. Farsalinos K, Russell C, Sharan R. The prospects of e-cigarettes in India: overview of evidence, opportunities and challenges based on experience in western countries. *Ind J Clin Pract*. 2019;29(12):1106-1120. https://ijcp.in/Admin/CMS/PDF/5.%20Perspective_IJCP_May2019.pdf. Accessed March 13, 2020.
222. Fairchild AL, Bayer R, Lee JS. The e-cigarette debate: what counts as evidence? *Am J Public Health*. 2019;109(7):1000-1006. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6603453/pdf/AJPH.2019.305107.pdf>. Accessed March 13, 2020.
223. Smokeless Tobacco Use Kills. Cancer India website. <http://cancerindia.org.in/smokeless-tobacco-india/>. Updated October 11, 2019. Accessed October 23, 2019.
224. Chaturvedi P, Seth S, Gupta PC, Sarin A. Can prohibition work? The case of India's smokeless tobacco ban [blog]. *Tob Control*. https://blogs.bmj.com/tc/2015/08/27/can-prohibition-work-the-case-of-indias-smokeless-tobacco-ban/?int_source=trendmd&int_medium=cpc&int_campaign=usage-042019. Published August 27, 2015. Accessed October 23, 2019.
225. Despite Ban, Gutka Business Thrives in District's Rural Area. *The Times of India*. <https://timesofindia.indiatimes.com/city/coimbatore/despite-ban-gutka-business-thrives-in-districts-rural-areas/articleshow/71017345.cms>. Updated September 7, 2019. Accessed October 23, 2019.

226. Joy H. Chewable Tobacco Easily Available Despite Ban in India. Mediindia website. <https://www.medindia.net/news/chewable-tobacco-easily-available-despite-ban-in-india-168768-1.htm>. Published March 22, 2017. Accessed October 23, 2019.
227. World Health Organization. *WHO Report on the Global Tobacco Epidemic, 2019*. Geneva, Switzerland: WHO; 2019. https://www.who.int/tobacco/global_report/en/. Accessed February 5, 2020.
228. Ministry of Health and Family Welfare, Government of India. *Global Adult Tobacco Survey: India 2009-2010 Report (GATS 1)*. https://www.who.int/tobacco/surveillance/survey/gats/gats_india_report.pdf?ua=1. Published 2010. Accessed August 30, 2019.
229. Goods and Services Tax (GST) Council. Updated Schedule of CGST Rates on Goods as on 15.11.2017. <http://gstcouncil.gov.in/sites/default/files/ready-reckoner/CGST%20rates%20for%20Goods%20under%20different%20Notifications%20%20as%20amended%20from%20time%20to%20time.pdf>. Published November 15, 2017. Accessed October 23, 2019.
230. Government of India. Receipt Budget, 2017-2018. <https://www.indiabudget.gov.in/budget2017-2018/ub2017-18/rec/tr.pdf>. Accessed October 23, 2019.
231. Selvaraj S, Srivastava S, Karan A. Price elasticity of tobacco products among economic classes in India, 2011-2012. *BMJ Open*. 2015;5(12):e008180. <https://bmjopen.bmj.com/content/5/12/e008180.long>. Accessed September 17, 2019.
232. Shaukat M. Tobacco control in India: achievements and remaining challenges. Presented at: Regional Consultation on Multisectoral Policies for Prevention and Control of Noncommunicable Diseases (NCDs) in the South East Asia Region; August 18-20, 2014; Bengaluru, India. http://www.searo.who.int/entity/noncommunicable_diseases/events/ncd-bengaluru-tobacco-control-india.pdf?ua=1. Accessed October 23, 2019.
233. Government of India, Ministry of Finance. Lok Sabha: Unstarred Question No. 5947. Crop Diversification Programme Under RKVY. <http://loksabhaph.nic.in/Questions/QResult15.aspx?qref=67824&lsno=16>. Published 2018. Accessed March 12, 2020.
234. Tobacco Institute of India (TII). Sustainable Tobacco Farming & Livelihood Challenges in India. <https://www.tiionline.org/publications/tii-booklets/>. Published March 2018. Accessed October 23, 2019.
235. Self-Employed Women's Association (SEWA). Our Voice Our Concerns: *Bidi* Workers on Welfare Benefits. <http://www.sewa.org/images/pdf/30-5-11%20Our%20voice%20our%20concerns%20-%20Bidi%20workers%20on%20welfare%20benefits.pdf>. Published May 30, 2011. Accessed October 23, 2019.
236. HRIDAY (Health-Related Information Dissemination Amongst Youth). Burden of Bidi Use in India [fact sheet]. <http://hriday-shan.org/wp-content/uploads/2015/07/The%20Burden%20of%20bidi.pdf>. Published 2015. Accessed October 23, 2019.
237. Voluntary Health Association of India (VHAI). At the Crossroads of Life and Livelihood. The Economic, Poverty and Working Conditions of People Employed in the Tobacco Industry in India. <http://www.rctfi.org/resources/At%20the%20Crossroads%20of%20Life%20and%20Livelihood-1.pdf>. Published 2010. Accessed October 23, 2019.
238. World Customs Organization. *Illicit Trade Report 2016*. http://www.wcoomd.org/-/media/wco/public/global/pdf/topics/enforcement-and-compliance/activities-and-programmes/illicit-trade-report/itr_2016_en.pdf?db=web. Published 2016. Accessed October 31, 2019.
239. Tobacco Institute of India (TII). *Illegal Cigarette Trade Poses a Huge Threat to India: Impacts Livelihood, Deprives Government of Revenue, & Promotes Organized Crime*. 3rd ed. <https://www.tiionline.org/wp-content/uploads/Handbook-on-Illegal-Cigarette-03-07-2019.pdf>. Published July 3, 2019. Accessed October 23, 2019.