



The relevance and prospects of advancing tobacco control in Indonesia[☆]

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Abstract

Using published data about consumption, economic aspects, and legislation, this paper analyzes tobacco control in Indonesia, a major consumer and producer of tobacco products. Given its large population and smoking prevalence, Indonesia ranks fifth among countries with the highest tobacco consumption globally. Over 62% of Indonesian adult males smoke regularly, contributing to a growing burden of non-communicable diseases and enormous demands on the health care system. Tobacco control policies, however, have remained low on the political and public health agenda for many years. One reason was the contribution of tobacco to government revenues and employment, particularly in the industrial sector. But tobacco's importance in employment has fallen significantly since the 1970s from 38% of total manufacturing employment compared with 5.6% today. Widespread use of tobacco since the 1970s and the concomitant burden of non-communicable diseases have given rise to a more balanced view of the costs and benefits of tobacco production over the last decade. The first tobacco control regulation passed in 1999, succeeded by amendments in 2000 and 2003. Today, few restrictions exist on tobacco industry conduct, advertising, and promotion in Indonesia. We examine the relevance and prospects of advancing in Indonesia four cost-effective tobacco control strategies: price and tax measures, advertising bans, clean air legislation, and public education. We conclude with several suggestions for action for the public health community.

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Keywords: Tobacco control policies; Costs and benefits; Indonesia

1. Introduction

Widely cultivated across Java, tobacco was added to the long-established social habit of chewing betel, or areca nut, throughout the 19th century. The Dutch began to import into Indonesia cigars and cigarettes during the late 1800s, and local elites emulated Dutch smoking habits [1]. Until today, the Indonesian term for smoking remains *merokok*, adapted from the Dutch

[☆] The article originated from data collected for The Tobacco Sourcebook, published by the Ministry of Health, 2004. English and Indonesian versions of the Sourcebook are available from Dr. Anhari Achadi or Dr. Widyastuti Soerojo. For this article, the authors are responsible for all errors and omissions but gratefully acknowledge comments from Abdillah Ahsan, Joy de Beyer, Tei-Weh Hu, Pugh Irawan, Kartono Muhamed and reviewers of this journal.

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verb, *roken*. Following a longstanding practice to flavor most consumables, cloves were mixed with tobacco cigarettes in the late 1800s, to create the uniquely Indonesian *kreteks*, or clove cigarettes. Early *kreteks* were thought to have originated in Kudus, Central Java, and were so named from the *keretek-keretek* sound of cloves burning and exploding. Initially a home industry, hand rolled *kreteks* were commercially produced in Indonesia in 1906 [2], and production of white (tobacco only) cigarettes followed suit in 1924 [1]. Smoking *kreteks* replaced chewing betel during the early to mid-1900s for many rural males, and their popularity soared after the mechanization of the industry in the 1970s [3,4].

Widespread use of tobacco since the 1970s and the concomitant burden of non-communicable diseases have given rise to a more balanced view of the costs and benefits of tobacco production over the last decade. Indeed, several important advances in tobacco control have been made, including a series of regulations since 1999. The most cost-effective components of tobacco control policies have been described in detail elsewhere [5,6]. Given that tobacco in Indonesia overlaps legal, political, and economic considerations, implementation of tobacco control policies must consider the perspectives of a broad range of stakeholders. In this paper, we first provide an overview tobacco consumption, its health effects, and the impact of tobacco production on Indonesia's social and economic sectors. We then present an overview of tobacco control regulation, and the political environment surrounding changes made in these regulations. Subsequently, we examine four

cost effective strategies: price and tax measures, advertising bans, clean air legislation, and public education. We discuss the relevance and prospects of advancing each in Indonesia, the potential resistance, and other barriers to implementation. We conclude with several suggestions for action for the public health community.

2. Tobacco consumption and adverse effects

2.1. Consumption and prevalence

Given its large population and smoking prevalence, Indonesia ranks fifth among countries with the highest tobacco consumption globally at 182 billion sticks per year [4]. Consumption has increased rapidly since the 1960s. Between 1970 and 1980, a 159% increase coincides with the mechanization of the clove cigarette industry [4]. With a doubling of the GNP per capita in real terms between 1980 and 1997 [7], tobacco consumption rose by 8.2% per year for a cumulative increase of 139% [4]. Quite remarkably, the rise in consumption continued even after the economic crisis of 1997 [4].

Adult smoking prevalence rose from 26.9% to 31.5% between 1995 and 2001, reflecting an increase among males from 53.4% to 62.2% [8]. Regionally, the highest male smoking rates are Gorontalo province (69%) in the northernmost tail of Sulawesi Island compared with the lowest in Bali (45.7%). East Java and Lampung provinces experienced steep increases in prevalence between 1995 and 2001 exceeding 60%,

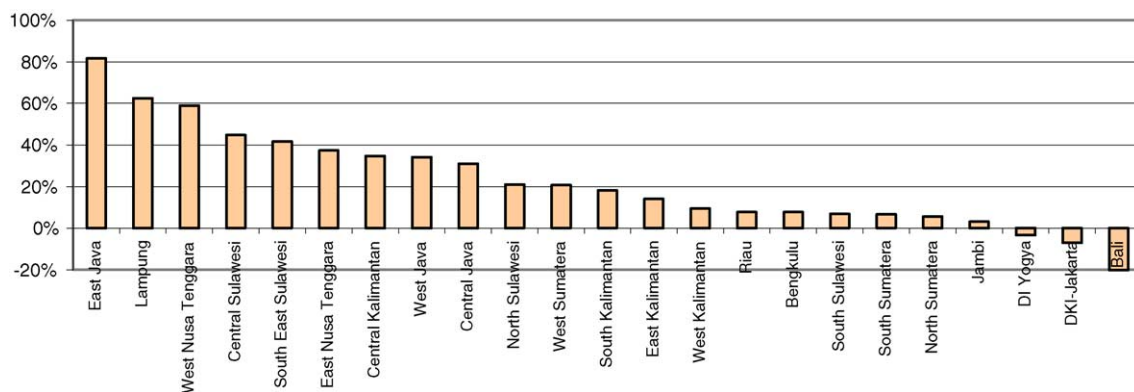


Fig. 1. Percentage change in average smoking prevalence, by province, between 1995 and 2001 [8].

and relatively low educational levels could be a contributing factor (Fig. 1). Female smoking prevalence more than doubled between 1995 and 2001 in Papua, East Kalimantan, Central Java and Bali provinces, although nationwide rates remain below 2%. The vast majority of smokers (68.8%) started their habit before 19 years of age [8].

2.2. Adverse health effects

Kreteks are preferred by 88% of Indonesian smokers [8]. They are comprised of 30–40% cloves, unusual among spices because they contain eugenol used as a local anesthetic in dentistry [9]. Eugenol has been linked to acute, chronic, and behavioral health effects when inhaled [10]. US studies have associated inhaling clove cigarettes with severe lung injury among those with existing pulmonary problems [11]. Eugenol is considered a possible human carcinogen, and it is closely related to safrole, a weak hepatic carcinogen [10,12]. By numbing the throat, eugenol allows for deeper inhalation; behaviors associated with smoking *kreteks* include slower smoking and more puffs because the rods of the clove are firmly packed [13]. Whereas US youth may perceive *kreteks* as less harmful to health [14], Indonesians generally view white (tobacco only) cigarettes as weaker than *kreteks* because they have lower levels of nicotine. Nicotine yields for *kreteks* sold in Indonesia are between 1.7 and 2.5 mg per stick [15] compared with <0.05 and 1.4 mg per stick for cigarettes sold in the US [16].

In addition to eugenol, a single brand of *kreteks* can have hundreds of different additives in its “sauce,” which maintains the flavor of a particular brand over time given variations in leaf quality [2]. During the manufacturing process, hundreds of other chemicals are added to tobacco to ease inhalation and also reduce the amount of tobacco in each stick. In addition to flavorings that enhance taste, additives can include ammonia to increase nicotine absorption and cocoa to dilute airways [17]. While such additives may be safe when ingested, the health effects of inhaling them are not known. Indonesian tobacco industries are not required to disclose additives or chemicals added to tobacco products. Indeed, they argue that the “sauce” is a part of a given brand’s taste and success, and firms go to great lengths to keep it secret [2].

Given that *kreteks* are largely comprised of tobacco, they bear at a minimum the same health risks of tobacco-only cigarettes, the negative impacts of which have long been established [18]. In 2020, the WHO projects that tobacco-related illnesses will become the largest single health problem, causing an estimated 8.4 million deaths globally per year with half of these deaths in Asia given rapidly increasing tobacco use [19]. This implies that tobacco-attributable deaths in Asia will increase nearly four-fold from 1.1 million in 1990 to 4.2 million in 2020.

Overall, it is estimated that tobacco related mortality accounts for 10% of total deaths in Indonesia [8], or approximately 200,000 annually. The WHO estimates that the majority of deaths in Indonesia (61%) are attributable to non-communicable diseases, and three conditions accounted for three-fourths of non-communicable disease deaths: cardiovascular diseases, malignant neoplasm, and chronic obstructive pulmonary disease [20]. Globally, smoking accounts for 22% of all cardiovascular disease [20]; and smoking is also associated with hypertension and cerebrovascular disease [21]. Between 56% and 80% of all chronic respiratory disease is attributable to smoking, including chronic bronchitis and emphysema [21]. Given that bronchitis is associated with long-term morbidity, it implies high costs to the health system over the long-term [22]. In populations where smoking is widespread, smoking causes 90% of lung cancers in men [23].

2.3. Adverse effects in the family, workplace, and environment

Independent scientific bodies that have comprehensively evaluated environmental tobacco smoke have concluded that it is harmful to human health, and children are particularly vulnerable [24]. More than one in two Indonesian households (57%) have at least one smoker, and nearly all (91.8%) smoke at home in the presence of family members [8]. The number of Indonesians regularly exposed to environmental tobacco smoke in their own homes exceeds 97 million, and 43 million are children [25].

Reid (1985) notes that *siriegeld*, or betel money, was an important household expenditure in the 18th century [1]. Today, the term is *uang rokok*, cigarette money, but the proportion of household resources remains substantial. In 1976, households spent an average of 5.4%

of their monthly expenditures on tobacco [1], and this proportion increased to 9.6% by 2001 due to an increase in prevalence and the price of tobacco products. For comparison, spending for meat, eggs, and milk combined amounted to 6.4% of monthly household spending in 2001 [8]. Smoking prevalence is higher among the poorest, who spend 9.1% of their household resources on tobacco products compared with 7.5% among the wealthiest [8]. Expenditures increase with income, whereby the wealthy consume greater amounts of tobacco at higher prices and thus spend more in absolute terms [8].

To our knowledge, only one study has been conducted to assess occupational health and safety hazards for tobacco farmers. This study found signs of Green Tobacco Illness or pesticide poisoning among 80 tobacco farmers in Central Java, Indonesia, as indicated by increased blood pressure and pulse rates, irregular breathing frequency and differences in urine nicotine levels that varied by work experience, geographic location, and utilization of safety equipment [26].

3. Tobacco production

3.1. Agriculture

Commercial tobacco plantations were first established in the mid to late 1800s in Deli, Sumatra, and foreign currency from leaf and manufactured product exports was an importance source of revenue for the Dutch colonial government [1]. At present, less than 1% of arable land is dedicated to tobacco cultivation [27]. One of the top 10 global suppliers, Indonesia contributes less than 145,000 t, or 2.3%, to the world's leaf supply. The majority (96%) comes from three provinces: East and Central Java, and West Nusa Tenggara [8], and smallholders manage 98% of tobacco area [28]. The number of Indonesians provided full-time employment by planting tobacco was equivalent to 420,000 workers, which represents approximately 1% of the agricultural and 0.5% of the total labor force [8]. This proportion of employment provided by tobacco agriculture has declined over time, and parallels the gradual shift in employment from the agricultural to the industrial and service sectors over the past 20 years.

More than 90% of tobacco farmland is dedicated to cultivation of the Voor-Oogst type, three quarters of which is Peoples tobacco used as raw material for *kreteks*. The rest is largely comprised of Virginia tobacco used as raw material in the production of white or blended cigarettes [8]. Virginia tobacco farmers report higher yields as the result of partnership schemes between farmers and large cigarette manufacturers [29]. The manufacturers provide farmers with resources, technical assistance and small loans, which are repaid in kind with the sale of leaves at a price set by the manufacturers. This arrangement generally places the farmers in a weak bargaining position, and reports exist about dissatisfaction among farmers because leaf prices are based on industry-determined standards of quality [30].

Clove is the main raw material in the production of *kretek* cigarettes after tobacco, and Indonesia produces 63% of global supply [8]. An estimated 1.2 million smallholders own 90% of clove farms [8]. Between 1995 and 2002, total clove production declined from 90,007 to 52,665 t, directly related to the clove monopoly established in 1990 and dissolved in 1998, owned by a son of President Suharto. After the monopoly was abolished in 1998, real clove prices increased 13-fold between 1997 and 2002, due in part to farmers having switched crops finding cloves no longer profitable [8].

3.2. Manufacturing

Indigenous businesspeople flourished in Kudus, Central Java, in the 18th Century including cigarette manufacturers such as Nitisemito, who started Bal Tiga Company and the first commercial production of *kreteks* in 1906 [2]. Bal Tiga and other *kretek* cigarette manufacturers produced an estimated 7.1 billion sticks annually and employed some 80,000 people during the 1930s [1]. The Indonesian tobacco market is dualistic, making a clear distinction between *kreteks* and white cigarettes. Domestic manufacture of white cigarettes began in 1924 by British American Tobacco, and imported white cigarettes also maintained a share of the market peaking at 12 billion sticks in 1957 [1]. Between 1920 and 1960, several large multinational foreign owned companies competed with several hundred small-scale domestic firms.

Cigarette manufacturing was transformed in the 1970s with the mechanization of the *kretek* industry. The industry invested in modern packaging that replicated more sophisticated white cigarette brands [3], and the popularity of *kreteks* soared. Production levels increased 10-fold between 1969 and 1994 [3], and national tobacco consumption jumped by 159% between 1970 and 1980 [4]. In 1974, *kretek* and white cigarette production was nearly equal; 10 years later, *kretek* production exceeded white cigarettes by a factor of more than 3.

Mechanization among selected companies, the increased popularity of *kreteks*, and bans on foreign investment [31] resulted in domestic domination of the Indonesian tobacco market. Today, three firms dominate 76% of the market: Gudang Garam, Djarum, and Sampoerna [8]. Competition, however, remains intense as demonstrated by fluctuating market shares during the 1980s and 1990s [3,32]. Profits among the top cigarette manufactures are high. Gudang Garam sales rank first among consumer product industries, exceeding Rp 20.9 billion (US\$ 2.5 million) in 2002; Sampoerna sales fell into third place at Rp 15.1 billion (US\$ 1.8 million) [31].

Women comprise 81% of workers in the tobacco manufacturing sector [8]. The hand-rolled *kretek* industry remains labor-intensive focusing on a pair of women: one who rolls cigarettes with a simple wooden machine and the second who trims the tobacco from the ends of each cigarette [3]. A pair of women produces between 3000 and 4000 cigarettes in a single day, or about 455,000 cigarettes per person per year [30]. Wages for *kretek* production workers remains piece rate and low, at approximately 63% of average manufacturing sector wages [8].

A consequence of industry mechanization was a drop in employment. In contrast to a woman who hand-rolls a half million *kreteks* per year, modern machinery can produce as many as 16,000 cigarettes per minute [33]. The labor required for hand rolled *kreteks* amounts to 12% of production costs compared with only 0.4% for machine rolled *kreteks* [32]. According to Bird [3], the Department of Trade and Industry made numerous attempts to minimize the impact of mechanization on employment. It initially restricted the number of licenses issued for cigarette mechanization during the 1970s, and the proportion of production each firm could mechanize was limited to 10%. Realizing

that compliance was low, the proportion was amended to 50%, then 66%. Despite these attempts, employment declined steeply. In the 1970s, the industry's contribution to manufacturing employment was 38% [34]. It has fallen to 5.6% today, which amounts to less than 1% of total employment in the industrial sector [8]. Production and employment in the hand-rolled sector, however, have remained relatively stable during the 1980s and 1990s, due in part lower excise tax rates which makes small hand rolled industries profitable given low labor costs.

4. Components of tobacco control: relevance, potential barriers and resistance to implementation

4.1. Tobacco control regulations in Indonesia

Tobacco control was low on the public health agenda before the late 1990s. Reynolds [35] quotes President Suharto's Minister of Health as having "no intention" of regulating smoking through legislation, although tobacco was included among regular health education activities. Despite the Suharto family's far-reaching business interests, to the authors' knowledge, only Suharto's son, Tommy, was involved in the tobacco industry; he owned the highly unpopular clove monopoly dissolved in 1998 under an International Monetary Fund reform agreement [36]. The industry, however, flourished under the Suharto political culture where payoffs ensured corporate survival [35].

In May 1998, Suharto installed as Interim President his vice president B.J. Habibie, who had little independent political base [37]. During this period, a National Communication Forum (*Forum Komunikasi Nasional*) was established under the Food and Drug Administration, Ministry of Health,¹ which brought together non-governmental organizations working on tobacco issues with government staff. Professor Moeloek, the Minister of Health under the Habibie cabinet, initiated both the Communication Forum and the first government regulation about tobacco control signed by Habibie in 1999,

¹ Note that the Food and Drug Administration was not a separate agency during this period but operated as a Directorate within the Ministry of Health bureaucracy.

titled PP/81/1999 (for *Peraturan Pemerintah* number 81 issued in 1999).

This regulation enforced an advertising ban in the electronic media and required that health warnings accompany advertisements. It specified that health warnings must be easy to read, authorized one health message for use, and required that tar and nicotine levels be printed on cigarette packages. The articles for product regulation and disclosure further specified maximum tar and nicotine yields (1.5 and 20 mg, respectively), required testing for every product, and established time limits for compliance. Large-scale hand-rolled cigarette industries were given 5 years to comply; small-scale hand-rolled cigarette industries were given 10 years, and all others had 2 years.²

In terms of clean air restrictions, PP/81/1999 established bans on smoking in selected public places, namely health facilities, religious facilities, workplaces for teaching and children's activities, and public transportation. The regulation restricted vending machine sales to places inaccessible to minors and prohibited the distribution of free samples. Lastly, it included specific penalties for violating the articles on advertising and health warnings (see Table 1) [38].

In 2000, President Wahid signed an amendment, the PP/38/2000. The two major changes related to advertising restrictions and time limits for implementing the articles about maximum tar and nicotine levels. PP/38/2000 permitted advertising in the electronic media between 21:30 p.m. and 5:00 a.m. The time limits for enforcement of maximum tar and nicotine levels replaces the industry classification (large and small) with the type of cigarettes produced. The 2-year time limit applied only to white machine-made cigarette manufacturers, compared with 7 years for the machine made *kretek* companies and 10 years for hand-rolled *kretek* companies. Some compensation to health was made given that five additional health warnings were authorized for use.

Some observers viewed Wahid's support of the regulation as evidence of its backing from the white tobacco industry [39]. The modification to the compliance timeline, however, benefited *kretek* manufacturers who were given an additional 5 years to comply. Wahid's strong affiliation with the *Nahdlatul Ulama*

(NU), Indonesia's largest Muslim association, must have also been an important consideration. Whereas smoking is discouraged in Indonesian Islamic society, the business arm of NU had investments in *kretek* manufacturing and widely marketed in early 2003, a popular new brand, *Tali Jagat*, or rope of the universe [40].

The third amendment, PP19/2003, was signed in early 2003 by President Megawati. This modification eliminated the articles about maximum tar and nicotine content, but stipulated that every product batch should undergo testing by an accredited laboratory. It explicitly stated that all advertisements and cigarette packages should disclose tar and nicotine levels in addition to displaying health warnings. For the first time, the size of health warnings was established at 15% of the package, but only one message was authorized for use. Most importantly, this revision dropped the specific sanctions for violation of the articles.

This regulation was passed in early 2003. The dates during which it was debated and signed coincided with a meeting in Geneva of the Intergovernmental Negotiating Body (INB) of the Framework Convention on Tobacco Control (FCTC). Thus, senior Ministry of Health and Food and Drug Administration representatives involved in tobacco control issues were not present. The regulation was openly criticized by non-governmental organizations for being passed without public consultation and transparency [41]. While it is unclear which interest groups were responsible for initiating the 2003 revision, the domestic *kretek* industry stood to benefit from the omission of the articles about maximum tar and nicotine levels. At the same time, public disclosure of tar and nicotine levels was used by both white and *kretek* manufacturers as a means to market their products. Omitting all sanctions for violations by manufacturers, advertisers, and retailers rendered the regulation extremely weak. A relationship between the domestic industry and the President's political party was confirmed in 2003 and 2004 when free cigarettes were distributed during party rallies promoting legislative and presidential candidates [42,43].

Under this context, we proceed to discuss the relevance and potential barriers to implementation of four cost-effective tobacco control measures: price and tax, comprehensive bans on advertising and promotion, clean air laws, and public education and information.

² See next section on price and tax measures for industry definitions of large and small scale.

Table 1
Comparison of the changes in tobacco control regulation, Indonesia, 1999–2003 [37]

Section	Article	PP no. 81, 1999	PP no. 38, 2000	PP no. 19, 2003
Advertisement, sponsorship and promotion	Bans	Advertisements are restricted to printed and outdoor media	Advertisement are permitted in electronic media in addition to printed and outdoor media	
	Same as previous PP		Explanatory documents clarify that advertisements are permitted between 21.30 p.m. and 05.00 a.m. local time	Allowable hours for advertisements are explicitly mentioned (21.30 p.m.–05.00 a.m. local time)
	Content/design	Advertisements must not encourage people to smoke, describe or persuade people that smoking has health benefits, present pictures and/or writings of cigarettes or people smoking, target children or pregnant women, mention that the product is a cigarette brand	Same as previous PP	Additional restriction was added: advertisements must not violate any norms in society
	Health warnings	Health warnings must be included in advertisements	Same as previous PP	In addition to health warnings, every advertisement must disclose nicotine and tar levels
Packaging and labeling	Health warnings	Health warnings must be easy to read	Same as previous PP	Health warnings must be placed on and comprise at least 15% of the wide side of the package
		The authorized health warning reads: "Smoking can cause cancer, heart attacks, impotence and harm pregnancy and fetal development"	The MoH and Coordinating Ministry for Social Welfare authorized five alternative warning messages	The authorized health warning reads: "Smoking can cause cancer, heart attacks, impotence and harm pregnancy and fetal development"
Product regulation and disclosure	Disclosure of tar and nicotine levels	Tar and nicotine levels must be disclosed on cigarette package	Same as previous PP	Same as previous PP
	Maximum tar and nicotine level	Maximum nicotine and tar level for each cigarette must not exceed 1.5 and 20 mg	Same as previous PP	Restriction on maximum tar and nicotine level eliminated
	Emissions testing	Every cigarette produced must undergo testing for tar and nicotine levels	Same as previous PP	Every production batch must undergo testing of tar and nicotine level an accredited laboratory
	Disclosure of tar and nicotine level	Public disclosure of tar and nicotine content is required	Same as previous PP	Public disclosure of tar and nicotine level for every cigarette produced required
	Compliance	Industries producing machine made cigarettes must comply within 2 years Large scale hand made cigarette industries must comply within 5 years and small scale hand-made industries must comply within 5 years	Industries producing white machine made cigarettes must comply within 2 years Machine made kretek industries must comply within 7 years and hand made kretek industries, 10 years	Eliminated restriction on maximum tar and nicotine level Eliminated restriction on maximum tar and nicotine level

Table 1 (Continued).

Section	Article	PP no. 81, 1999	PP no. 38, 2000	PP no. 19, 2003
Clean air restrictions	Restricted places	Smoking bans on public places: including health facilities, religious facilities, workplaces for teaching and children activities and public transportation	Same as previous PP	Same as previous PP
Sales and distribution	Vending machine sales	Vending machines are to be located in places not accessible children	Same as previous PP	Same as previous PP
	Free tobacco products	Distribution of free cigarettes is prohibited	Same as previous PP	Same as previous PP
Penalties and enforcement		Manufacturers, advertisers, and retailers can be fined up to Rp 100,000,000 or 5 years in jail for violation of advertising restrictions, and fines up to Rp 10,000,000 for failure to include health warnings	Same as previous PP	Sanctions for violation were eliminated

4.2. Price and tax measures

Globally, increasing the price of tobacco products has been demonstrated as the single most effective strategy for reducing the devastating health burden of tobacco use. Research in low and middle-income countries predicts price elasticity as between -0.5 and -1.0 , or that a 10% increase in price results in a 5–10% reduction in tobacco consumption [44]. The World Bank concluded that a price rise of 10% globally would reduce demand for tobacco products by 4–8% thereby preventing at least 10 million tobacco related deaths [44]. Tax as a proportion of the total cigarette price averages 31% in Indonesia, which is one of the lowest tax rates in the region next to Cambodia [34]. Studies in Indonesia indicate that a 10% price increase would decrease cigarette consumption between 3.5% and 6.1% [8], whereas government tax revenues would increase by 6.7–9% [34]. Recent excise tax hikes amounting to a 100% real increase between 1997 and 2001 reduced the demand for excise tax stamps by only 0.24%, suggesting that the industry may not have passed on the increase as higher prices to consumers or that increases in household income offset price increases [45].

As early as 1939, a differential excise tax was established for white cigarettes and *kreteks* [46]. Since 1969, excise taxes have been based on a minimum retail price for tobacco products upon which excise tax is established by type of product and production

scale. The existing policy applies an excise tax rate between 26% and 40% for machine made *kreteks* and white cigarettes, whereas rates for handmade *kreteks* are taxed between 4% and 22% [47]. The variation in rates depends on production scale. Machine made clove and white cigarette companies with annual production levels exceeding 2 billion sticks pay a 40% excise tax rate, compared with 4% for handmade clove cigarette companies that produce less than 6 million sticks per year [29,47]. The purpose of the tiered tax system, still in effect today, is to protect both small domestic industries and *kretek* manufacturers [3]. In effect, the tiered system compensates in part for the economies of scale enjoyed by large manufacturers. *Kretek* manufacturers, large and small, however, have come to expect preferential tax rates; in 2003, the *kretek* manufacturing association publicly complained about the government's reduction in retail prices for white cigarettes [30]. The industry argues that *kreteks* should be promoted as an indigenous Indonesian product similar to traditional medicine [48].

To achieve their revenue targets, the Ministry of Finance modifies not only the tax rates but also the base price and industry classification. Despite the lowest tax rates overall, for example, the minimum retail price established for hand rolled *kreteks* increased from Rp 225 per stick in the beginning of 2002, to Rp 340 later the same year [47]. In addition, large industries were classified in early 2001 as those producing 6 billion cigarettes

or more; later the same year, this definition was modified to 2 billion [8]. Companies have responded in some cases by reducing their production levels to fall into a lower industry classification, thereby reducing their overall tax burden and increasing their profits [3]. In general, pressures to increase government revenues result in an increase in the excise tax rate and minimum price for the largest producers.

At the manufacturing level, the industry aims to avoid paying the highest tax rates. Large firms can buy or subcontract firms with lower production scales so that they qualify for lower taxes. Once prohibited, the Ministry of Finance officially recognized this practice in 1999 [49]. In addition, the purchase of excise ribbons from one company for resale to another within a lower tax bracket has been reported [30]. The large increase in the proportion of tobacco excise tax revenue from handmade clove cigarettes, from 13.6% of total tobacco excise tax revenue in 1995 to 23.7% in 2002 [8], could be attributed to the tiered taxation system, with the lowest tax rates for handmade *kreteks*, combined with the ease of starting small hand-rolled *kretek* businesses. The Ministry of Finance has recently indicated its intention to examine the effects of the tiered system, by withholding the required excise tax registration numbers for new cigarette companies, given the difficulty of regulating and collecting excise tax resulting from the proliferation of very small hand-rolled cigarette companies in the lowest tax bracket [50].

The tiered tax system also provides a level of discretion to government officials. Preliminary findings of a report commissioned by the Ministry of Finance identified the tobacco industry as one of the largest tax dodgers [51]. The Minister himself has championed a clampdown on tax evaders [52], and improved tax administration has been the focus of a recent World Bank report on fiscal policy [53]. Another factor possibly related to tax evasion is the difficulty of monitoring and regulating single stick sales. The Sampoerna tobacco manufacturer claims that single sticks account for 30% of their total cigarette sales [54]. Moreover, selling cigarettes by the stick increases their affordability and accessibility, particularly for youth. The official retail sales price for a single cigarette stick is as low as Rp 125, less than US\$ 0.02, for a *klobot* corn husk cigarette and Rp 400, or US\$ 0.05, for a machine made clove cigarette [47]. Given that packs or cartons are usually discounted at point of sale, buying by the stick

results in a higher level of expenditure for tobacco over the long term.

Long inherent to the excise tax structure is multiple and sometimes conflicting goals, including revenue generation, employment, and the promotion of small industries. From a public health standpoint, tobacco products are substitutes whereby an increase in the price of one type may lead to an increase in the consumption of cheaper products. It is desirable, therefore, to keep price differentials at point of sale to a minimum for all tobacco products, with prices high across the board. The tiered system, however, results in large differences between the lowest and highest excise tax rates, and this can translate into large price differences for consumers despite the differences in production scale.

An argument used against tax increases is the importance of excise tax revenues to government revenue. Cigarette excise taxes remain an important source of national revenues, and have increased over time from 4% (1996) to nearly 10% of total government revenue in 2002 [8]. The targeted excise tax revenue for 2004 is Rp 27.7 trillion, or approximately US\$ 3.2 billion [55]. The Ministry of Finance's custom and excise bureau reports that demand is inelastic, or the reduction in consumption would be less than the proportionate increase in price [8], suggesting that the government is aware that revenues can be increased via excise tax hikes. However, the finance ministry and parliamentary budget commission, which together establish revenue targets, have decided to freeze excise tax rates in 2004, after a series of consecutive increases which doubled the contribution of excise tax to total government revenue. "I sympathize with the idea of getting people to stop smoking," states Minister of Finance Boediono in a recent article. "But for now the cost is too high," referring to the proportion of total government revenues generated by excise tax [56]. The Ministry's approach instead is to encourage an increase in tobacco production (and thereby consumption) to reach its revenue targets [57], despite smoking prevalence among adult males reaching 62%.

Resistance from within the government to increasing the price of tobacco remains strong. The Government of Indonesia has long viewed the tobacco industry as contributing jobs and resources to the economy, and has formulated policies promoting the industry. It has also taken pains to avoid any policy decision that hints

at exacerbating unemployment and poverty levels, estimated at 8.3% and 18.2%, respectively [58,59]. Empirical evidence suggests that a large tax increase will not affect employment. Despite substantial tax increases between 1998 and 2002, the Ministry of Agriculture reports a doubling in the total number of farmers involved in tobacco production between 1998 and 2002 [8], and an increase in manufacturing employment by 10% between 1998 and 2000 [8]. The most recent tobacco excise tax freezes are a politically popular move, taking place before the 2004 national elections.

4.3. Comprehensive bans on advertising, promotion, and sponsorship

A multi-country study demonstrated that comprehensive bans on advertising, promotion, and sponsorship were highly effective in reducing tobacco consumption, whereas partial bans on cigarette product advertisements have limited or no effect [60]. All television advertising was banned in Indonesia in the 1980s, and tobacco advertising was limited to billboards and print media. The ban was lifted in 1989, after which television advertising was first permitted. *Kompas*, the largest Indonesian language paper, reversed in 2004 its longstanding prohibition on tobacco advertising since the 1980s [3] and now accepts tobacco advertisements. At present, virtually no restrictions exist on tobacco advertising in Indonesia. The limits on daytime electronic advertising are overridden by a 2002 Telecommunications Law, and advertisements are aired on daytime TV without sanction [61]. In its 1995 Annual Report, Sampoerna boasts, “Indonesian companies have almost royal freedom to advertise their products in any format and through almost any communications vehicle in the country.” [62].

Most companies, however, rely heavily on indirect advertising methods, including sponsorship of sports, concerts, and cultural events [35]; distribution of free samples or coupons for discounts on tobacco purchases [8]; or paid advertisements in films and among film stars [63,64]. During the 2004 election campaigns, cigarettes were packaged with political party brands for distribution during rallies promoting legislative candidates, thus avoiding regulations on excise tax, health warnings, and free samples by packaging. “It’s a good way to touch the people,” stated a member of the United

Islamic Party, one group that took advantage of tobacco sponsorship [56].

The primary resistance to tobacco advertising restrictions comes from the Ministry of Telecommunications, local governments that tax billboard advertisements, and private television stations. The income from TV tobacco advertisements was estimated at Rp 414 billion, or about US\$ 48 million in 2002 [8]. However, the tobacco industry contributed only about 7% of the estimated Rp 6 trillion spent on television adverts from the top 10 advertisers. Revenue from cigarette billboards amounted to 6.9% of outdoor media in 1999 [35], although this likely increased after decentralization laws were implemented in 2001, and taxes on billboards became an increasingly important part of local government revenues. Forestalling any loss of revenues from tobacco advertising restrictions, the Ministry of Telecommunications issued in 2002 a carefully worded broadcasting law that prohibits advertising addictive substances with the exception of tobacco advertisements inasmuch as cigarettes are not shown [65].

4.4. Clean air legislation

Just under one in three adult Indonesians smoke (31.5%) [8], and an estimated 43 million Indonesian children are regularly exposed to environmental tobacco smoke [25]. Internationally, clean air laws have been demonstrated as extremely effective in preventing non-smokers from being exposed to carcinogens of environmental tobacco smoke and decreasing consumption among smokers [66]. Despite studies demonstrating the positive effects of non-smoking policies on hotel and business revenues [67,68], and increasingly vocal consumer demand for clean air laws [69] very few Indonesian businesses have enacted non-smoking policies outside of international franchises. An important exception is Indonesia’s state-run airlines, *Garuda*, which voluntarily banned smoking on international from January 2004 because of customer complaints [70].

Low awareness also exists among the public about the health hazards of environmental tobacco smoke. Public demand for implementing clean air laws, therefore, is low, and non-smokers consider environmental tobacco smoke a nuisance rather than a health hazard. Ubiquitous advertising promotes smoking as a social norm among males; thus environ-

mental tobacco smoke in public areas is widely tolerated.

Clean air laws, however, are politically popular, and the parliamentary commission for health and social welfare has established its chambers as “smoke-free.” A recent survey among Jakarta residents showed that 90% supported smoking bans in public places and public transport [71]. The Governor of Metropolitan Jakarta has responded to public pressure for clean air laws by issuing a decree that every government office should be smoke free [72]. Despite the existing legislation that has, since 1999, banned smoking in some public places, enforcement is uncommon. This is due in part to the lack of implementing guidelines and sanctions for enforcing the regulations. Such implementing guidelines would have to be issued by the local governments, in cooperation with a range of different government ministries, including transportation, industry, and health. The logistics of implementing such guidelines and sanctions within the government sector, therefore, are cumbersome.

4.5. Public education and information

Few Indonesians comprehend the health risks associated with tobacco use; even less is understood about the effects of environmental tobacco smoke. Industry advocates keep the controversy alive by claiming that *kretek* cigarettes are healthy and natural. In 1989, Business Week ran a story entitled “Smoke *Kreteks* to Avoid Heart Disease and Cancer” [73]. Promoting independent research is essential. In response to the death of several US teenagers in the 1980s from pulmonary failure linked to smoking imported *kreteks* [74], the Specialty Tobacco Council comprised of *kretek* export manufacturers commissioned research about the health impacts of *kreteks*. Their widely publicized results found that clove cigarettes may have beneficial health effects [75] contrary to independent studies [10–12].

No minimum typeface is specified in the existing regulation for health warnings. At present, only one message is authorized for use, and people have become so accustomed to the message that it serves largely to indicate a tobacco advertisement. Striking differences in prevalence can be seen by educational levels, whereby 73.0% of males with no education smoke compared with 44.2% of males with college education [8], suggesting the need to clearly communicate health risks.

Indeed, despite large increases in prevalence between 1995 and 2001, reductions can be seen in Bali and Jakarta, where populations are more educated (Fig. 1).

An ongoing controversy relates to printing tar and nicotine levels on cigarette packages. The 1999 legislation included public disclosure of cigarette content, with an emphasis on printing tar and nicotine levels on packages. Given that heart and circulatory diseases, cancers, and other diseases have been linked with many of the chemicals present in tar [76], the tobacco control community hailed this as an important victory in advancing public information about the health hazards of tobacco use. This is a particularly important issue in Indonesia, where striking differences exist between domestically produced *kreteks* and white tobacco only cigarettes. Indonesian *kreteks* yield between 1.7 and 2.5 mg per stick of nicotine and between 28.1 to 53.2 mg per stick of tar [15], compared with <0.05 to 1.4 mg per stick of nicotine and <0.5 to 24.0 mg per stick of tar in white (tobacco only) cigarettes sold in the US [16].

The key, however, is in the way such emissions are measured. Cigarette ratings for tar, nicotine and carbon monoxide were established by the U.S. Federal Trade Commission’s International Organization for Standardization (ISO) in 1967. As the public began to understand the negative health impacts of smoking, the industry developed products that rated lower in tar and nicotine levels by ISO methods, to reassure smokers that healthier alternatives existed. Smokers who switched to “low” tar and nicotine cigarettes also “compensated” for low levels of nicotine by smoking more cigarettes, inhaling more deeply and longer, or covering up the ventilation holes in the cigarettes [17]. ISO ratings, therefore, do not predict actual cumulative tar and nicotine intake; and smokers of medium, low, and very low tar cigarettes remain at risk in developing tobacco-related illnesses [23,77,78]. The WHO recommends banning the printing of tar, nicotine, and CO ratings on cigarette packages, as well as terms such as “light”, “mild” or “low tar,” because consumers are misled to believe that these types of products are less harmful to health [17,79].

Appealing to increasingly health conscious urban consumers, the *kretek* industry began to promote “low” tar and nicotine brands. In 1990, Sampoerna began publishing estimates of tar and nicotine levels for its own cigarettes and its competitors to promote its *A Mild*

brand [73]. From no market share in 1994, the “mild” segment covered 7% of sales in 1999 [73], topped by Sampoerna’s A Mild with the slogan “How low can you go?[®].” Sampoerna similarly reports tar and nicotine levels for its Dji Sam Soe brand (36 mg of tar and 2.0 mg of nicotine), marketed towards risk-takers.

The white tobacco industry has also used the opportunity to promote its cigarettes as “healthier.” British American Tobacco (BAT) Indonesia requested that the government impose taxes on companies for high nicotine levels; “BAT is looking to protect its gains and extend its market share,” explained an analyst [39]. Philip Morris Indonesia offered support to the Ministry of Health to increase its capacity to measure tar and nicotine levels [80]. Thus, the government’s policy requiring manufacturers to print on packages tar and nicotine levels as measured by ISO standards supports the industry in marketing its products.

More recently, the tobacco control community’s pressure for limiting tar and nicotine yields has created a backlash. The tobacco control community has been accused of hurting local farmers’ and industry livelihoods by promoting white cigarettes made from imported or more highly processed leaves with lower tar and nicotine yields. Anecdotal evidence suggests that industry leaf buyers have claimed that domestic tobacco leaves are “too high in tar” as an excuse to pay farmers a lower price [45]. The industry has also begun to promote *kretek* specific emission standards, arguing that international standards benefit multinational tobacco companies [48].

5. Future directions

Clearly, substantial barriers to implementing tobacco control exist in Indonesia. However, we put forth several activities that can be conducted over the near to medium term, which aim to advance the most cost effective strategies outlined. Broadly, these activities include promoting leadership, strengthening legislation and enforcement, advancing price and tax measures, and informing the public.

5.1. Promoting leadership

A recent set of case studies reaffirmed that leadership in tobacco control is a key component of suc-

cess [81]. While strong leadership currently exists within the ministries for health and social welfare, the need exists to establish a critical mass and a cross-cutting alliance across government, professional and non-governmental associations, media, and among national and provincial legislators.

A number of non-governmental and professional organizations advocate for tobacco control. Two umbrella organizations are the National Committee for Smoking Control and the Coalition for Healthy Indonesia.³ The National Committee for Smoking Control aims solely to advocate for tobacco control; it is comprised of 21 organizations, ranging from medical professionals to film artists. The Coalition is comprised of 30 non-governmental and professional organizations. Although not specifically dedicated to tobacco control, the Coalition is active in working with media and health legislature.⁴ One of the most active organizations, the Tobacco Control Foundation,⁵ works independently of these two groups.

Religious leaders. Given that the vast majority of Indonesians are Muslims, the religious community will play a key role in the tobacco control movement. Smoking is currently considered “*makruh*,” or strongly discouraged, in Indonesian Islamic society. A regional debate is ongoing, however, as to whether smoking (like alcohol and drugs) is discouraged or rather “*haram*,” forbidden. One charismatic and influential Muslim cleric, KH. Abdullah Faqih, established a restriction on smoking nearly 6 years ago in his *Pesantren*, or Islamic boarding school, in East Java [82]. The Langitan boarding school is located near tobacco producing regions and also within a region where Muslim scholars meet to discuss the interpretation of the Koran and contemporary issues. The cleric is affiliated with the *Nahdlatul Ulama*, Indonesia’s largest Muslim association, with an estimated 45 million followers. “Make not your own hands contribute to your destruction,” the deputy of Langitan quotes from the Koran. Whereas

³ In Indonesian, the groups are Komite Nasional Penanggulangan Masalah Merokok or Komnas PMM; and Koalisi untuk Indonesia Sehat.

⁴ In addition to these two groups, many other non-governmental organizations based in Jakarta and the provinces become involved in tobacco control as it relates to their mandate, such as child health or health legislation.

⁵ In Indonesia, the group is *Lembaga Menanggulangi Masalah Merokok* or LM3.

the strength of a religious prohibition is strong, youth still need to be informed of the health hazards of smoking, so that such a prohibition, similar to restricting youth access, does not provide the temptation to smoke.

Mobilizing professional associations, non-governmental associations, and women's groups. An increasing number of professional associations and non-governmental organizations are active in tobacco-related issues, and these organizations can play a key role in providing accurate information and balancing public opinion. Working with women's groups—particularly those not yet involved in tobacco control activities—and providing information about the negative health effects of environmental tobacco smoke could encourage them to voice a stance on tobacco control.

Mobilizing the academic community. Small research grants to support independent researchers in agriculture, industry, economics, and epidemiology would assist in mobilizing the intellectual resources within the academic community and better inform the debate. Very little basic research has focused on the health impacts of smoking *kreteks*, for example, despite evidence that eugenol, the active ingredient in cloves, has additional negative health impacts [10–12].

Strengthening the tobacco control community and its links to the international community. Despite the great potential of the tobacco control community, working alliances among the organizations are weak. Between the non-governmental and government organizations, a contributing factor is the mutual distrust based on the relatively recent establishment of independent NGOs. Among the organizations themselves, severe lack of resources for tobacco control activities place them in direct competition for limited activity funding. An important first step is to build the capacity of the tobacco control organizations to advance their understanding of the scope and breadth of tobacco control issues thus enabling them to move beyond advocacy and develop organization-specific mandates. Supporting international linkages would be of great benefit, given that links at present are mainly among the academic community for research. One exception is an important initiative by the Thai Health Foundation that aims to strengthen regional links among NGOs and share experiences.

5.2. Strengthening legislation and its enforcement

The Megawati administration has declined to sign the Framework Convention on Tobacco Control (FCTC). The FCTC signing would have included Indonesia within the international community's efforts to address significant cross border issues, such as smuggling and advertising. However, the public health community can still reexamine its own legislation in light of the FCTC negotiations and final text—particularly given that the Government of Indonesia fully participated in these negotiations and the drafting committee. In addition, the existing clean air regulation can be reinforced and new legislation proposed to address the shortcomings of the existing regulation.

Examining existing legislation related to tobacco control. Tobacco control regulations relate to several sectors, including industry, trade, agriculture, finance, communications, health, and social welfare. The recently passed broadcasting law, for example, can be interpreted as permitting daytime tobacco advertisements on television, although this is prohibited in the tobacco control regulation. In addition, the process of implementing tobacco control legislation requires parliamentary approval at national level, which must be then translated into local laws approved by district parliaments. A NGO active in promoting health among national legislators, the Forum for Parliamentarians in Population and Development (Forum Parlemen), is at present examining existing legislation at national level relating to tobacco control, which provides the basis for understanding the broad ranging interests of all stakeholders who must be involved in future tobacco control legislation.

Implementing clean air laws. Given that clean air laws exist for selected areas and public support is high, developing ways to implement and enforce existing legislation should be a priority. Ongoing pilots in the Jakarta Municipality aim to disseminate information about the health hazards of environmental tobacco smoke, and develop implementing guidelines for enforcing clean air laws on public transportation and some public spaces.

Paving the way for new legislation. The existing tobacco control policies is in the form of a regulation signed by the president. To carry more legal weight, the Ministry of Health hopes to advance legislation in the form of a law approved by the national parliament.

Newly elected national and provincial parliaments in 2004 necessitate advocacy to advance understanding of the key articles that represent a major departure from the existing regulation. Such articles would include expanding on existing clean air laws, increasing the size of health warnings for all tobacco packaging and advertisements, developing rotating health messages, establishing a comprehensive advertising ban on all print and electronic media, and instituting industry disclosure to the Food and Drug Administration about important emissions and additives. Legislation is also required to address price and tax measures, given an existing law capping excise tax rates to 55% of base price. Such legislation must specify sanctions and penalties to be taken seriously.

In particular, the articles in the existing regulation about printing tar and nicotine levels on cigarette packages should be reevaluated. The primary reason is that the current measurements have no basis in health, given that they are based on industry rather than health standards, and is inconsistent from a public health standpoint that all tobacco products are harmful to health. In addition, the domestic industry has associated the promotion of tar and nicotine caps with the promotion of multinational companies and harm to local economies. This article, therefore, is politically damaging for the tobacco control community and distracts from effective tobacco control strategies.

Conducting research to inform about a comprehensive advertising ban. Independent research could usefully inform about a comprehensive advertising ban, including identifying the different stakeholders from the government and private sectors and their interests, and monitoring local and national revenues from tobacco advertisements in print and electronic media.

5.3. Advancing price and tax measures

Any modifications in the tobacco excise tax are politically charged with strong resistance from related government sectors and industry. However, a number of activities may promote higher tobacco prices at point of sale, including improving tax administration, reducing the large differences in the tiered rates, and eliminating single stick sales. Future research on the impact of changes in excise tax rates on employment is a priority.

Improving tax administration. The Ministry of Finance has publicly put forth strong efforts to improve

tax structure and collection, and the Minister himself has championed a clampdown on tax evaders. A recent report about fiscal reform in Indonesia recommends increasing tobacco excise and also improving administration [53]. Support to the Ministry of Finance in its ongoing efforts to improve excise tax administration and collection would likely have a great impact both on revenue generation and increasing tobacco prices at point of sale.

Reducing the large differences in excise tax rates. Given the long-standing practice of tiered excise tax rates, there appears little possibility of a flat rate in the near to mid-term future. It is recognized, however, that the tiered policy designed to support small industries actually with “benefits” to large industries. Thus, the government has considered reducing the large differences between the lowest and highest base prices and tax rates. This change would have several positive effects. Incentives for large industries to legally avoid the highest tax rates (via subcontracting, for example) would be reduced or eliminated. In addition, the discretion implied in implementing the tiered tax structure among government officials would be moderated. From a public health standpoint, minimizing price differentials at point of sale would reduce substitution between tobacco products.

Eliminating single stick sales. Eliminating single stick sales would be an important step forward in reducing accessibility of tobacco products among youth. It may also address excise tax evasion related to the difficulty of monitoring and regulating single stick sales, which form a substantial proportion of total sales in Indonesia. Effective implementation would require regulating industry product packaging, distribution, and marketing rather than solely focusing on retailers.

Researching the impact of increasing excise tax on employment. The excise tax policy in Indonesia has long been pro-labor, even when it implies a reduction in government revenues. Certain companies, have, in fact, reduced production levels in response to excise tax caps [3], and thus the effect of the excise tax structure on employment, particularly in the hand-rolled cigarette industry, is a concern. Despite little possibility that even the strongest tobacco control measures will affect tobacco farmers over the short or medium term, the government also expresses concern about possible negative impacts on farmers, for whom public sympathy runs high. Independent research is required to inform policy-

makers about the impact of excise tax policies on employment within the hand-rolled cigarette industry and tobacco farming over the medium and long-term.

5.4. Informing the public

The general public in Indonesia is largely unaware of the hazards of active and passive tobacco use. Greater efforts must be made to work with print and electronic media to better inform and also mobilize the public to speak out for their right to clean air and a healthy environment.

Working with journalists. Tobacco control is a complex issue and the media is a primary means to influence public opinion in Indonesia. Briefings to journalists on tobacco control issues would help journalists better understand the stakeholders on all sides and access unbiased information so that they can effectively communicate key issues to the public.

Identifying specific groups that are easy to reach. More than 44% of males with college education smoke regularly, and 8% of medical doctors do so [8]. This population can be relatively easily reached via print and electronic media. University educated populations and professional associations can be intensively targeted with available information to encourage a reduction in smoking among populations who are more likely to read current events and understand health related information.

Targeted media and public action campaigns. A public awareness effort is required, and market research could usefully inform about the most appropriate and effective messages to inform the public about the health hazards of active and passive tobacco use. Similarly, messages could be developed to encourage the public to take specific actions, such as speaking out to businesses and government officials with regard to their right to clean air.

6. Conclusions

In the Government of Indonesia's long-term strategic plan, human development is a central priority, with strategies aiming to reduce the high levels of poverty and unemployment. Overwhelming evidence indicates the benefits to human and social development of regulating tobacco promotion. The Indonesian industry,

however, is viewed positively as contributing jobs and resources to the economy, and this perception is reinforced via direct lobbying to government officials and parliamentarians. In this environment, the public health community must maintain a long-term perspective, take steps to advance the most effective strategies, and act strategically when the political environment provides the opportunity. Demonstrating success and achievements is extremely important.

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