

Post-2015 Development Agenda

Indonesian Perspectives



Non-communicable Diseases

SPEAKERS AND CONTRIBUTORS

Elizabeth Brouwer

Elizabeth Brouwer works as a Health Economics Analyst for Disease Control Priorities(DCP), funded in 2009 by the Bill & Melinda Gates Foundation. DCP is a seven year project managed by University of Washington's Department of Global Health and the Institute for Health Metrics and Evaluation (IHME). The goal of DCP is to improve population health in low-resource settings through health policy analysis

Rachel Nugent

Rachel A. Nugent, Ph.D. is the DCPN Principal Investigator and DCP3 Series Editor for the following volumes: Cardio-metabolic and Respiratory Disease; Environmental Health and Injury Prevention; AIDS, STIs, TB and Malaria; and Disease Control Priorities.

Rachel is also a Clinical Associate Professor in the Department of Global Health at the University of Washington and Director of the Disease Control Priorities Network. She joined the UW in April 2011. She was formerly Deputy Director of Global Health at the Center for Global Development, Director of Health and Economics at the Population Reference Bureau, Program Director of Health and Economics Programs at the Fogarty International Center of NIH, and senior economist at the Food and Agriculture Organization of the United Nations.

Table of Contents

| | |
|---|----------|
| <i>Summary: White Paper Report by Elizabeth Brouwer & Rachel Nugent</i> | 1 |
| <i>White Paper Report by Elizabeth Brouwer & Rachel Nugent</i> | 2 |

Summary: White Paper Report by Elizabeth Brouwer and Rachel Nugent

Although the fight against infectious diseases has benefitted so many people, Indonesia is suffering more and more from what were once seen as the diseases of affluent countries, such as heart disease and cancer. These so-called non-communicable diseases (NCDs) now account for over 65% of all deaths in the country.

Smoking and obesity are two major risk factors for a whole range of NCDs, including hypertension, heart disease, cancer and diabetes. Obesity is a difficult thing to prevent in a population, but in high-income countries there has been some real success in cutting deaths by reducing tobacco consumption and encouraging healthier diets. The Copenhagen Consensus study suggests there is every reason to think that similar success can be achieved in Indonesia.

Increasing the price of cigarettes through taxation is a very effective way to reduce consumption. Currently, Indonesia has one of the highest levels of cigarette use and the highest percentage of young smokers in the world. In 2010, 41% of boys aged 13-15 smoked and more than 65% of adult men smoked regularly. Tobacco consumption is believed to cause between 13 and 15% of all deaths and over 20% of male deaths in the country. Over half a million Indonesians will die each year from causes attributable to smoking by 2030 if current trends continue.

This is partly because cigarette prices are low (an average pack of cigarettes from a kiosk costs 12,700 IDR) compared with other low-income countries, and taxation is low and quite easily avoided. The great majority of smokers use domestically-produced kreteks, which are largely untaxed. Increasing taxes acts as a disincentive to smoke, particularly for young people. The Copenhagen Consensus study recommends increasing tax to 15% of the current sale price over the next 15 years to reduce cigarette consumption by 60%.

About half of the currently projected 534,000 tobacco-related deaths in 2030 would be premature, that is those dying would be younger than the age of 70, the current average life expectancy in the country. The rise in taxation would mean that 60 million people would quit smoking, cut back their consumption heavily, or never start smoking in the first place; this would save 107,000 premature deaths each year.

As well as the human misery avoided, each survivor would on average work for another 15 years, benefitting both his family and the overall economy (giving overall productivity gains of 21 trillion IDR). There would be costs to implement the policy, of course, but the health and productivity gains would be worth up to 11,000 rupiah for every thousand spent, not counting the additional tax income.

Stroke is the top cause of death in the country, with heart disease at number five. Smoking, high blood pressure and poor diet are the main causes of both. Obesity occurs in parallel with childhood under-nutrition, giving a double burden of malnutrition, but unfortunately there are no easy ways to ensure people eat a healthy, balanced diet. However, 30% of the population aged 30 to 70 has a medium to high risk of dying from conditions brought on by high blood pressure, and there are effective ways to improve their health.

Successfully treating just a quarter of these would pay back 13,000 IDR for every thousand rupiahs spent on treatment. This assumes that half the 60 million Indonesians needing medication receive it and that half of these people complete their treatment. By 2030, this could save over 66,000 premature deaths and greatly improve the lives of many more.

High blood pressure can also be controlled by reducing salt in the diet, and public policy has been effective at doing this in many countries, including China. Using salt substitutes, educating consumers and reducing salt levels in processed foods are all things which should be considered in Indonesia.

Indonesia has a major, ongoing NCD problem, which needs policies such as these to turn the tide.

White Paper Report by Elizabeth Brouwer and Rachel Nugent

Indonesia, the fourth largest country in the world in terms of population, is in the throes of an epidemiological transition. While infectious diseases and malnutrition continue to be major issues for population health, non-communicable diseases (NCDs) such as heart disease and cancer now account for over 65% of all deaths in the country. In addition to growing in prevalence, NCDs are disproportionately affecting people in their prime working years (25-60 years), causing families to forego income as well as pay for costly health services.

Two major contributors to the growing NCD health problems in Indonesia are high levels of tobacco consumption and obesity, which are risk factors to a host of health conditions including hypertension, heart disease, cancer and diabetes. Fortunately, there are both policy and personal actions that are proven to work elsewhere to reduce these risks and ensure a healthy population and workforce. Success in lowering NCD mortality rates in high income countries has been dramatic. This paper argues that cost-effective prevention and treatment solutions are available, and ready to be scaled-up and implemented in Indonesia.

Decades of tobacco policy in high-income countries have provided a solid evidence base for cost-effective interventions to reduce population tobacco use, the most effective of which is taxation. Policies are also available to treat high blood pressure and avert deaths from stroke and heart disease, which are often caused by obesity. There is less robust evidence for preventing obesity at a population level, however early treatment and management of obesity-related diseases have proven affordable and effective, even in low-resource settings. Here we offer details about how these health risks are present in Indonesia, and what the government can do to reduce them. We also provide estimates of the financial costs and benefits of taking action to reduce smoking and avert deaths from high blood pressure.

Tobacco Taxation

The most immediate and effective way to reduce cigarette consumption is to increase the price. This causes three separate effects: 1) current smokers reduce the intensity of their tobacco consumption, 2) current smokers quit altogether, and 3) non-smokers are deterred from picking up the habit. Experts estimate that doubling inflation-adjusted tobacco prices will eventually reduce consumption by about one third (Jha 2014), averting population-level sickness and premature death.

Indonesia has one of the highest rates of cigarette consumption and the highest percentage of young smokers in the world, due in part to the country's almost complete lack of tobacco control policies. The country is ranked 14th in the world in its level of lung disease, largely attributable to smoking. More than 65% of Indonesian men smoke regularly and tobacco consumption is said to have caused between 13 - 15% of all deaths and over 20% of all male deaths in the country (WHOGATS, GBD 2010). Indonesia remains the only country in Southeast Asia that has not ratified the WHO's Framework Convention on Tobacco Control. Over 80% of tobacco users in the country smoke kreteks, domestically made clove cigarettes that go largely untaxed, while hand-rolled and imported cigarettes (white cigarettes) are popular too. Most smokers buy their products from kiosks, where an average pack of cigarettes costs 12,700 IDR (~\$1 USD) and a single cigarette costs about 600 IDR (\$0.04 USD).

Relative to their neighbors and other low-income countries, Indonesia's taxes and prices are low, and the real price of cigarettes has remained remarkably stable between 1970 and 2005 (WHOGATS). The reported tobacco tax rate in Indonesia is 37% of the sale price, which is subject to numerous loopholes and still well below the

World Health Organization's benchmark of 70%. Taking into account the delayed health effects of tobacco and the increasing trend of tobacco use in Indonesia, it is projected that 534,000 Indonesians will die from tobacco-attributable causes in the year 2030 alone. There are therefore enormous potential health and financial gains to be made from substantially increasing the country's tobacco tax rate over the next 10-15 years.

Tobacco taxation is especially attractive when targeting younger tobacco users who may be less able to afford the increased price, and may be less addicted. Youth are up to three times more sensitive to price changes than adults (Chaloupka and Grossman 1996, Jha et al 2006). Smokers who quit before the age of 40 avoid more than 90% of the health risks associated with the habit as compared to those who continue to smoke. In contrast, education campaigns about the risks of smoking are often less effective – especially among the young -- due to the long delay before the onset of many chronic diseases. This is important in Indonesia, where smoking prevalence among boys aged 13-15 was 41% in 2010 and the average age of initiation is 17 (WHO Country Profile, WHOGATS).

Increasing the current tax rate to 150% of the sale price over the next 15 years, for example, could decrease cigarette consumption by 60%. That means in the year 2030, 63 million would-be users will have quit, substantially reduced their smoking, or would not have started smoking in the first place. At the individual level, the average smoker who spends 216,000 IDR (\$16 USD) per month on tobacco would have to spend 540,000 IDR (\$40 USD) per month with the new taxes to continue his habit at the same intensity, which is a powerful incentive to reduce tobacco consumption.

We estimate that about 534,000 deaths will happen in Indonesia in 2030 from tobacco use. If the goal of 60% smoking reduction is achieved, about 107,000 premature deaths would be averted in Indonesia in 2030 alone. Saving these lives will restore an average of 15 productive years to each former or would-be smoker, and would provide the country over 21.08 trillion IDR (\$1.6 billion dollars) in additional income from productivity gains and almost 195 trillion IDR (\$15 billion US dollars) in tax revenue by year 2030.

Indonesia's projected 2030 population is 290 million people (World Bank Data Catalogue, Pardee Center for International Futures 2013). If it costs approximately \$0.50 per capita per year to implement a tax increase (Asaria et al 2007), tobacco taxation would cost Indonesia 1.9 trillion IDR (\$145 million dollars) in 2030 without incorporating tax revenue. On balance, considering both the costs to enact increased taxes and the benefits of a healthier, longer-living population, Indonesia would see up to 224,000 IDR (\$17 dollars) worth of benefits for every 13,000 IDR (\$1 US dollar) spent to implement a tobacco tax.

There are several caveats to consider. Taxes should be applied uniformly across all tobacco products to discourage consumers from simply switching products. Authorities would have to be mindful to actively prevent smuggling. Some may also argue that tobacco taxation will disproportionately affect the poor, and is therefore regressive. This depends on how much lower-income families reduce tobacco utilization after the price increase, however poorer households could actually benefit the most in health and financial matters relative to their income (Verguet et al 2015).

Hypertension Management and Obesity

Stroke is the number one cause of death in Indonesia, and heart disease is number five. Both are due to smoking, high blood pressure, and poor diet, which are the three top health risks in Indonesia (Global Burden of Disease 2010.) High blood pressure and obesity are precursors to non-communicable diseases that are harder to fight than tobacco. We know relatively little about combatting obesity, but we can reduce high blood pressure with both population policies such as salt reduction and effective treatment of hypertension at the individual level.

Drug therapy for people with medium to high risk of mortality from high blood pressure can be provided with a return of 170,000 IDR (\$13 USD) in health benefits for every 13,000 IDR (\$1 USD) spent on implementing the policy in Indonesia if only a quarter of hypertensive persons ages 30-69 were successfully treated. We reached this benefit-cost ratio by using age-specific population and mortality projections for the year 2030 (WB Data Catalogue). The World Health Organization estimates that it takes about 32,500 IDR (\$2.5 USD) per person annually to diagnose and treat hypertension (WHO Global Brief on Hypertension 2013). We estimate that over 60 million or about 30% of Indonesians between 30-69 will need hypertension treatment in 2030 (Mozaffarian 2014); to treat just half that population would cost about 975 billion IDR (\$75 million USD). Estimating that about half of the treated patients fully comply with their regimen, hypertension treatment could save the lives of over 66,000 adults under 70 in 2030 alone, along with providing a higher quality of life to countless others. Management of hypertension is now a global priority. Indonesia can be guided by other countries' experiences of scaling up (Angell et al, 2015).

There are many countries attempting to lower dietary salt intake, including China, where people consume 12 grams of salt per day, and on average 54 percent of adults are hypertensive. In comparison, Indonesians consume 8.5 grams of salt on average per day, while 41 percent are diagnosed with hypertension (Mozaffarian 2014). These rates call for dramatic action. Because most dietary salt is added in cooking and at the table, China is trying to reduce salt intake using salt substitutes and consumer education about the health risks of excess salt. Other countries, such as South Africa, are focusing their effort on reducing salt in packaged foods. In Indonesia, both approaches should be considered.

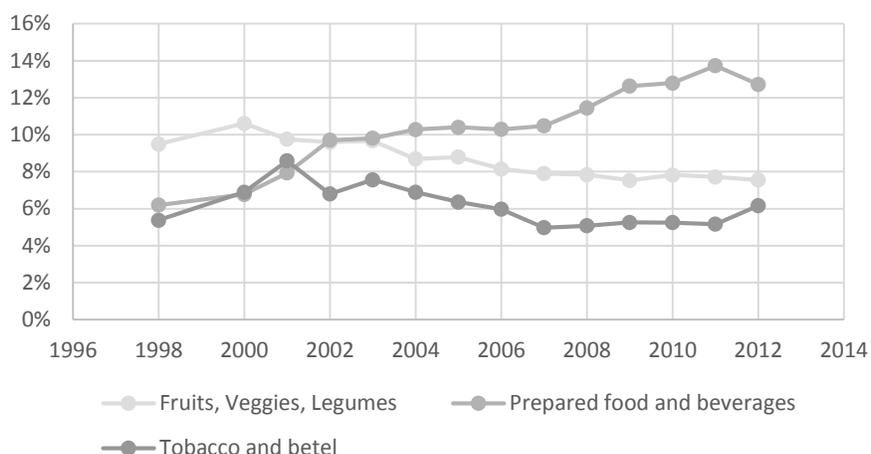
Obesity presents a far more challenging picture. Indonesia has made slow gains in reducing under-nutrition (Global Nutrition Report 2014), while obesity and overweight have been rising steadily for decades (Shrimpton 2013). In 2013, 36 percent of children under 5 were stunted (low height for age) and 14 percent were wasted (low weight for height.) In 2008, 21 percent of adults were overweight or obese, and in 2013, 12 percent of children under five were overweight or obese (Global Nutrition Report 2014.)

According to the World Bank (2013),

"Traditionally, Indonesia has prioritized undernutrition, paying special attention to "Gizi Buruk" or severe underweight as a way to judge the national nutritional situation. However, by this measure alone, nutritional issues appear largely resolved, as the prevalence of gizi buruk is just 5.4% in children under-five. That 36% of children under five are stunted is of greater concern given the lifelong consequences. The Indonesian Family Life Surveys, representative of 85% of the population, indicate that over a fifteen year period, the proportion of thin men and women decreased considerably while the proportion of "gemuk" (obese/overweight) men and women nearly doubled. This suggests that underweight is declining and overweight is increasing in Indonesian adults, much like it is in Indonesian children, where rates of "Gemuk" in the younger children (<5years) are greater than in the older ones (6-12years)."

In Indonesia, as elsewhere, this trend is due to greater availability of cheap, caloric, processed food. Figure 1 shows increases in expenditure on packages food and (marginally) on tobacco, and decreases in expenditure on fresh fruits and vegetables over the past decade and a half in Indonesia.

Figure 1: Percentage of Average Monthly Expenditure per Capita by Commodity Group. 1998-2012
(Source: Indonesian Government)



This combination of continued high rates of child undernutrition, along with both child and adult overweight and obesity, presents a classic situation of “double burden of malnutrition,” for which proven solutions are scarce. Promising policy actions have been demonstrated in Finland, where high rates of heart disease were significantly lowered by reducing salt intake, substituting healthier fats, and increasing consumption of fruits and vegetables. Most of the policy changes made there could be implemented anywhere.

Summary

In conclusion, Indonesia has a major NCD problem with no end in sight. The proven policy of tax increases on tobacco could save more than 100,000 Indonesian lives in 2030, while adding 20.8 trillion IDR (\$1.6 billion USD) in productivity to the economy. Prevention and treatment for high blood pressure can save 66,000 lives, with a benefit of 170,000 IDR (\$13 USD) per 13,000 IDR invested (\$13 and \$1 USD respectively). Malnutrition is also a huge contributor to premature mortality, especially the rising obesity and overweight among both children and adults. Reducing salt consumption and increasing healthy foods consumption have been shown elsewhere to save lives.

References:

- Angell, Sonia Y., Kevin M. De Cock, and Thomas R. Frieden. "A public health approach to global management of hypertension." *The Lancet* 385.9970 (2015): 825-827.
- Asaria, Perviz, et al. "Chronic disease prevention: health effects and financial costs of strategies to reduce salt intake and control tobacco use." *The Lancet* 370.9604 (2007): 2044-2053.
- Chaloupka, F.J., Grossman, M. Price, Tobacco Control Policies and Youth Smoking. National Bureau of Economic Research Working Paper No. W5740, 1996.
- GBD 2010: <http://vizhub.healthdata.org/gbd-compare/>
- Global Nutrition Report, 2014. IFPRI, Washington DC.
- Jha P, Chaloupka FJ, Moore J, Gajalakshmi V, Gupta PC, Peck R, et al. Tobacco addiction. Disease control priorities in developing countries (2nd Edition). pp 869-886. New York: Oxford University Press, 2006. DOI: 10.1596/978-0-821-36179-5/Chpt-46.
- Jha, P., & Peto, R. (2014). Global effects of smoking, of quitting, and of taxing tobacco. *New England Journal of Medicine*, 370(1), 60-68.
- Jha, Prabhat, and Frank J. Chaloupka. "The economics of global tobacco control." *BMJ: British Medical Journal* 321.7257 (2000): 358.
- Mozaffarian, Dariush, et al. "Global sodium consumption and death from cardiovascular causes." *New England Journal of Medicine* 371.7 (2014): 624-634.
- Nugent, R., 2015. Non-communicable Diseases Perspective Paper, Copenhagen Consensus Center.
- Pardee Center for International Futures: http://www.ifs.du.edu/ifs/frm_CountryProfile.aspx?Country=ID
- Verguet, S., Gauvreau, C. L., Mishra, S., MacLennan, M., Murphy, S. M., Brouwer, E. D., ... & Jamison, D. T. (2015). The consequences of tobacco tax on household health and finances in rich and poor smokers in China: an extended cost-effectiveness analysis. *Lancet Glob Health*, 3, e206-16.
- "A global brief on hypertension: Silent killer, global public health crisis." World Health Organization. http://apps.who.int/iris/bitstream/10665/79059/1/WHO_DCO_WHD_2013.2_eng.pdf
- WHO Country Profile: http://www.who.int/tobacco/surveillance/policy/country_profile/idn.pdf
- WHOGATS: Indonesia: http://www.who.int/tobacco/surveillance/survey/gats/indonesia_report.pdf
- World Bank Data Catalogue: <http://datatopics.worldbank.org/hnp/popestimates>
- Shrimpton R. and C. Rokx, (2013) The Double Burden of Malnutrition in Indonesia, World Bank Jakarta, Report 76192-ID