ASM Advisory Report 4/2013

Prioritizing Food Policy Options to Reduce Obesity in Malaysia

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Acknowledgement

Prof Boyd Swinburn, international collaborator from Deakin University, Australia, for his sharing of expertise and knowledgeable insight in the field of obesity prevention policies.

Foreword

I would like to convey my congratulations to the ASM Task Force on Obesity for its Advisory Report in addressing *Prioritizing Food Policy Options to Reduce Obesity in Malaysia*. This effort would not have been possible without the strong support and co-operation from various parties, including Government agencies, research institutes and the civil society, in providing the necessary input to undertake this effort.

It has been reported that one out of four children in the country is either overweight or obese. One out of three teenagers is overweight, while one out of six is obese. Childhood obesity levels in Malaysia are higher than in most Asian countries as well as in developed nations such as the Netherlands, the United Kingdom and Germany. This statistic has earned Malaysia an unenviable spot in the "World Map of Obesity".

This Advisory Report is, I feel, timely in trying to resolve this national problem. It has identified six policy options for the consideration and, if feasible, eventual implementation by the Government. The policy options are proposed in the following areas:

- Fiscal
- Primary
- Food processing
- Food marketing and information
- Food distribution and retail; and
- Food services.

The production of this Advisory Report is in fulfilment of the Academy's many functions, among which are to provide independent advice to the Government through dissemination of ideas and suggestions amongst decision- and policy-makers, scientists, engineers and technologists through identifying where the innovative use of science, engineering and technology can provide solutions to particular national problems towards sustained national development.

I am glad that this Advisory Report will be disseminated and made available to the various relevant Ministries, universities, and research institutes for wider public consumption.

Tan Sri Dr Ahmad Tajuddin Ali, FASc
President
Academy of Sciences Malaysia

Preface

The epidemic of obesity that has developed over the past 30 years, is one of the largest epidemic in the history of mankind posing a unprecedented challenge for healthcare systems around the globe. Obesity is a complex disorder with both genetic and environmental causes. The predominant driver is environmental and changes to the environment will be essential if we are to tackle the current epidemic. While personal responsibility to prevent obesity is important, unless government instigates policies to encourage people to make healthier choices, the chances of reversing the obesity epidemic look bleak. The aim of this report is to trigger the development of potential 'hard' policy options for tackling obesity, and thus prevent the escalating prevalence of chronic diseases in Malaysia.

We are grateful to the eight speakers for providing the background papers and the contribution of 28 stakeholders comprising seven related Ministries, five Professional institutions, three Academia and one from the Industry. A special thanks to Ms Rasyedah (Post-graduate Student from the School of Health and Social Development, Deakin University, Australia) whose tireless efforts have given substance to the report presented here and the Academy of Sciences Malaysia for the funding and secretarial support.

Having identified and prioritized the list of food policy options, the next crucial step is to propose them to the relevant government sectors. Further refinement of selected policy food options will focus on cost-effectiveness and impact towards population's health using best available evidence.

We are hopeful that we will continue to receive full co-operation from the stakeholders to contribute complimentary actions in a coherent manner to help keep Malaysians healthy.

Prof Dr Mohd Ismail Noor, FASc., FIUNS
Chairman
ASM Task Force on Obesity

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EXECUTIVE SUMMARY

In Malaysia, the government have introduced 'soft policies' approach such as Healthy life style programmes and campaigns as means to curb obesity. Judging from the escalation in prevalence of overweight and obesity over the last few decades, it's impact is questionable. 'Hard policies', such as regulations or fiscal policies (e.g. imposing a tax, removal of subsidies), may be used as an intervention to combat obesity in Malaysia. It is largely known that many of the areas of concern, fall outside the Ministry of Health's jurisdiction but are within other Ministries such as Trade, Agriculture, Education and Consumerism. Various tools were employed to identify and assess food policy options to reduce obesity in Malaysia. Existing tools, such as policy mapping grids and scoring tools were utilised to identify potential policy options from a review of current plans and strategies, as well as to assess the policy options in terms of feasibility, potential impact and side effects.

The participatory process adopted was successful in eliciting responses from the stakeholders on the potential food policy options. The key highlights derived were:

- Rapid escalation of obesity and diabetes, which will blow out Malaysia's health budget.
- It shows no sign of abating despite the awareness programmes, self-regulation by industry and other soft policy approaches.
- We need to consider stepping up to 'harder' and more effective policies.
- Enormous opportunity costs from subsidising the food which are contributing to obesity (sugar and palm oil) creating a triple cost for the government — paying for diabetes 'causes', lost productivity and treatments.
- Many policies to choose from, the aim of this Workshop was to undertake a priority-setting process to identify the more promising ones to recommend.
- Top ranked interventions included the following: Healthy food service policies in public institutions, especially schools; standards to limit fat and/or sugar content of processed foods and serving sizes for fast food meals; clearer front-of-pack labelling like traffic lights, and banning unhealthy food advertising to children on television.

- The immediate cost-saving policy options of removing subsidies on palm oil and sugar did not score highly because they were presumed to be politically unfeasible (their rankings improved when analysed without the 'political feasibility' domain).

- Subsidies and greater access for fruit and vegetables was also favoured, especially when analyses excluded the 'political feasibility' domain.

RECOMMENDATIONS

1. The government should recognise the seriousness of obesity and related health threat of being overweight to the well-being of Malaysians and its impact on the economy and nation budgets and **make the decision to take strong action** using multiple policy tools (including the 'hard' tools of regulation and fiscal policies) across the several relevant ministries.

2. The Ministry of Health's efforts in implementing **healthy food policies** throughout all public institutions including schools, government ministries and agencies should be fully supported by all relevant partners.

3. The Ministry of Health should strive towards setting up **nutrient targets and standards** for food composition and work with the food industry to reformulate processed foods to become healthier.

4. The Ministry of Health should develop an evidence-informed, clear, interpretive, easily understood, front-of-pack nutrition labels (such as the traffic light system being implemented in the UK).

5. The Ministry of Health should continue to work with other relevant ministries to develop statutory regulations to restrict the marketing of unhealthy foods to children, predominantly on television, but also through other media.

6. The Treasury should revise food fiscal policies so that they promote, not undermine health, and consider the removal of subsides on palm oil and sugar and use the savings to support strategies to increase fruit and vegetable consumption.

The Taskforce hopes that this report, the first of it's kind in looking at food policy options and will spur government into action, in order to reduce the prevalence of obesity in the country.

INTRODUCTION AND BACKGROUND

Obesity has doubled over the past decade in adult Malaysian from 21% to 43% (1996–2006) (Lim *et al.* 2000; Ministry of Health Malaysia, 2008), high in adolescent (19%) (Poh *et al.* 2003) and children (16.4%) (Ismail *et al.* 2009). The escalation of obesity, once thought to be an urban phenomenon, has now spread to rural population at an alarming rate. As Malaysia proceeds rapidly towards a developed economy status, the health of its population will probably continue to deteriorate (Ismail *et al.* 2002). Obesity is closely related to the major causes of death in Malaysia, including type 2 diabetes mellitus, cardiovascular diseases and certain types of cancers. It is largely known that obesity substantially increase healthcare cost as well as reducing life expectancies. The government, in particular Ministry of Health Malaysia and related professional bodies are fully aware of this problem. In 2005, the Malaysian Association for the study of obesity published a document on the strategy for the prevention of obesity (MASO 2005). However, efforts to address the situation thus far have failed to meet the desired effect judging from the rising trend of obesity in the country over the last few decades.

In view of the above, the Academy of Sciences Malaysia (ASM) had set up an Obesity Task Force to look at potential policy options to combat obesity in Malaysia. The objectives of the task force are:

1. To create and maintain an effective knowledge exchange system between individuals and organizations working in obesity prevention;

2. To articulate the policy directions needed for obesity prevention and inspire their translation into policy, research and practice;

3. To organize workshops to identify and assess obesity prevention policy options;

4. To model potential policy interventions to reduce obesity in Malaysia in terms of cost-effectiveness and health benefits; and

5. To advocate for effective, evidence-informed policy actions for obesity prevention at national level.

The focus is to look at 'hard policies' such as regulations or fiscal policies (e.g. tax on unhealthy foods, removal of subsidies) which can be used as an intervention tool to reduce obesity.

It is important to note that for obesity prevention, many of the policy areas concerned fall outside the Health Ministry's jurisdiction, but are also within other Ministries such as Trade, Agriculture and Consumerism, to name a few. Therefore, a comprehensive and coherent approach involving multi-sectoral stakeholders is urgently needed to identify and prioritize policy options that can be recommended to the government in an effort to combat obesity in Malaysia (*Figure 1*). Realizing this dire need, the ASM task force organized a two-day stakeholder workshop on *Prioritizing Policy Options To Prevent Obesity* held on 9 – 10 February 2012. The aim of the workshop's was to specifically focus on assessing policy options that may help improve dietary habits of Malaysian population.

This Report presents the findings from the two-day stakeholder Workshop. Summaries of presentations from key stakeholders are given and a prioritized list of obesity prevention policy options is laid out for further discussion. Reversing the epidemic should be the main agenda for decision-makers while research is urgently needed to identify and analyse potential policy solutions. Hence, it is of utmost importance that the initial findings of this Workshop be shared with the government in an effort to help reduce the prevalence of obesity in Malaysia.

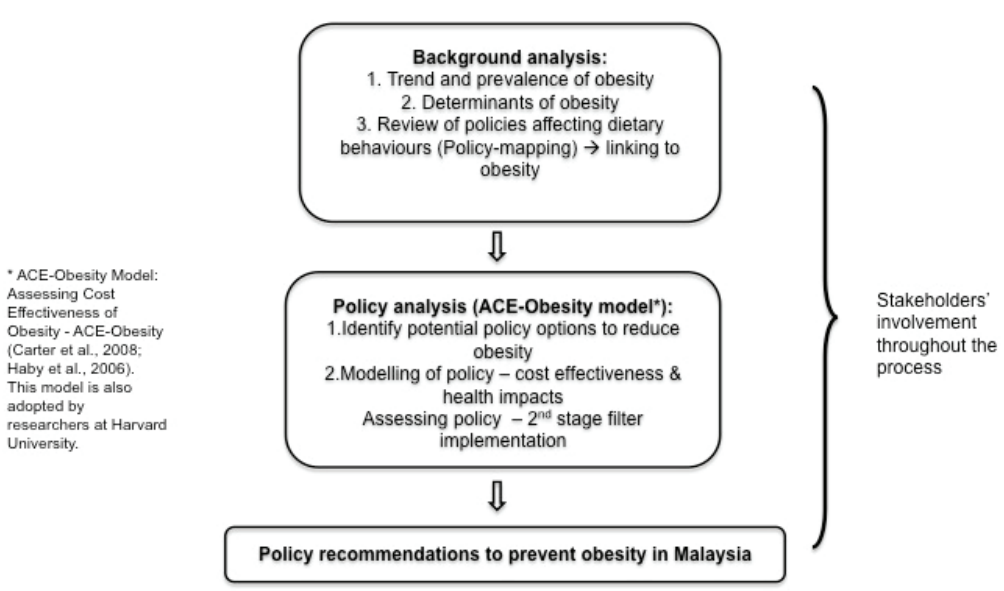


Figure 1. Systematic approach to setting priorities for obesity prevention policies in Malaysia (Adapted from Rasyedah et al. 2010).

WORKSHOP OVERVIEW

The objectives of the Workshop are:

1. To specify a list of food policy options to reduce obesity in Malaysia
2. To assess the potential impact and feasibility of food policy options to reduce obesity in Malaysia; and
3. To prioritize food policy options to reduce obesity in Malaysia.

The Participants of the Workshop

Participants were a selected group of stakeholders that were identified based on their involvement in policy-making pertaining to the food environment. Others were selected based on their expertise in the public health, nutrition and obesity prevention. The stakeholders were from several Ministries, non-governmental organisations (NGOs), academia/research institutes and industry. As stipulated in the *Global Strategy on Diet, Physical Activity and Health*, developed by World Health Organization (2004) — a combined, collaborative approach is required to effectively address and change diet and physical activity habits. To ensure effective strategies are implemented, it is essential that all relevant stakeholders be engaged — from the local to global level and from both the public and private sectors. *Appendix 1* shows the list of various stakeholders who participated in the Workshop.

Workshop Process

The Workshop was divided into three main sessions. In the first session, stakeholders from the relevant ministries presented the current policies and plans/strategies that affect food environment. These presentations provided background to update other participants on the on-going programmes and more importantly, as to why certain policies are enacted and what do the policies served. Question and answer sessions were allocated in every presentation, and these sessions were helpful in clarifying certain issues and problems within the respective Ministries. The summaries and key discussions arising from the presentations are found in this Report.

In the second session, the stakeholders were required to review, discuss and agree on the policy options list that has been prepared by the ASM Task Force. Key references used by the Task Force include several documents outlined by Ministry of Health, Malaysia in improving dietary habits and preventing obesity. A consensus was achieved on each of the policy options prior to further deliberations by the stakeholders.

In the third session, the stakeholders were asked to assess the feasibility, impact and side effects of each policy options that have been agreed upon. Tools that were used were developed by Deakin University, Australia (Sacks, Swinburn & Lawrence 2009; Snowdon e*t al*. 2010) and adapted to suit the Malaysian context (*Appendix 2*).

OBESITY IN MALAYSIA AND CURRENT POLICIES/PLANS AFFECTING FOOD ENVIRONMENT

Prior to assessing the policy options, eight papers were presented to provide background on the problems of obesity in Malaysia, preventive measures taken to curb obesity and current policies that may affect the food environment which eventually affect the energy intake of the population. This section provides the summary of all the presentations.

Paper 1. Obesity in Malaysia: Why the Concern?

Speaker: Prof Mohd Ismail Noor, Chairman, Obesity Task Force, Academy of Sciences Malaysia.

He presented the obesity scenario in Malaysia; mentioned what causes it, why there was the urgent need to curb obesity and why a policy was needed as a preventive measure in combating this epidemic.

The prevalence of overweight and obesity in adults had doubled over the past decade and it affects urban as well as rural areas and across all socio-economic groups in Malaysia (*Figure 2a*). The trend in schoolchildren (aged 6–12 years) revealed that between the years 2001 and 2008, the prevalence of overweight and obesity had increased from 20.7% (1 in 5) to 26.1% or 1 in 4 children were affected (*Figure 2b*).

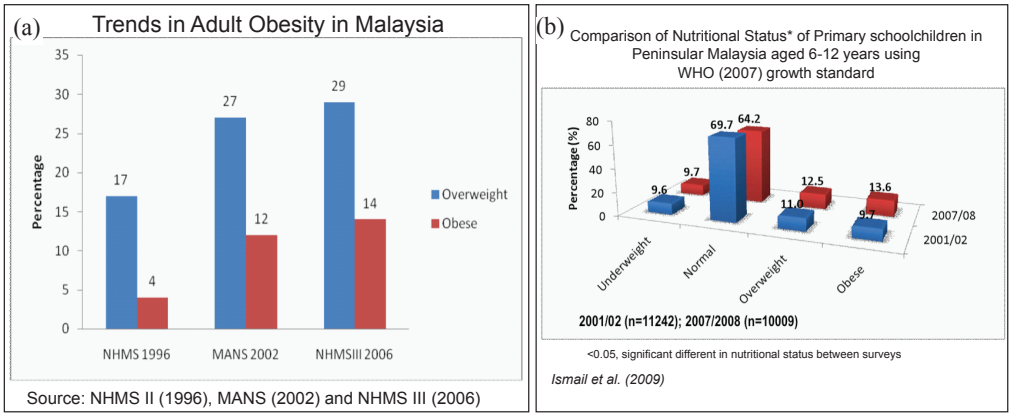


Figure 2. Trends in obesity (a) and comparison of nutritional status (b).

Changes associated with obesity in Malaysia

– The accelerated phase of industrialization and urbanization in recent decades has inevitably brought changes in the lifestyle of Malaysian.

– Changes in dietary habits and sedentary lifestyle have been associated with the increasing prevalence of obesity irrespective of age, ethnic and social status.

– The escalation of nutrition-related chronic degenerative diseases, once an urban phenomenon, has now spread to rural population at an alarming rate.

What is driving the obesity trend?

– As according to Pollan (2006) in his book *The Omnivore's Dilemma* — "When food is abundant and cheap, people will eat more of it and get fat" (p102).

– Food is massively produced and convenience plays a major role, in combination with falling prices and the mushrooming of fast food concentrations (OECD 2010).

– Malaysian fat and sugar intake increased by 80% and 33% respectively, from the early 1960s (Data from FAO 2005, CFNI and recent national surveys: *Figure 3*).

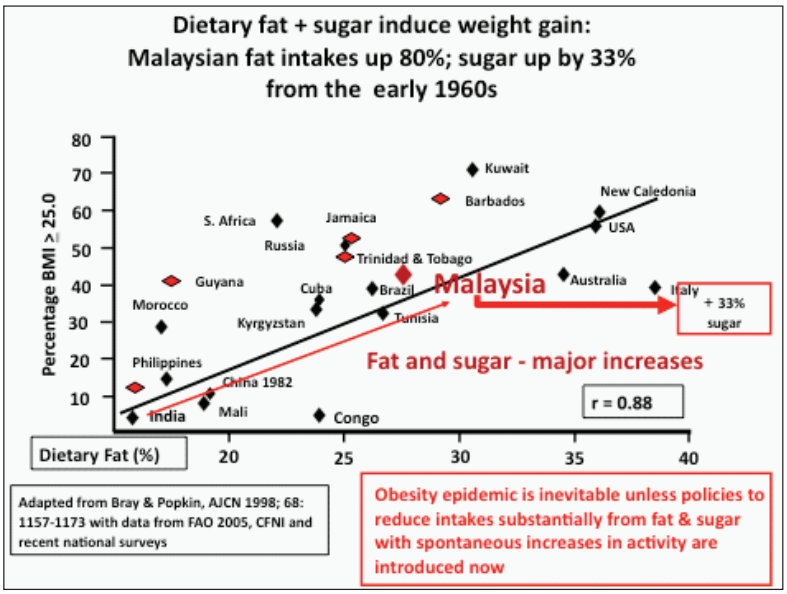


Figure 3. Dietry fat and sugar induced weight gain.

Why the concern?

– Malaysians have a sedentary lifestyle and energy costs (kcal/min) of habitual activities are lower compared to Caucasians.

– Predictive equations (FAO/WHO/UNU 1985) over estimates BMR of adults and adolescents between 9% – 13% and 1% – 10%, respectively.

– In most studies, Total Daily Energy Expenditure (TDEE) was found to be lower than the current Recommended Nutrient Intake (RNI) for energy.

– With food available almost around the clock (especially in urban areas) ALL factors above add up to be a 'recipe for disaster' for Malaysians.

– Obesity adds to the burden of health care costs, directly and indirectly. In the USA, billions of dollars have been estimated as the annual direct costs of diseases related to high Body Mass Index (BMI).

Why policy is needed to curb obesity in Malaysia?

– Obesity epidemic is inevitable unless policies to substantially reduce intake of fat and sugar with increase in physical activity are introduced right now. Some countries have already adopted policy measures such as tax on sugars or fat as means to prevent obesity.

– However in Malaysia, the government prefers the 'soft policies' approach such as programme and campaigns as means to curb obesity. This approach has relatively weak effects, especially if they are considered as the main interventions (Milio 1990).

– **'Hard' policies** such as regulations or fiscal policies (e.g. tax on unhealthy food) may reduce deaths from obesity related diseases (Nnoaham *et al.* 2009; Smed Jensen & Denver 2005). Furthermore, it is shown to be a cost-saving intervention to prevent obesity in modelling studies (Gortmaker *et al.* 2011).

– Comprehensive approaches involving multi-sectoral stakeholders are needed (James 2008) and it is a 'win-win' situation for both policy makers and researchers involved in this policy area (Campbell *et al.* 2009).

– In view of the increasing trend, it is becoming clear that policy makers have a hard battle in their hand against the food industry. For the sake of the future generation, the time to act is now. The longer the action is taken, the harder it will get to combat obesity.

– The International Obesity Task Force (IOTF) stated that obesity prevention is a long-term investment, which reduces the burden of disease for individuals and families, reduces health care costs to the taxpayer, and increases workforce productivity.

Paper 2. Efforts to Curb Obesity in Malaysia

Speaker: Puan Rokiah Don, Ministry of Health Malaysia (MOH).

She is the Director of Nutrition Division, MOH. Her paper highlighted strategic plans and programmes from the Ministry in combating the obesity pandemic.

Summary:

The presentation touched on several programmes that have been implemented to combat obesity, under the banner of healthy eating as stipulated in the National Nutrition Policy of Malaysia (2005) and National Plan of Action for Nutrition of Malaysia (2006–2015). The programmes encompassed all the life stages and settings (schools, institutions, and workplace).

The healthy eating component have been introduced in the healthy lifestyle campaign by the ministry since 1997, and been making a strong presence since. In 1998, the less is more campaign was introduced to reduce the sugar intake in the Malaysian population. It was geared towards food stalls/hawkers, restaurants and caterers to reduce sugar in their food preparation. In responding to the increasing prevalence of obesity and diabetes for the past decade, the reduce sugar intake campaign was re-launched in 2010, that targeted more to individuals and households. The campaign also targeted food operators and to take it to a another level, the ministry had organised a series of dialogue with the food industries to reduce sugar in soft drinks and beverages, biscuits and baked products, dairy and dairy products, cereals and cereal based products and canned products.

More recently, a dialogue between the MOH and representatives from the food and beverage industries to attain their commitment to curb non-communicable diseases in

Malaysia by increasing the production and promotion of healthier food choices, playing an active role in smart multi-sectoral partnership and to be involved in prevention and control of non-communicable diseases in Malaysia.

Conclusion:

Continuous support and co-operation from other ministries are needed to achieve the strategies that have been well planned. This may be difficult to achieve as different ministries may have different agenda, but there has always been a consistent stand towards improving the health of the population. Support from the utmost top level of other ministries is important for this multi-sectoral collaboration to curb obesity in Malaysia.

Paper 3. Sugar Supply in Malaysia: Current Scenario

Speaker: Puan Norison Ramli, Ministry of Domestic Trade, Cooperative and Consumerism.

She is the Director of Standards Consumerism Division, Ministry of Domestic Trade, Cooperative and Consumerism. In her presentation, she touched on the sugar supply and subsidy.

Summary:

Sugar price and supply is controlled under the *Price Control Act 1946* and *Food Supply Act 1961*. This is to ensure the sufficient supply of sugar at a reasonable price. However, the Malaysian government introduced the sugar subsidy in 2009 to counteract the increase in price of raw sugar globally. In that year, the price of raw sugar was RM2.20/kg (USD0.284/lb), compared to the locked price which the government has decided through long-term contract (LTC) of RM1.35/kg (USD0.175/lb). With this increase, the costs (processing, distribution and profit margins to refineries) of refining sugars locally also increased. This cost the government RM720 million in sugar subsidies (RM0.60/kg for 1.2 million metric tonne of sugar) to maintain the retail price of refined white sugar at RM1.45/kg.

The subsidy is passed on to consumers and industries. The objective is to ensure consumers and industries enjoy sugar at an affordable price, thereby cushioning the impact of high world prices on consumers and ensuring that there is no pass through and that the consumer price index is maintained at a manageable level.

From *Table 1* it is evident that the price of sugar in Malaysia is the lowest among the countries in South East Asia.

TABLE 1. PRICE OF SUGAR: SOUTH EAST ASIA

Price (RM)	Malaysia	Indonesia	Singapore	Thailand	Philippines
Sugar (1 kg)	2.30	3.80	3.61	2.31	4.50

The cheap price of sugar leads to overconsumption in the population. According to the Malaysian Adult Nutrition Survey conducted by Ministry of Health (2002/2003), added refined white sugar intake was 21 g plus 30 g of sweetened condensed milk intake (Norimah *et al*. 2008). Besides contributing to the energy intake of the population, high sugar consumption also increases the risk of type 2 diabetes.

Conclusion:

Removing/reducing sugar subsidy is a highly potential tool to curb obesity. Although government has been gradually reducing sugar subsidy, total removal is not favourable as it might burden the consumers. Further evidence is needed to support government's decision in totally removing the sugar subsidy.

Paper 4. Cooking Oil Subsidy

Speaker: Mr Aknan Ehtook, Ministry of Plantation Industries and Commodities.

He is the Secretary of the Palm Oil and Sago Industries Division. His Division is responsible in the implementation of cooking oil subsidy scheme.

Key points:

1. Cooking oil subsidy is meant only for household use. Cooking oil subsidy is subjected to leakages and abuse especially periodical consumption surges during festive seasons.

2. Cooking Oil Subsidy Bill — Currently it cost the government about RM1.3 billion in subsidizing cooking oil.

3. Removal of subsidies: Minimal impact to household (RM1 change per kg = RM1.50 change per month only (assuming total edible oils and fats consumed of 1.5 kg a month). Even with the abuse of subsidized cooking oil by restaurants and hawkers, the impact on the top eight favourite Malaysian food is minimal.

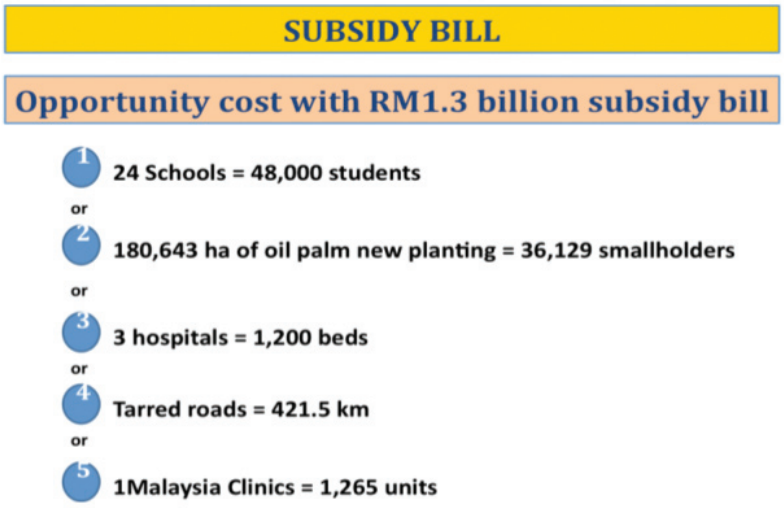
4. Cooking oil price was fixed in 1997. When the subsidy was introduced in 2007, it was only for the cooking oil (with no subsidies going to transport costs, bottling costs, operating costs etc.).

5. Assuming that we continue to pay the subsidies, the subsidized cooking oil manufacturers will potentially suffer from negative profit margin by 2015 due to fixed cooking oil price. Cooking oil price will still have to go up.

6. If the government remove cooking oil subsidies overnight, this will be equal to consumers pay additional RM0.09 per day, RM2.70 per month, or RM32.85 per year.

7. To the Government, the RM1.2645 billion per annum saved can be used to build schools, roads and hospitals or to develop poverty eradication programme such as the palm oil new planting scheme that will improve the lives of 36 129 people per annum as shown in the figure below in *Table 2*.

TABLE 2. SUBSIDY BILL AND OPPORTUNITY COST



Conclusion:

Palm oil is an important commodity for the Malaysian government. However, the consumption of palm cooking oil has surged in the past years, and cooking oil subsidies further making it as a cheap source of fat. Cheap cooking oil will lead to high consumption, contributing to increase energy intake. This may lead to increment of obesity prevalence in the country. Hence, removal of palm oil cooking subsidy is suggested to alleviate obesity pandemic in Malaysia and at the same time provide the opportunity for the government to develop other key areas as shown above.

Paper 5. Regulations Pertaining Food and Beverages Advertising in Media

Speaker: Mr Ahmad Nasim Mohd Sidek, Ministry of Information, Communication And Culture (KPKK).

He is the Principal Assistant Director from the Policy and Strategic Planning Division, Ministry of Information Communications and Culture. The ministry provides guidelines on advertisements, including advertisements about food and beverages, which may influence consumers' decision in the purchasing of food and will affect eating behaviours.

Summary:

The national television and radio agency or Radio Television Malaysia (RTM) has provided guidelines with regards to food and drinks advertisement as below:

1. All advertisement on food and drinks must show the necessity of a balance diet

2. Advertisement containing claims must obtain prior approval from the Ministry of Health (Food Safety and Quality Division)

KPKK's jurisdiction only on electronic media under *Communication and Multimedia Act 1998* for every private company and Radio Television Malaysia (RTM) broadcast guidelines specifically for RTM.

However, every advertisement either print, electronic, web or new media must comply with the requirement in the *Food Act 1983* and *Food Regulations 1985* from the MOH.

Although the guideline stated the importance to state food advertised must be a balanced diet, it does not deter fast food companies spending some RM61.7 million in advertising in 2010.

Issues arising:

MOH has been mulling over the idea of banning fast food advertisement, of which had caused backlashes from the industries. Self-regulations have been imposed under the monitoring of Association of Accredited Advertising Agents Malaysia or 4As. The fast food industry spent RM282 million last year in advertisement which is 67% of total advertisement expenditure. Total banning of fast food advertisement might not be feasible. As such, restricting fast food advertisement might be a better solution. However, as pointed out by the presenter, the more important solution is to use the media in promoting healthy behaviours.

Paper 6. Healthy Eating in School Implementation Guidelines

Speaker: Mr Cyril Christopher Singham, Ministry of Education (MOE).

He is the Senior Principal Assistant Director from the Health Intervention and Hostel Management Sector, MOE. His sector is responsible in developing guidelines for healthy eating in schools and a main collaborator with MOH especially in inculcating good healthy behaviours among schoolchildren.

Key points:

This guideline consists of two important chapters:

– Chapter 1: Guideline in the Weight Management of Schoolchildren
– Chapter 2: Guideline in Selling of Food and Beverages at School Canteens.

Guideline in the Weight Management of School Children

The objectives of this guideline are to:

1. Describe the methods in recording BMI of children into the Students Health Record (SHR) book.

2. Describe the referral method of those students who are in the overweight, obese or underweight category to the District's Health Office or Government Health Clinics.

What the school needs to do according to this guideline?

1. To take the student's weight and height measurements twice a year and record it into RKM.

2. To refer those who are having weight problems either overweight, obese or underweight category to the District's Health Office or Government Health Clinics.

3. To inform the parents of students of their child's BMI status during school's open day.

4. To provide the weighing scale and height measurement tools that are suitable as per specifications. The tools must be regularly calibrated and maintained.

Guideline in Selling of Food and Beverages at School Canteens

The objectives of this guideline are to:

1. Develop a list of food and beverages that can be sold, not encouraged to be sold and prohibited.

2. Provide information on how to put up the calorie content of food and beverages at the school canteen.

3. Underline the methods to monitor the selling of food and beverages at the school canteen.

– Food and beverages that are **prohibited** to be sold at school canteens

1. Food and beverages that are not in accordance as per *Food Regulations 1985*:
   a. Expired food
   b. Toy-like food product or foods that are sold together with toys, rings, balloons etc.

2. Sweets and chocolates.

3. Preserved food, whether it is sour, salty or sweet, fresh or dried such as soured plums, pickled mangoes, pickled orange skins or pickled onion.

4. Food and beverages with artificial flavour or colourings, except for flavoured milk.

5. Alcoholic beverages or food with alcohol in it.

– Food and beverages that are not encouraged to be sold at school canteens:

1. Instant noodles
2. Ice-cream and other ice confections
3. Coffee and tea
4. Carbonated drinks
5. Cream-filled food, or sugar coated food.
6. Processed food such as burgers, nuggets and sausages.

– Food that can be sold at school canteens are categorized and total of food items in that category are shown in *Table 3*.

TABLE 3. FOOD CATEGORIES AND TOTAL OF FOOD ITEMS.

No.	Categories	Total of food items
1	Rice	11
2	Noodles	40
3	Dishes for rice	56
4	Vegetable dishes	7
5	Breads	19
6	Traditional cakes	43
7	Fruits	19
8	Breakfast cereals	2
9	Snacks	13
10	Prepared drinks	11
11	Ready to eat drinks	6
	Total	227

– What the school needs to do?

1. To ensure that food and beverages that are sold in the school canteen are as per guideline.

2. To ensure that canteen operators display the calorie content of food and beverages sold.

3. Teachers who are on duty to monitor the food and beverages sold are required to fill in the monitoring form (KSS1/2011). This will be then sent to the supervisor in-charged of students' affairs at the District's Education Office.

4. To take administrative action if the school canteen operators failed to comply the guidelines.

    • District's Education Office responsibilities:
        1. To arrange briefing sessions of the implementation of the guidelines, together with the District's Health Office, at schools.

        2. To arrange Healthy Catering sessions, together with the District's Health Office, at schools especially those that are not meeting the requirements of the guidelines.

Conclusion:

Ministry of Education has been actively collaborating with MOH in making the school environment healthier. However, most of the rules and regulations are still in the form of guidelines, and no strict action could be imposed for those canteen operators who failed to comply. The ministry is also getting other ministries/government agencies to assist, especially in controlling food vendors who sold prohibited snacks outside school compound. It has been a long and hard battle, as the ministry is forever balancing the needs of the students and creating healthier school environment.

Paper 7. Operationalising Strategy 7 of the National Strategic Plan for Non-Communicable Diseases (NSP-NCD) — Policy and Regulatory Interventions

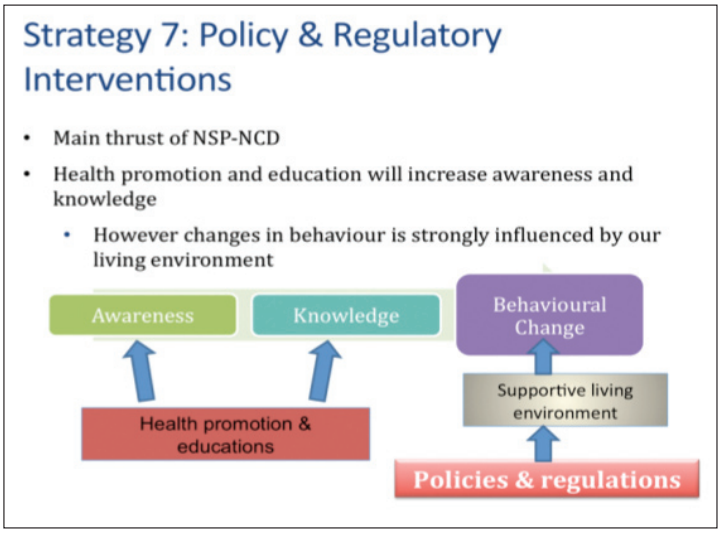
Speaker: Dr Feisul Idzwan Mustapha, MOH

He is the Senior Principal Assistant Director of the Disease Control Division. He is particularly in charge of the non-communicable diseases (NCD) unit and oversees all the plans and programmes with regards to NCD in Malaysia.

Summary:

Policy and regulatory interventions (*Table 4*) are one of the main strategies as stipulated in the NSP-NCD. Health promotion and education will increase awareness and knowledge. However, this is not enough for desirable behaviour changes, as it is strongly influenced by our living environment. Only policies and regulations can change the living environment to become more supportive towards obesity and NCD prevention.

TABLE 4. POLICY AND REGULATORY INTERVENTIONS



MOH is initiating the move to create a health-promoting environment in Malaysia, by working with many stakeholders outside the health sector. Economic, socio-cultural and public acceptances are need to be taken into account to help decrease the exposure to NCD risk factors. Some examples of current initiatives:

1. In 2012, the MOH is in the process for developing a Guideline on Marketing of food and beverages to children. During the discussion with food and beverages industries in December 2011, the Minister of Health has agreed to the implementation of self-regulation by industries, and failure to do so will result in statutory regulation being implemented. The industries also made their commitment to decrease salt, sugar and fat content in their products, and to suggest improvements in their product labeling.

2. On 18 January 2012, the Ministry of Education announced a new guideline for food and beverages sold in school canteens. One notable addition is the display of the calorie contents of food and beverages.

3. The MOH is also currently in the final process of discussions with the Ministry of Housing and Local Governments, together with the Local Authorities, in banning the sale of food and beverages by mobile vendors outside of school perimeters.

4. The MOH have produced several guidelines on healthy menus during meetings and installing healthy vending machines, these initiatives are expected to be introduced to other ministries and departments.

5. Anti-obesity Law for Malaysia is proposed for the year 2020 and MOH is developing the framework for this initiative.

6. Salt Reduction Strategy for Malaysia is on the way for the prevention of hypertension.

Data and figures are presented below:

– **Diabetes:** In 2008, based on the results of three National Health Morbidity Surveys (NHMS) - NHMS I (1986), NHMS II (1996) and NHMS III (2006), MOH projected that by year 2020, the prevalence of diabetes would be 15.3%, which translates to 3.2 million Malaysians age 18 years and above with elevated blood sugar levels. Worryingly, the results of the latest NHMS have shown that the prevalence of diabetes in 2011 was 15.2% or 2.6 million Malaysians age 18 years and above, nine years earlier than projected. With a revised projection, the prevalence of diabetes will be 21.6%, with an estimated 4.5 million Malaysians age 18 years and above by the year 2020 (*Figure 3*).

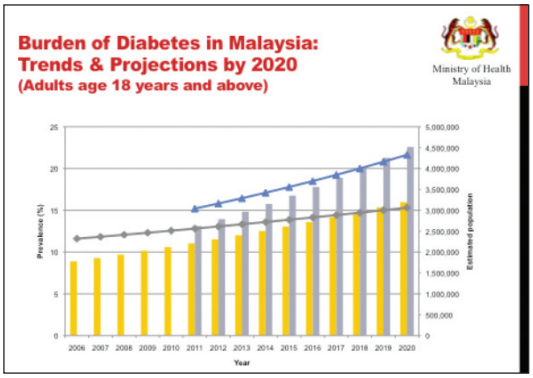


Figure 3. Scenario related to diabetes in Malaysia.

– **Hypertension:** The projection is that by 2011, the prevalence would have been 35.6% for Malaysian adults aged 18 years and above. However, the real figure in NHMS 2011 is slightly lower than projected, that is 32.7% or 5.8 million adult Malaysians suffer from elevated blood pressure. By revising the projection for the year 2020, it is anticipated that the prevalence of hypertension will be 35.8%, with an estimated 7.6 million Malaysians age 18 years and above (*Figure 4*).

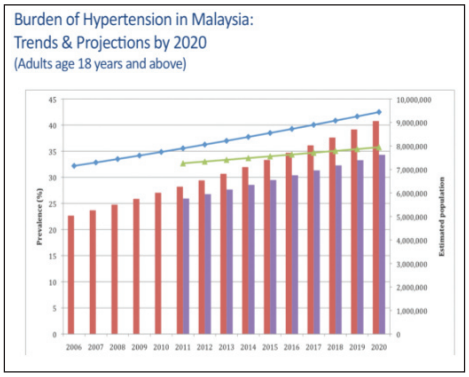


Figure 4. Scenario related to hypertension in Malaysia.

– **Hypercholesterolaemia:** The increase in prevalence in 2011 was much higher than projected i.e. 35.1% or 6.2 million adult Malaysians age 18 years and above. By revising the projection for the year 2020, the prevalence of hypercholesterolaemia will be 66.4%, with an estimated 14.2 million Malaysians age 18 years and above (*Figure 5*).

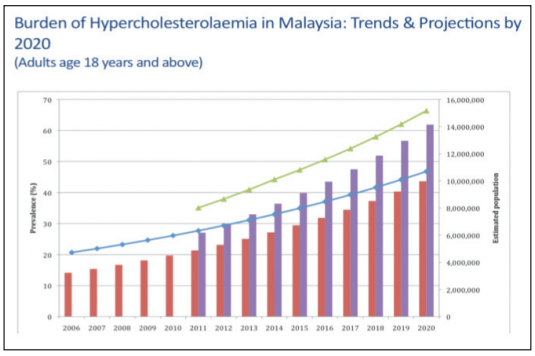


Figure 5. Scenario related to hypercholesterolaemia in Malaysia.

– **Obesity:** The NHMS 2011 reported a lower prevalence of 15.1% or an estimated 2.5 million adult Malaysians age 18 years and above compared to the projected prevalence of 16.2%. A revised projection suggested that by year 2020, the prevalence of obesity will be 16.8%, with an estimated 3.6 million Malaysians age 18 years and above (*Figure 6*).

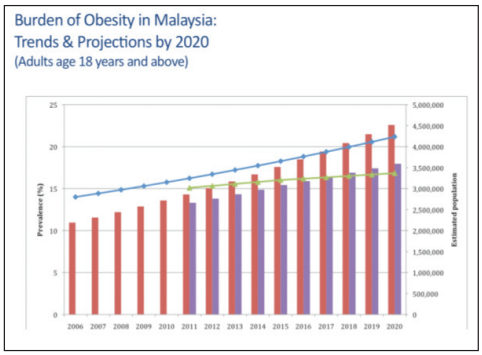


Figure 6. Scenario related to obesity in Malaysia.

– **Hospital admissions:** Looking at the number of MOH hospital admissions due to circulatory diseases between 2006 to 2010, it is projected that the number will continue to increase further to a projected 180,000 admissions by year 2020, an increase of 25%. For cancer, it is projected that admissions due to malignant neoplasms will increase by 60% to 120 000 admissions as compared to 2010.This does not take into account admissions due to infections (e.g. respiratory or septicaemia), which are common complications related to NCDs (*Figure 7*).

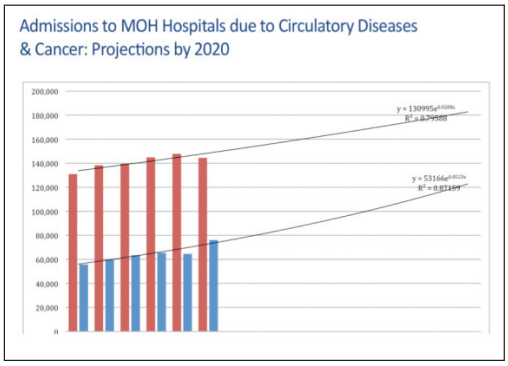


Figure 7. Scenario related to hospital admissions in Malaysia.

– In terms of deaths in MOH hospitals due to circulatory diseases and malignant neoplasms, the projection estimates an increase of 60% and 65% respectively in 2020 as compared to 2010. This figure however does not take into account deaths due to infections, which are common morbid complications due to diabetes and cardiovascular diseases (*Figure 8*).

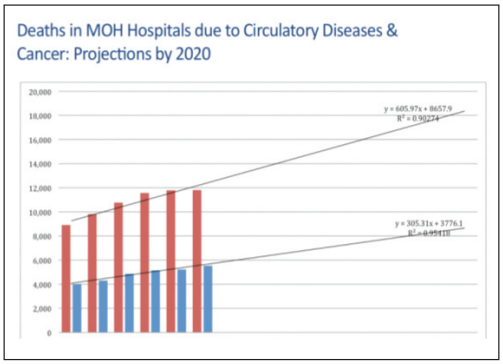


Figure 8. Scenario related to circulatory diseases and malignant neoplasms in Malaysia.

– **Renal disease:** The number of new dialysis patients continued to show a linear increase - from 2112 in 2001 to 4740 in 2009 and 4522 in 2010. The numbers are projected to double again by year 2020. Diabetes mellitus accounted for more than half of the primary renal disease of new dialysis patients since 2003. The percentage of patients with unknown primary renal disease remains high despite the increase in the number of nephrologists.

Conclusion:

Prevention is the key to combat the rise of obesity related diseases. Obesity is the door to NCDs such as diabetes, cancers and heart diseases, and individuals that are obese are also susceptible to complication arising from communicable diseases. Hence it is important to curb obesity using the means of policy instrument to change the living environment that will make it easier for Malaysians to have healthier choices.

Paper 8. National Agrofood Policy, 2011–2020

Speaker: En Muhammad Salimi Sajari, Ministry of Agriculture and Agro-Based Industry (MOA).

He is the Secretary of the Strategic Planning and International Division, MOA. His presentation touched on the National Agrofood Policy (NAP), 2011–2020 which will be a reference and guideline in the transformation of national agrofood industry.

National Agrofood Policy (NAP) (2011–2020):

1. To ensure adequate food security that is safe to eat
2. To make agrofood industry as a competitive and sustainable industry
3. To increase agro-based entrepreneur's level of income.

Issues in the development of domestic agrofood industry in depicted in *Table 5*.

TABLE 5. ISSUES IN THE DEVELOPMENT OF DOMESTIC AGROFOOD INDUSTRY

Challenges	Issues
Ensuring sufficient food supply	Limited land resources / idle land Lack of workforce Lack of infrastructure Incidence of disease and pest
Enhance the competitiveness and reduce trade deficit	Low competitiveness and productivity Less generation, transfer and commercialization of R&D Weak food supply chain
Controlling the Consumer Price Index	Increase in production cost
Increase and sustain the productivity	Practices along the value chain that are less environmentally friendly Waste of output from post-harvest to table The role of Farmer's Association by region
Strengthening the business environment	Low in private sector investment

Conclusion:

MOA must be seen as an important stakeholder in ensuring the supply of 'healthy' food domestically, in particular supplying fruits and vegetable. Issues such as idle land and middleman have to be addressed so that fruits, vegetable and also fish would be more available and affordable to the population. These foods may be a protective factor in the development of obesity and non-communicable diseases, as they provide more beneficial nutrients.

WORKSHOP FINDINGS: PRIORITIZING FOOD POLICY OPTIONS TO REDUCE OBESITY IN MALAYSIA

Identifying and Refining Policy Options to Reduce Obesity in Malaysia

Prior to the workshop, the Task Force reviewed several key documents on plans and strategies related to nutrition, obesity and non-communicable diseases published by the Ministry of Health and Malaysian Association for the Study of Obesity (MASO). Statements that were related to promotion of dietary behaviour to prevent obesity were extracted and populated into policy analysis grids (Sacks *et al.* 2009) (*Appendix 2a*). These statements were reworded into policy statements and were discussed in Task Force meetings to ensure it is relevant. Documents that were reviewed include:

1. National Plan of Action for Nutrition of Malaysia, NPANM (2006–2015), Ministry of Health, Malaysia.

2. National Strategic Plan for Non-Communicable Diseases, NSP-NCD (2011–2015), Ministry of Health, Malaysia.

3. National Multi-Sectoral Plan of Action for Prevention and Control of Obesity in Malaysia — draft (2010), Ministry of Health, Malaysia.

4. MASO Strategies for the Prevention of Obesity (2005)

The policy options were grouped under the six policy areas as suggested by the Taskforce includes: fiscal, primary production and imports, food processing, food marketing and information, food distribution and retail, and food service (*Table 6*). During the workshop, the policy options were discussed in detail and any issues related to them were resolved thus making sure they were robust and suitable for recommendation. The list were further refined and clarified for accuracy to avoid any repetitive statements. Suggestions were also been made for any current policies to be further developed into 'hard policies'. For example, there is a policy in place about self-regulation on food and beverages advertisement to children, and in this workshop, the policy was improved by including a clause to ban television advertisement of unhealthy food and beverages targeted towards children. A consensus was then achieved from all the stakeholders in the workshop on the final list of 28 policy options that were deem important in reducing obesity in Malaysia (*Table 6*).

TABLE 6. POTENTIAL POLICY OPTIONS TO REDUCE OBESITY IN MALAYSIA

Policy areas	Policy options (PO)
Fiscal	PO1: Remove subsidies on sugar, for both industries and households.
	PO2: Remove subsidies on cooking oil, for both industries and households.
	PO3: Introduce subsidies for fruits and vegetables.
	PO4: Introduce sales tax on sugar-sweetened beverages (SSBs) e.g. cordial, carbonated drinks.
	PO5: Introduce sales tax on sweetened creamer.
Primary production and imports	PO6: Incentives for farmers to grow local fruits and vegetables.
	PO7: Reducing import duty on fruits and vegetables.
	PO8: Increasing import duty on cooking oils and other fat sources (e.g. butter, ghee).
Food processing	PO9: Regulate maximum content of sugar and/or fat in processed food products and beverages.
	PO10: Incentives for small medium industries (SMIs) to improve nutrient content of food.
Food marketing/ information	PO11: Banning television advertising of foods/ beverages high in fat and/or high in sugar on free-to-air TV and on other channel's watched by children during children viewing hours and prime time viewing (e.g. between 6 am and 9 am, and 4 pm and 9 pm on weekdays; and between 6 am and 12 pm, and 4 pm and 9 pm on weekends and during school holidays); and on dedicated children's channel's at all time.
	PO12: Selective restrictions for marketing of unhealthy food/ beverages (high in fat and/or high in sugar) to children (under 16 years of age) in all forms (e.g. Internet, SMS/MMS/email, movie, magazines, children's events/sports, public places/transport).
	PO13: Introduce a nutrition signposting system (e.g. Healthy Choice tick, keyhole or traffic light labelling) as a front pack labelling to indicate food products with less fat, sugar and salt, and more whole grain and fibre.

TABLE 6 (CONT.). POTENTIAL POLICY OPTIONS TO REDUCE OBESITY IN MALAYSIA

Policy areas	Policy options (PO)
	PO14: Restrict the promotion of fast food meals in larger portions.
	PO15: Mandatory for all food outlets to display nutrition information about each product on menus, menu boards and drive-through boards at the point of sale, and on tags next to self-service cabinets and food displays.
	PO16: Mandatory for vending machine operators to display nutrition information about the products at the front of vending machines.
Food distribution and retail	PO17: Limiting the sales of high fat and high sugar food/ beverages in schools and learning institutions (canteen, cafeteria and co-operative shop).
	PO18: Ban food vendors within close proximity (e.g. <500 m) from schools.
	PO19: Density controls over new food outlets.
	PO20: Restrict business hours of all food outlets (e.g. to be closed at 10 pm.).
	PO21: Sell only healthy food/beverages in vending machines.
	PO22: Restricting the sale of high fat/sugar/salt content food in workplace canteens.
	PO23: Compulsory to have a fruit/salad stall at any food outlet in public institutions (e.g. universities, government departments, hospitals).
	PO24: Enhance distribution of fruits and vegetables through commodity-based co-operatives.*
	PO25: Make free clean drinking water accessible in schools and workplaces.*
Food service	PO26: Implementation of healthy food service policies in public institutions (e.g. schools, universities, government departments, hospitals).
	PO27: Mandatory for cafeteria operators and caterers to be trained and accredited on healthy food provisions and preparations.

** New policies that are added during the stakeholders' workshop.*

Assessing the Feasibility, Impact and Side Effects of Potential Policy Options to Reduce Obesity in Malaysia

To prioritize the policy options that were identified, stakeholders assessed the feasibility, impact and side effects of potential policy options to reduce obesity in Malaysia by:

1. Weighting the feasibility of policy options based on technical, political, cost and socio-cultural; and

2. Scoring the policy options in terms of feasibility, impact and side effects of policy options.

Tool 2 (*Appendix 2b*) was used in weighing the feasibility of policy options. To prompt the stakeholders in this assessment, this question was asked — "Generally, what do you consider the most important to least important feasible criteria in getting a policy option to be implemented?". Stakeholders then assigned 100% for the four feasibility criteria that were identified by the Taskforce: technical, political, cost and socio-cultural. After the end of this session, the weightings were tabulated and an average weighting for each criteria were derived. Stakeholders weighted political feasibility as most important (36%), followed by technical (23%), socio-cultural (21%) and cost (20%). The assessment of feasibility was valuable in identifying policy options which were most likely to be adopted and successfully implemented.

These weightings were then incorporated to assess each of the policy options in terms of feasibility for the next assessment process, which was to score each policy options individually in terms of feasibility, impact and side effects. In this assessment, tool 3 (*Appendix 2c*) was used and stakeholders were asked to score each of the identified policy options. Stakeholders were also asked to provide additional comments where applicable. Scoring was done in terms of feasibility, potential impact and potential side effects. The scoring values and definitions are presented below:

a. **Feasibility:** For every feasibility factor defined in the table, stakeholders were asked to score 1 to 4 on each policy options.

Explanation and definition for every feasibility factor:

Feasibility factor	**Technical:** Is this technically possible with existing expertise such as workforce, equipment and infrastructure availability?	Scoring: 1 (not possible) to 4 (very possible)
	Political: Will government be supportive of the approach? Is it in line with the government policy?	Scoring: 1 (not supportive) to 4 (very supportive)
	Cost: Affordability. How much will it cost (to establish) and maintain?	Scoring: 1 (not affordable) to 4 (very affordable)
	Socio-cultural: Will it be acceptable to the stakeholders and community? Is it acceptable in terms of cultural norms?	Scoring: 1 (not acceptable) to 4 (very acceptable)

b. **Potential impact** (meaning likelihood of impact × size of impact). Scoring: 1 (low impact) to 4 (high impact).

c. **Potential side effects** (on other health issues, or social, environmental or economic). Scoring: 1, very negative effect; 2, negative effect; 3, no effect; 4, positive effect; 5, very positive effect.

Results and Discussions on the Assessment of Policy Options

Table 7 presents the stakeholders assessment of the policy options. This assessment only includes the scorings of 22 stakeholders from the 27 stakeholders that were present in the workshop. All the stakeholders were required to do the assessment process in the workshop itself. However, some had to leave early for other commitments while others wish to discuss further with their respective organisations. The five non-responders were from Ministry of Domestic Trade, Co-operatives and Consumerism, Ministry of Education, Malaysian Palm Oil Board, Ministry of Agriculture and Federation of Malaysian Manufacturers. Efforts to get the non-responders after the workshop to respond was unsuccessful, hence the Taskforce had to exclude them after a stipulated time.

Ranking of policy options in the fiscal area.

The results revealed that policy options related to fiscal measures such as the removal of the sugar/cooking oil subsidies, or imposition of tax on sugar sweetened beverages and sweetened creamer were not highly scored in terms of feasibility by stakeholders

(ranked at 22nd, 21st, 25th and 24th places respectively). Comments from stakeholders were that the removal of sugar and cooking oil subsidies should be done gradually with setting up of datelines. The stakeholders also argued about the evidence of efficacy in imposing taxes to SSBs/sweetened creamer to reduce obesity which were not clear and lacking. There were recommendations of introducing food stamps/coupon system for the low-income group, and these groups need to be properly identified. The savings from this exercise should be use in other areas of health promotion. This present an area to be further explored by using simulation modelling of health impacts such as 'Assessing Cost Effectiveness of Obesity Prevention — ACE Obesity' method which was developed by Deakin University (Carter *et al.* 2008) and being adapted by several universities such as Harvard University. The sugar and fat intakes of Malaysians were found to be high and these contribute to overall calorie consumption that can lead to obesity (Norimah *et al.* 2008). Strong evidence based modelling of policy options are needed to back up the implementation of drastic measures using policy tools such as taxes, and prevent backlashes from industries especially (Smed, Jensen & Denver 2005). On the other hand, subsidies for fruits and vegetables were highly ranked (8th) by stakeholders.

Ranking of policy options in the primary production and import area.

The highest ranked policy option in this area was to give incentives for farmers to grow local fruits and vegetables (13th). Fruits and vegetables are nutritious food items that are recommended to be eaten more by the population, as stated in the Malaysian Dietary Guidelines (2010). The removal of subsidies from other commodities can be used to implement this so as to subsidise the price for consumers. Ironically, the stakeholders ranked reducing import duty on fruits and vegetables in the bottom three of the list (26th). The main concern expressed by the stakeholders was pesticide control regulation of the imported fruits and vegetables. The overall lowest ranked policy option (28th) was to increase import duty of cooking oils and other fat sources (e.g. butter, ghee). The stakeholders argued that increasing the import duty on cooking oils and fats might affect the intake of essential fatty acids.

Ranking of policy options in the food processing area.

Stakeholders ranked highly and supported the policy option to regulate maximum content of sugar and/or fat in processed food products and beverages (2nd). As presented by stakeholders from MOH, series of dialogue were being held with the food industries in getting their views if such policy could be implemented. In these dialogues, the food industries undertook the commitment to decrease the salt, sugar and fat content in their

products. This might explain the tendency of stakeholders in scoring this policy option highly. The other policy option in this area was to give incentives for SMIs to improve nutrient content of food, which was ranked at 18th place. There was not much issues around this policy option, however, a comprehensive mechanism need to be developed in identifying and assisting SMIs to implement this option in order to achieve the desired result and to maintain long term compliance.

More recently, WHO (2012) emphasized that food industry is the key stakeholder in helping the population to eat right, that is by selling less unhealthy food. Majority of the stakeholders in the workshop applauded the series of dialogues that were being held between MOH and the food industries, but more need to be done in terms of hard policies and not just self-regulatory.

Ranking of policy options in the food marketing and information area.

Introducing a nutrition signposting system such as 'Healthy Choice' tick or traffic light labelling was found to be the highest ranked policy options (5th). Several countries such as United Kingdom (Traffic Light Labelling) and Singapore (Healthy Choice Tick) are implementing this, and a modelling study by Sacks and colleagues (2011) found that it is cost-effective. Stakeholders viewed this positively, as it will guide the people to make healthier choices, and also act as incentives to the industries. However, it is important to establish clear-cut definitions and categories of food involved.

Next highly ranked policy options in this area were to restrict promotion of fast food meals in larger potions (6th) and banning television advertisements of food and beverage high in fat and/or sugar that target children (7th). Stakeholders felt that it is timely for fast food industries to stop promoting larger portion meals, and they viewed this as feasible, provided there will be a good monitoring system. As for banning TV ads that promote unhealthy food and beverages to children, they argued that the self-regulatory in place are not rigid enough, but banning might affect the revenue from advertisements. Nonetheless, the stakeholders still favoured this policy options to be implemented, but need to identify children and primetime viewing hours clearly.

Stakeholders agreed that nutrition information and calorie content of food sold should be displayed at all food outlets (19th) and at the front of vending machines (14th). Stakeholders felt that the feasibility for all food outlets to display nutrition information would be lower compared to labels front of vending machines. Analysing food sold in restaurants would be rather time consuming because of the variety and different

ingredients. Government may provide incentives for food outlet in carrying out this change and establish an agency that focus on analysing the nutrient content. On the other hand, food sold in vending machines are mostly processed food which already came with nutrient information on its packaging, so it would be easier to just display the same information at the front of vending machine. Importantly, by displaying the nutrient content in front of the vending machines, it will be easier for the consumers to select food that are healthier before purchasing.

Besides banning TV advertisement that promotes unhealthy food to children, another form of marketing that should be restricted, is the marketing of unhealthy food/ beverages (ranked 17th), which is high in fat and/or high in sugarto children (under 16 years of age) in all forms including Internet, SMS/MMS/email, movie, magazines, children's events/sports, public places/transport. There was a lively discussion regarding this policy option and the main concern was how to monitor such promotional activities in the Internet, short messaging systems (SMSs) and emails. Currently, there is no effort to monitor contents of advertisement in these forms of mass media. Hence, there is a need to establish a regulatory body to monitor and control such activities.

Ranking of policy options in the food distribution and retail area.

The highest ranking policy option in this area (4th) was limiting the sales of high fat/ sugar/salt food and beverages in schools and learning institutions. There is a guideline developed by MOH on foods that can or should not be sold in schools (as summarized in the presentation of policy in this workshop). However, the implementation is not monitored, and sales of discouraged food are still rampant. Hence, stakeholders felt strongly that a regulation should be implemented to curb this practice and encourage good eating behaviour among schoolchildren. As this will limit sales of SSBs, free drinking water should be made accessible in schools and also workplaces (ranked 9th). Banning of vendors near school compound will complement the effort to create healthier food environment in schools (ranked 11th).

Another policy issue that was lively discussed during the workshop was the problem in distribution of fruits and vegetables through middlemen that are affecting the distribution, which need a strong intervention from relevant agencies involved to enhance distribution of fruits and vegetables through commodity-based co-operatives, which was ranked at 12th place. This will cut the price interference by the middlemen and ensure fruits and vegetables at affordable cost. The stakeholders ranked compulsory to have a fruit/salad stall at any food outlet in public institutions (e.g. universities, government

departments, hospitals) at 16th place, which shows how important it is for the population to get their daily serving of fruits and vegetables, anywhere and at an affordable price. There exist the perennial issue of vacant land and illegal farming. The focus should be on food or agriculture plantation rather than commodity.

Working place present an ideal setting for a policy to be implemented, as most spend one-third of the day at work. It is important to have a policy to provide healthy eating options and to restrict sales of high fat/sugar/salt content food in workplace canteens. This policy option was deemed quite feasible and impactful by the stakeholders (ranked 15th). On the other hand, the stakeholders ranked lowly the policy option to sell only healthy food/beverages in vending machines (27th). The concern is that the R&D costs of these products, may not be cost effective in the long run.

Regarding the policies and/or regulations for food outlets, majority of stakeholders agreed on including all food outlets, not just the fast food outlets. The policy options around this were to restrict business hours of all food outlets (e.g. no 24 hours, to be closed at 10 pm) and to have density controls over location of new food outlets. These policy options however, were lower ranked by the stakeholders, at 20th and 23rd places respectively. They argued that the implementation would be hard to monitor and also the complexity of licensing.

Ranking of policy options in the food service area.

Overall, policy options in this area were highly ranked by stakeholders. For example, implementation of healthy food service policies in public institutions (e.g. schools, universities, government departments, hospitals) and mandatory for cafeteria operators/ caterers to be trained and accredited on healthy food provisions and preparations were ranked at 1st and 3rd places respectively. Currently, these are being implemented as programs, but yet to be made mandatory. This might explain the tendency of stakeholders in ranking them highly feasible as they felt the support is already there. These could be highly feasible, but the impact may not reach the whole population as only certain groups (i.e. schoolchildren, working population) would benefit from it.

Policy option that required every set meal to include fruits and vegetables was ranked at 10th place. In order for this to be successful, other policy options regarding fruits and vegetables (i.e. PO 3: Subsidies for fruits and vegetables and PO 6: Incentives for farmers to grow local fruits and vegetables) must be reviewed and implemented. This will ensure the supply at a manageable cost.

TABLE 7. RANKING OF POLICY OPTIONS

Overall rank	Policy options (PO)[1]	Policy area	Feasibility mean scores according to criteria (Weightings assigned)				Overall feasibility scores[2]	Impact	Side-effects	Overall total scores[3]
			Technical (23%)	Political (36%)	Cost (20%)	Socio-cultural (21%)				
1.	Healthy food service policies in public institutions (PO26)	Food service	3.25	3.43	2.86	3.38	3.26	3.62	4.24	11.12
2.	Maximum content of sugar and/or fat in processed food products and beverages (PO9)	Food processing	3.20	3.00	2.71	3.38	3.08	3.71	4.24	11.03
3.	Accreditation for healthy food provisions (PO27)	Food service	3.30	3.33	2.76	3.33	3.20	3.57	4.10	10.86
4.	Limit sales of unhealthy food/ beverages in schools and learning institutions (PO17)	Food distribution	3.25	3.14	2.76	3.19	3.10	3.71	3.95	10.76

TABLE 7 (CONT.). RANKING OF POLICY OPTIONS

Overall rank	Policy options (PO)[1]	Policy area	Feasibility mean scores according to criteria (Weightings assigned)				Overall feasibility scores[2]	Impact	Side-effects	Overall total scores[3]
			Technical (23%)	Political (36%)	Cost (20%)	Socio-cultural (21%)				
5.	Introduce a nutrition front pack labelling (PO13)	Food marketing/ information	3.10	3.05	2.90	3.29	3.09	3.48	4.10	10.66
6.	Restrict fast food meals in larger portions (PO14)	Food marketing/ information	3.35	3.14	3.24	3.29	3.24	3.48	3.76	10.48
7.	Banning television advertising of foods/beverages high in fat and/or high in sugar that aimed at children (PO11)	Food marketing/ information	3.00	2.95	2.81	3.33	3.03	3.52	3.90	10.46
8.	Subsidies for fruits and vegetables (PO3)	Fiscal	2.81	2.95	2.57	3.43	2.95	3.33	4.14	10.42

TABLE 7 (CONT.). RANKING OF POLICY OPTIONS

Overall rank	Policy options (PO)[1]	Policy area	Feasibility mean scores according to criteria (Weightings assigned)				Overall feasibility scores[2]	Impact	Side-effects	Overall total scores[3]
			Technical (23%)	Political (36%)	Cost (20%)	Socio-cultural (21%)				
9.	Free clean drinking water in schools and workplaces (PO25)	Food distribution	3.35	3.14	2.71	3.38	3.14	3.24	3.95	10.33
10.	Compulsory to include fruit and vegetables in every set meal (PO28)	Food service	3.35	3.10	2.81	3.10	3.11	3.19	4.00	10.30
11.	Ban food vendors near schools (PO18)	Food distribution/ retail	2.95	3.00	3.19	3.38	3.09	3.29	3.81	10.19
12.	Distribute fruit and vegetables through commodity-based co-operatives (PO24)	Food distribution/ retail	3.00	3.05	2.76	3.10	2.99	3.24	3.86	10.08

TABLE 7 (CONT.). RANKING OF POLICY OPTIONS

Overall rank	Policy options (PO)[1]	Policy area	Feasibility mean scores according to criteria (Weightings assigned)				Overall feasibility scores[2]	Impact	Side-effects	Overall total scores[3]
			Technical (23%)	Political (36%)	Cost (20%)	Socio-cultural (21%)				
13.	Incentives to grow local fruit and vegetable (PO6)	Primary production and imports	3.33	3.33	2.43	3.38	3.14	3.24	3.67	10.04
14.	Mandatory to display nutrition information at vending machines (PO16)	Food marketing/ information	3.15	3.14	2.38	3.29	3.02	3.19	3.81	10.02
15.	Restrict sales of high fat/sugar/salt content food in workplace Canteens (PO22)	Food distribution/ retail	2.85	2.95	2.81	2.71	2.83	3.43	3.71	9.97
16.	Fruit/salad stall at all food outlet in public institutions (PO23)	Food distribution/ retail	2.95	3.19	2.76	3.00	3.01	3.19	3.76	9.96

TABLE 7 (CONT.). RANKING OF POLICY OPTIONS

Overall rank	Policy options (PO)[1]	Policy area	Feasibility mean scores according to criteria (Weightings assigned)				Overall feasibility scores[2]	Impact	Side-effects	Overall total scores[3]
			Technical (23%)	Political (36%)	Cost (20%)	Socio-cultural (21%)				
17.	Restrict marketing of unhealthy food/beverages to children in all forms of media (PO12)	Food marketing/ information	2.75	2.57	2.86	3.33	2.94	3.14	3.81	9.90
18.	Incentives for SMIs to improve nutrient content (PO10)	Food processing	3.20	2.90	2.38	3.14	2.93	3.33	3.62	9.88
19.	Mandatory to display nutrition information on menus at food outlet (PO15)	Food marketing/ information	2.95	3.00	2.48	3.24	2.94	3.14	3.76	9.84
20.	Restrict business hours of all food outlets (PO20)	Food distribution/ retail	3.30	2.67	3.14	2.62	2.88	3.40	3.48	9.75

TABLE 7 (CONT.). RANKING OF POLICY OPTIONS

Overall rank	Policy options (PO)[1]	Policy area	Feasibility mean scores according to criteria (Weightings assigned)				Overall feasibility scores[2]	Impact	Side-effects	Overall total scores[3]
			Technical (23%)	Political (36%)	Cost (20%)	Socio-cultural (21%)				
21.	Remove cooking oil subsidies (PO2)	Fiscal	3.33	1.90	3.24	2.29	2.61	3.48	3.62	9.70
22.	Remove sugar subsidies (PO1)	Fiscal	3.33	1.86	3.43	2.29	2.63	3.48	3.57	9.68
23.	Density controls over new food outlets (PO19)	Food distribution/ retail	2.69	2.57	3.00	2.57	2.70	3.38	3.52	9.61
24.	Excise and/or sales tax on sweetened creamer (PO5)	Fiscal	2.81	2.29	3.19	2.48	2.64	3.33	3.52	9.50
25.	Excise and/or sales tax on SSBs (PO4)	Fiscal	2.67	2.19	3.05	2.29	2.51	3.29	3.62	9.41

TABLE 7 (CONT.). RANKING OF POLICY OPTIONS

Overall rank	Policy options (PO)[1]	Policy area	Feasibility mean scores according to criteria (Weightings assigned)				Overall feasibility scores[2]	Impact	Side-effects	Overall total scores[3]
			Technical (23%)	Political (36%)	Cost (20%)	Socio-cultural (21%)				
26.	Reduce import duty on fruit and vegetables (PO7)	Primary production and imports	2.90	2.62	2.81	3.14	2.82	2.90	3.57	9.30
27.	Healthy food/beverages only in vending machines (PO21)	Food distribution/ retail	3.05	3.00	2.62	2.71	2.85	2.86	3.57	9.28
28.	Increase import duty on cooking oils and other fat sources (PO8)	Primary production and imports	2.85	2.29	2.76	2.24	2.51	2.86	3.33	8.70

[1] The numbering in the bracket refers to the numbering of policy options based on *Table 1*: Potential policy options to reduce obesity in Malaysia.

Political Feasibility and Rankings of Policy Options

Table 8 shows the changes in ranking when the political weightings were excluded. Stakeholders representing the government agencies mentioned that some policy options were not politically feasible for various reasons. Hence, it may influence other stakeholders' assessment in the workshop that some policy options would be difficult to implement and they ranked it quite low. Political factors seem to be the hurdle in the feasibility of certain policy options, especially around the fiscal area. Once this 'hurdle' is removed by excluding the political weightings in this analysis, the ranking of some policy options changed considerably. Of interest, the ranking of policy options such as removing the subsidies for sugar/ cooking palm oil and distribution of fruits and vegetables through co-operatives have moved up more than five ranks.

This simple analysis may just prove how important government interventions are; especially in the implementation of fiscal policy options (subsidies, taxes) or in establishments that utilised government linked facilities (such as co-operatives). The Taskforce recognise the difficulties surrounding its implementation and are hopeful that the recommendation to push these potential policy options would be realized by the government in the effort to curb obesity.

TABLE 8. CHANGES IN RANKING — WITH AND WITHOUT POLITICAL WEIGHTING

Policy options (PO)	Rank with political weighting (Mean scores)	Rank without political weighting (Mean scores)
Healthy food service policies in public institutions (PO26)	1 (11.12)	10 (9.20) ↓
Maximum content of sugar and/or fat in processed food products and beverages (PO9)	2 (11.03)	1 (9.97) ↑
Accreditation for healthy food provisions (PO27)	3 (10.86)	12 (9.03) ↓
Limit sales of unhealthy food/ beverages in schools and learning institutions (PO17)	4 (10.76)	4 (9.68) =
Introduce a nutrition front pack labelling (PO13)	5 (10.66)	5 (9.58) =
Restrict fast food meals in larger portions (PO14)	6 (10.48)	8 (9.33) ↓
Banning television advertising of foods/beverages high in fat and/or high in sugar that aimed at children (PO11)	7 (10.46)	6 (9.41) ↑

TABLE 8 (CONT.). CHANGES IN RANKING — WITH AND WITHOUT POLITICAL WEIGHTING

Policy options (PO)	Rank with political weighting (Mean scores)	Rank without political weighting (Mean scores)
Subsidies for fruits and vegetables (PO3)	8 (10.42)	7 (9.37) ↑
Free clean drinking water in schools and workplaces (PO25)	9 (10.33)	3 (9.71) ↑
Compulsory to include fruit and vegetables in every set meal (PO28)	10 (10.30)	9 (9.22) ↑
Ban food vendors near schools (PO18)	11 (10.19)	11 (9.12) =
Distribute fruit and vegetables through commodity-based co-operatives (PO24)	12 (10.08)	2 (9.92) ↑
Incentives to grow local fruit and vegetable (PO6)	13 (10.04)	17 (8.89) ↓
Mandatory to display nutrition information at vending machines (PO16)	14 (10.02)	15 (8.94) ↓
Restrict sales of high fat/sugar/salt content food in workplace canteens (PO22)	15 (9.97)	16 (8.93) ↓
Fruit/salad stall at all food outlet in public institutions (PO23)	16 (9.96)	20 (8.83) ↓
Restrict marketing of unhealthy food/beverages to children in all forms of media (PO12)	17 (9.90)	18 (8.86) ↓
Incentives for SMIs to improve nutrient content (PO10)	18 (9.88)	19 (8.85) ↓
Mandatory to display nutrition information on menus at food outlet (PO15)	19 (9.84)	22 (8.80) ↓
Restrict business hours of all food outlets (PO20)	20 (9.75)	21 (8.81) ↓
Remove cooking oil subsidies (PO2)	21 (9.70)	13 (8.97) ↑
Remove sugar subsidies (PO1)	22 (9.68)	14 (8.96) ↑
Density controls over new food outlets (PO19)	23 (9.61)	23 (8.66) =

TABLE 8 (CONT.). CHANGES IN RANKING – WITH AND WITHOUT POLITICAL WEIGHTING

Policy options (PO)	Rank with political weighting (Mean scores)	Rank without political weighting (Mean scores)
Excise and/or sales tax on sweetened creamer (PO5)	24 (9.50)	24 (8.65) =
Excise and/or sales tax on SSBs (PO4)	25 (9.41)	25 (8.60) =
Reduce import duty on fruit and vegetables (PO7)	26 (9.30)	26 (8.40) =
Healthy food/beverages only in vending machines (PO21)	27 (9.28)	27 (8.22) =
Increase import duty on cooking oils and other fat sources (PO8)	28 (8.70)	28 (7.85) =

[1] The numbering in the bracket refers to the numbering of policy options based on *Table 1*: Potential policy options to reduce obesity in Malaysia.

Symbols "↓", "↑" or "=" indicates whether the ranking of policy option has moved up, moved down or stayed the same after removing the political feasibility weighting.

WORKSHOP EVALUATION

At the end of the two-days Workshop, stakeholders were asked to evaluate the Workshop process on the scale of 1 to 5 (1: Not really, 2: Slightly, 3: Somewhat, 4: Mostly, 5: Yes completely). This process was to gauge the stakeholders' understanding of the overall process and the importance of their contribution. *Table 9* is the outcome of this workshop evaluation.

TABLE 9. EVALUATION OF WORKSHOP PROCESS BY STAKEHOLDERS (MEAN SCORES)

Workshop process	Stakeholders' assessment* (Mean scores)
a. Do you feel that your views were incorporated/used?	3
b. Did you understand the process that you were going through?	4
c. Do you agree with the final outcomes?	4
d. Do you think you would be confident to follow this sort of process again in the future?	4
e. Would you be able to justify/explain the reasons behind the final list of policy recommendations to someone	4

*Based on the scale of 1 to 5 (1: Not really, 2; Slightly, 3; Somewhat, 4; Mostly, 5; Yes completely).

Overall, the stakeholders who participated in this workshop felt that they understood the process, agree on the list of policy options, confident to participate again in such policy process exercise and able to justify the reasons behind the final list of recommendations. These findings suggest that the process was easily understood and could be replicated in the future among stakeholders in prioritizing policies.

RECOMMENDATION: PUSHING FOR POLITICAL INTERVENTION TO CURB OBESITY IN MALAYSIA

Malaysia has recognised the need for national level action by developing nutrition plans and policies and also strategies for the prevention of obesity and non-communicable diseases (Ministry of Health Malaysia 2005, Ministry of Health Malaysia 2009, Malaysian Association for the Study of Obesity (MASO) 2005). To implement the strategies and plans that were developed, various programs and activities are being conducted to improve the overall health status of the population, including promoting the importance of healthy eating and active lifestyle (Ministry of Health Malaysia, 2008a). Nevertheless, these programs and activities generally fall into the 'soft' policy tool category (Milio 1990).

This may be one explanation why the dietary behaviours of the Malaysian population are not consistent with nutrition recommendations. For instance, food in the protein group such as meat, chicken, fish or seafood were consumed as high as 9 servings/day; sugar (21 g/day) and sweetened condensed milk (30 g/day) are highly consumed; and almost half of the population are physically inactive (43.7%) (Ministry of Health Malaysia 2008b; Ministry of Health Malaysia 2007). Policies, laws and regulations are often needed to drive the environmental factors (physical, economic, policy and socio-cultural) that will have a sustainable impact to reduce obesity (Swinburn 2008).

Without a strong and comprehensive policy intervention, the targets for improvement for obesity prevention as stipulated in the National Plan of Action for Nutrition Malaysia (*Table 10*) will not be achieved (Ministry of Health Malaysia 2006). In fact, the current situation is steadily increasing beyond the targets for improvement.

TABLE 10. INDICATORS FOR ACTION AND TARGETS FOR IMPROVEMENT FOR THE PREVENTION OF OBESITY

Indicators for action	Targets for improvement — prevalence by 2015
School children	
– To 12 years	Not more than 10%
– 13–18 years	Not more than 15%
Adult	
– Overweight	Not more than 30%
– Obese	Not more than 15%

*Adapted from Ministry of Health (2006).

It may seem that certain policy intervention might not be favourable, considering the current political climate and possible backlashes from food industries, but these are the most sustainable actions that the government can create in promoting healthier environment and supporting desirable behaviour change.

Obesity and obesity related diseases are largely preventable. Much had been learned, but now is the time to translate it into practice. This Report hopes to spur the government into action through these recommendations:

1. The government should recognise the seriousness of the obesity and related health threat of being overweight to the well-being of Malaysians and its impact on the economy and nation budgets and **make the decision to take strong action** using multiple policy tools (including the 'hard' tools of regulation and fiscal policies) across the several relevant ministries.

2. The Ministry of Health's efforts in implementing **healthy food policies** throughout all public institutions including schools, government ministries and agencies should be fully supported by all relevant partners.

3. The Ministry of Health should strive towards setting up **nutrient targets and standards** for food composition and work with the food industry to reformulate processed foods to become healthier.

4. The Ministry of Health should develop an evidence-informed, clear, interpretive, easily understood, **front-of-pack nutrition labels** (such as the traffic light system being implemented in the UK).

5. The Ministry of Health should continue to work with other relevant ministries to develop statutory regulations to **restrict the marketing of unhealthy foods to children**, predominantly on television, but also through other media.

6. The Treasury should revise **food fiscal policies** so that they promote, not undermine health, and consider the removal of subsides on palm oil and sugar and use the savings to support strategies to increase fruit and vegetable consumption.

SUMMARY

The process of prioritizing policy options by the ASM Task Force echoes the recommendation of WHO that appeals countries to develop policies in combating obesity, as they "do more to improve health outcomes and promote social cohesion than money alone". [1] However, it is a great challenge for the workshop organizers to get all the relevant stakeholders to realise that obesity prevention is not the responsibility of the Ministry of Health alone. It requires collaboration and partnership of several ministries, agencies and organizations relevant to our living environment.

In an ideal situation, a multi-sectoral workshop such as this needs the co-operation and commitment from the stakeholders. The stakeholders invited are senior officers who have restricted time due to tight work schedules. Hence, the scoring tools need to be simple and not time consuming in order to elicit better response.

The outcome of this workshop indicated that policy options related to fiscal measures such as the removal of the sugar subsidy, or imposition of a tax on sugar sweetened beverages were not highly scored in terms of feasibility by stakeholders. On the other hand, programs which are already in place, but yet to be regulated or made mandatory, such as the implementation of healthy food policies in institutions or training of food caterers, were deemed highly feasible. However, stakeholders realized the potential impact and positive effects of removing subsidies of sugar and cooking oil, as evident in their scoring of these criteria. The participatory process in this workshop was successful in eliciting responses from the stakeholders on the potential food policy options.

The next crucial step will be to propose the list of food policy options that have been identified and prioritized in this workshop to the relevant government ministries and agencies. Future activities include further assessment of specific food policy options through modelling exercise. In this exercise, the cost-effectiveness of the policy options and the impact towards population's health will be modelled using best available evidence. Evidence-based modelling will facilitate the government to enact certain policies as means to combat obesity and improve the health of the population.

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[1] Dr Margaret Chan, Director-General of WHO in her speech during the 62nd Session of the WHO Regional Committee for Europe, Malta, September 2012.

It is important to note that these food policy recommendations are not panacea to obesity. Nonetheless, having these policy implemented will default the living environment, meaning it will make healthier choices more available to individuals. This will undoubtedly help the population to change their behaviour for the better, and thus preventing obesity and its related co-morbidities.

SPECIAL ACKNOWLEDGEMENT

The ASM Task Force gratefully acknowledges the participants of this Workshop for committing their time and contribution in prioritizing the food policy options that we hope will move Malaysia forward in our efforts to reduce obesity.

Appendix 1. Workshop Participants/Stakeholders.

No.	Name	Organization
1	Prof Dr Mohd Ismail Noor	UniSZA/UiTM, Chairman, ASM Task Force/ Speaker
2	Pn Rokiah Don	Ministry of Health (Director, Nutrition Division)/Speaker
3	Pn Norison Ramli	Ministry of Domestic Trade, Co-Operatives & Consumerism (Standards Consumerism Division) /Speaker
4	Mr Aknan Ehtook	Ministry of Plantation, Industries & Commodities (Palm Oil & Sago Industries Division)/Speaker
5	Mr Ahmad Nasim Mohd Sidek	Ministry of Information, Communication & Culture (Policy & Strategic Planning Division)/Speaker
6	Mr Cyril Christopher SIngham	Ministry of Education (Health, Intervention & Hostel Management Sector)/Speaker
7	Mr Muhammad Salimi Sajiri	Ministry of Agriculture & Agro-Based Industries (Strategic Planning & International Division)/Speaker
8	Dr Feisul Idzwan Mustapha	Ministry of Health (Disease Control Division)/Speaker
9	Pn Rasyedah Ahmad Raqi	Deakin Univeristy & UKM/Taskforce member/Rapporteur
10	Dr Zawiah Hashim	Nutritionist/Rapporteur
11	Ms Indra Balaratnam	Malaysian Dietician's Association (MDA)/Representative
12	Prof Dr Norimah A. Karim	Nutrition Society of Malaysia (NSM)/Representative
13	Dr Hamid Jan Jan Mohamed	Malaysian Association for the Study of Obesity (MASO)/Representative
14	Pn Suraiza Abdullah	Federal of Malaysian Manufactures/Representative
15	Ms Yu Kin Len	Federation of Malaysian Consumers Associations (FOMCA)/Representative
16	Pn Hatijah Hashim	Consumers Association of Penang/Representative
17	Dr Kalanithi Nesaretnam	Malaysian Palm Oil Board (MPOB)/Representative
18	Mr Ahzairin Ahmad	Ministry of Housing and Local Government/Representative

Appendix 1 (CONT.). Workshop participants/Stakeholders.

No.	Name	Organization
19	Pn Noorul Aziha Muhammad	Ministry of Health (Food Safety)/Representative
20	Pn Zaitun Daud	Ministry of Health (Nutrition)/Representative
21	Assoc Prof Dr Mohd Rizal Abdul Manaf	UKM (Public Health)/Task Force Member
22	Prof Dr Poh Bee Koon	UKM (Nutrition)/Task Force Member
23	Dr Muhammad Yazid Jalaludin	UM (Paediatric)/Task Force Member
24	Dr Safarizah bt Arifen	Ministry of Health/DrPH Student
25	Dr Salmiah Baharudin	Ministry of Health/DrPH Student
26	Dr Suhaida Mohd Sidek	Ministry of Health/DrPH Student
27	Dr Hazlin Abu Bakar	Ministry of Health/DrPH Student
28	Dr Norsafinaz Mohamed	Ministry of Health/DrPH Student

Appendix 2. Tools Used in the Workshop to Identify and Assess Obesity Prevention Policies.

2A. TOOL 1 — POLICY MAPPING TOOL — TO IDENTIFY AND CATEGORIZE POTENTIAL POLICY OPTIONS ACCORDING TO POLICY AREAS

Policy area	Potential policy options *(examples)*
Fiscal	Reduce/remove subsidies on sugar, for both households and industries.
Primary production and imports	Incentives for farmers to grow local fruits and vegetables.
Food processing	Regulate maximum content of sugar and fat in processed food products.
Food marketing/information	Banning TV advertisement of food high in sugar and/or high in fat.
Food distribution and retail	Limiting the sales of high fat and high sugar food/beverages in schools.
Food service	Implementation of healthy food service policies in public institutions.

Note: This policy mapping analysis grid is adapted from Sacks *et al.* (2009).

2B. TOOL 2 — WEIGHTING FOR FEASIBILITY BASED ON TECHNICAL, POLITICAL, COST AND SOCIO-CULTURAL (AND IT'S DEFINITION)

Feasibility Criteria	Weightings (Allocate 100% among the criteria)
Technical: Is this technically possible with existing expertise such as workforce, equipment and infrastructure availability	
Political: Will government be supportive of the approach? Is it in line with the government policy?	
Cost: Affordability. How much will it cost (to establish and maintain)?	
Socio-cultural: Will it be acceptable to the stakeholders and community? Is it acceptable in terms of cultural norms?	

Note: The feasibility assessment criteria and weighting system is adapted from Snowdon *et al.* (2010).

2C. TOOL 3 — SCORING OF POLICY OPTIONS

Potential interventions *(Examples)*	Feasibility (1–4)				Potential impact (1–4)	Side effects (1–5)	Comments
	Technical	Political	Cost	Cultural			
Remove sugar subsidies							
Banning of fast food TV ad							

Note: This prioritizing policy tool is adapted Snowdon *et al.* (2010).

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