



GUIDANCE DOCUMENT



National Environmental Health Action Plan (NEHAP) Malaysia

Secretariat NEHAP Malaysia
Engineering Services Division
Ministry of Health, Malaysia

June 2015



GUIDANCE DOCUMENT

National Environmental Health Action Plan (NEHAP) For Malaysia

Secretariat NEHAP Malaysia
Engineering Services Division
Ministry of Health, Malaysia

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Ministry of Health, Malaysia

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FOREWORD BY THE DIRECTOR GENERAL OF HEALTH MALAYSIA



The National Environmental Health Action Plan or NEHAP was first introduced in Malaysia way back in 2007, and much effort has been put in to consolidate the many piecemeal and fragmented work done previously in order to bring it to light. In fact, the Ministry of Health (MOH) was only given the task to take the lead in developing the action plans for the country from 5th December 2012. This visionary work that will transcend future generations has been entrusted to the Secretariat in the Engineering Services Division, MOH. Undeniably, this pivotal role requires much time, energy and creativity to translate the ideas of today into action plans that is applicable for the sustainability of environmental health of tomorrow.

In September 2013, Malaysia hosted the Third Ministerial Regional Forum on Environment and Health in Southeast and East Asian Countries. Thus in the Kuala Lumpur Declaration on Environment and Health, Malaysia and 13 other member countries unanimously agreed **to develop and implement NEHAP that aims to put sustainable environment and health at the centre of development that will result in sustainability and improvements in environmental quality, enhancement of public health, and ensure the health of the future generations in the region.**

Thanks to the assistance extended by the World Health Organization, this Guidance Document was developed together and in cooperation with the many agencies and stakeholders in Malaysia. Part 1 and Part 2 of this Document is completed. As of today, Part 3 is still being discussed and elaborated by interested parties. The Secretariat is working very hard to complete this section.

It is my sincere hope and those that hold environmental health close to their hearts that this Document will help steer Malaysia in the right direction. With that I would like to congratulate the Secretariat for diligently working toward completing the Action Plans.

A handwritten signature in black ink, appearing to read 'Hisham', written in a cursive style.

Datuk Dr. Noor Hisham bin Abdullah

Director General of Health Malaysia

18 June 2015

EDITOR'S NOTE

The editor has made a few changes in the second edition as follows:

- Omitted the List of Acronyms
- Omitted the List of Acronyms of Agencies
- Updated the information in Table 3.1 and Table 3.2
- Updated the General Format For Action Plans For Environmental Health
- Included the new NEHAP Secretariat set up under the Engineering Services Division, Ministry of Health Malaysia

PREAMBLE

National Environmental Health Action Plan for Malaysia

At the international level, Malaysia has committed to all kinds of health and environmental initiatives including the First Ministerial Regional Forum on Environment and Health in Southeast and East Asian Countries which was held in Bangkok in August 2007, in Jeju, Republic of Korea, July 2010 and recently in Kuala Lumpur, September 2013. In those forums, the environment and health ministers of Southeast and East Asian Countries, including Malaysia, adopted a declaration aiming at improving the health and the living conditions of the present and future generations. Furthermore, the development and implementation of **National Environmental Health Action Plan (NEHAP)** is aimed at enhancing the quality of the environment and public health. The declaration intends to safeguard the sustainable utilisation of natural resources which is line with the objective of sustainable development that has been defined as “the development that meets the needs of the present without compromising the ability of the future generation to meet their own needs”.

This NEHAP was prepared to achieve these objectives. It analyses the problems existing in Malaysia and presents possible solutions in the priority areas of concern such as air quality; water, sanitation and hygiene; solid and hazardous waste; toxic chemicals and hazardous substances; climate change, ozone layer depletion and ecosystem change; contingency planning, preparedness and response in environmental health emergencies; and health impact assessment.

Environmental health issues are complex and the scope cut across various sectors which accounted for the vast fields that involve different stakeholders. It is very crucial that "environment" and "health" are discussed together as two interdependent areas that influence each other. The cooperation, commitment and sharing of any actions relating to NEHAP are required from all parties, including government ministries, departments and agencies in order to improve the quality of Environmental Health towards making Malaysia a high-income country.

NEHAP is the basis for future activities to diminish environmental health hazards. However, the efficient implementation of the measures presented requires not only that problems and adequate options for solutions are pointed out, but, first and foremost, that everybody actively co-operates in these efforts. It is sincerely hope that this document will be used as guidance for the efficient implementation of NEHAP Malaysia.

ACKNOWLEDGEMENTS

The contributions of all who participated in the preparation and finalization of the Draft Guidance Document on National Environmental Health Action Plan including those who provided their comments during the document development through meetings, workshops, and seminars are gratefully acknowledged. Special thanks goes to those who provided invaluable comments drawing from their experience to further improve the development of the Guidance Document as listed below:

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PREFACE

This document consist of three parts; Part 1: Framework for Environmental Health in Malaysia; Part 2: Strategic Plan for Environmental Health; and Part 3: General Format for Action Plan for Environmental Health. It is a working document for the various sectors of government involved in environmental health activities to enable a coordinated approach to achieve the objectives of environmental health.

The approach outlined in this document is the overall National Environmental Health Action Plan Malaysian or NEHAP Malaysia. This in turn is part of a regional approach to a greater collaborative effort by the various sectors of government and other relevant stakeholders in countries in the region to further the objectives of environmental health.

The sequence of parts in this document is as follows:

Part 1: Framework on Environmental Health

The Framework provides a structure to deal with all sectors such as industry and trade, mining and energy, agriculture and forestry, transport, culture and social, and any infrastructure development agencies which might have a negative impact and/or the opportunity for a positive impact on the health of the population. This should establish a long-term institutional cooperative mechanism between the ministries responsible for health and ministries responsible for the environment and other relevant ministries and government sectors.

Part 2: Strategic Plan for Environmental Health

This strategic plan has been designed to be the guiding document for the implementation of the Framework on Environmental Health of the Malaysian Government. This plan provides the strategies to achieve the objectives of NEHAP. The actions needed to implement the strategies; the lead agencies of government and supporting agencies for each action will be defined during the implementation phase.

This part sets out a set of broad based objectives and strategies in Chapter 2 and these represent a set of initiatives for the long term. A set of Environmental Health Areas of Concern is set out in Part 2: Chapter 1 of this document. This gives more specific focus for the lead government sectors together with the supporting agencies to act on in the short or long term to improve the environment for human health.

The aim of implementing the Strategic Plan for Environmental Health (SPEH) is to focus attention on the relationship between environmental risk factors and health impacts.

Part 3: General Format for Action Plan for Environmental Health

This part specifies the General Format of Action Plan which will be used as a guide by the relevant Thematic Working Groups during the implementation stage of NEHAP. For the second edition, the Secretariat has revised the format and only one format is using namely Format for TWGs Discussion and Action Plan for Each Proposed Action. The format will be dynamic in nature whereby it will be subjected to continual revision by the sectors involved.

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LIST OF ACRONYMS

DG	:	Director General of Health
EQA	:	Environmental Quality Act
MDG	:	Millennium Development Goals
NEHAP	:	National Environmental Health Action Plan
SC	:	Steering Committee
SPEH	:	Strategic Plan for Environmental Health
TC	:	Technical Committee
TWG	:	Thematic Working Group

PART 1

FRAMEWORK ON ENVIRONMENTAL HEALTH

CHAPTER 1: INTRODUCTION

1.1 BACKGROUND

The United Nations Conference “Environment and Development” in 1992, in Rio de Janeiro recognized the intimate interaction between environmental quality and human health. This important relationship was one of the main themes discussed at the conference. In Agenda 21 of the Rio Conference, the programs for achieving sustainable development are foreseen, and the first principle of the Rio Declaration claims that in order to achieve sustainable development, attention is to be focused on the right to healthy and full-value life in harmony with nature. The latest United Nations Conference on Sustainable Development in 2012, in Rio de Janeiro which is known as Rio+20 - is an historic opportunity to define pathways to a safer, more equitable, cleaner, greener and more prosperous world for all. The Conference focused on two themes: (a) a green economy in the context of sustainable development poverty eradication; and (b) the institutional framework for sustainable development.

Environmental protection and public health goals are in general replenishing each other. Close collaboration of these two sectors is crucial for effective environmental health management. Environmental Health is the branch of public health that is concerned with all aspects of the natural and built environment that may affect human health. The term environmental health, as defined by WHO, addresses all the physical, chemical, and biological factors external to a person, and all the related factors impacting behaviours. It encompasses the assessment and control of those environmental factors that can potentially affect health. It is targeted towards preventing disease and creating health-supportive environments. This definition excludes behaviour not related to environment, as well as behaviour related to the social and cultural environment, and genetics.

Human activities are changing the composition of Earth's atmosphere and are contributing to climate change. Climate change is a significant and emerging threat to public health, and changes the way we must look at protecting vulnerable populations. Climate variability and change cause death and disease through natural disasters, such as heat waves, floods and droughts. In addition, many important diseases are highly sensitive to changing temperatures and precipitation. These include common vector-borne diseases such as malaria and dengue; as well as other major killers such as malnutrition and diarrhoea. Climate change already contributes to the global burden of disease, and this contribution is expected to grow in the future. Integrated efforts by all relevant stakeholders should be undertaken to address this emerging issue that influences environmental health.

To address the major environmental health problems and needs for action, many countries in the world have decided to prepare and implement a NEHAP (National Environmental Health Action Plan). NEHAP presents strategies on how to improve environmental health within the country and defines the roles and responsibilities of various stakeholders.

Experiences in Europe prove to be good examples in NEHAP preparation. At Helsinki Conference in 1994, all Member States of WHO European Region have decided to develop National Environmental Health Action Plans (NEHAPs) reflecting country specific problems and needs. While developing NEHAPs it is necessary to collaborate closely with all relevant stakeholders involved in environmental health.

In this region the First Ministerial Regional Forum on Environment and Health in South East and East Asian Countries held in Bangkok in August 2007 agreed that member countries should prepare and regularly update NEHAP. The Second Ministerial Meeting of the Regional Forum on Environment and Health in Southeast and East Asian countries on 15 July 2010, in Jeju, Republic of Korea recognized the need to achieve the goal by ensuring clean air, safe and adequate water, environmentally sound treatment and safe disposal of waste, safe management of chemical substances, adequate response and adaptation to climate change, efficient and effective actions in environmental health emergencies and assessment of health impacts of these and other environmental hazards.

In the Third Ministerial Regional Forum on Environment and Health in South East and East Asian Countries held in Kuala Lumpur in September 2013, all member countries agreed to the Kuala Lumpur Declaration on Environment and Health. The 14 countries had:

“Agree to cooperate to develop and implement national environmental health action plans (NEHAPs), or equivalent plans, that aim to put **sustainable environment and health at the centre of development**, and that will result in sustainability and improvements in environmental quality, and enhancement of public health, and ensure the health of the future generations in the region;

Agree to work for the development and implementation of mechanisms to enable more effective sharing of information between the health and environment sectors and other sectors through the Environmental Health Country Profiles (EHCP) and Environmental Health Data Sheets (EHDS);”

Environmental health issues are complex and cut across sectors and agencies, requiring coordination and cooperation among them. Government agencies on their own have developed and implemented environmental health related sectors and

programs, which if not properly done will have impact on human health. Examples of those sectors are water supply, drainage and irrigation, sewerage, transportation, food production, solid waste management and hazardous waste management.

Improving environmental health in Malaysia requires all stakeholders and affected groups to recognize their common aspirations, develop common goals and work to strengthen their communication to forge partnerships on common actions. This national framework on environmental health will provide the cornerstone of the government's approach towards sustainable development, socio-economic development, protection of the environment, and promotion and protection of human health.

1.2 OBJECTIVES OF NEHAP AND DEFINITIONS

1.2.1 General objectives of NEHAP

NEHAP documents are formulated as an authoritative reference and provide directions for strengthening and improving environmental quality and health in alignment with Malaysia's development goals.

The objectives are as follows:

- i) To strengthen collaboration and cooperation with other sectors for effective use of resources in improving human health and sustainable development.
- ii) To develop and maintain human health and sustainable development in the country.

1.2.2 Definitions

- i) **Health** is a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity (WHO, www.who.int/about/definition/en/print.html).
- ii) **Environment** means the physical factors of the surroundings of the human beings including land, water, atmosphere, soil, odor, taste, the biological factors of animals and plants and the social factor of aesthetics (Laws of Malaysia, Act 127, Environmental Quality Act, 1974).
- iii) **Environmental health** comprises of those aspects of human health, including quality of life, that are determined by physical, chemical, biological, social and psychosocial factors in the environment (WHO, 1993).
- iv) **Sustainable Development** is defining as the development that meets the needs of the present without compromising the ability of the future generation to meet their own needs (Brundtland Report, United Nations World Commission on Environment and Development (WCED), 1987).

1.2.3 Structure of the national framework

This National Framework on Environmental Health provides a structure to deal with all sectors which might have a negative impact and/or the opportunity for a positive impact on the health of the population, such as industry and trade, mining and energy, agriculture and forestry, transport, culture and social, and any infrastructure development agencies.

1.3 RATIONALE FOR NATIONAL ENVIRONMENTAL HEALTH ACTION PLAN

1.3.1 Regional and global status on Environmental Health

Environmental, genetic and behavioural practices are the major factors contributing to the increase in environmental and public health problems and challenges. Contact with air hazards, unsafe water, soil, and physiological hazards create high morbidity, disability, and mortality. Despite the advanced health technology and development technologies the world still faces high morbidity, injury, and mortality rates.

In the World Health Organization report, 2006 on environmental health, the main findings are:

- i) Each year, 13 million deaths were caused by environmental impacts.
- ii) In developing countries 1/3 of the morbidity and mortality are due to poor environmental factors.

Environmental factors that caused the leading diseases are:

- i) 94% of diarrhoea cases are due to untreated water, unsafe drinking water, personal hygiene, poor sanitation and unsafe food consumption.
- ii) 41% of lower acute respiratory cases are caused by outdoor and indoor air pollution.
- iii) 44% of accidental injuries occurred in the industrial zone with poor workplace conditions.
- iv) 42% of malaria cases are impacted by poor management of habitat and land use and poor water resources management.
- v) Poor architectural and transport system design caused 40% of traffic accidents cases.
- vi) Direct contact with indoor and urban air pollution is the leading cause of 42% of cases of chronic obstructive pulmonary disease (COPD).

At the global level, the World Health Organization found that 24% of total diseases are due to environmental factors and caused 23% of the mortalities and 85 diseases out of 102 diseases are due to the interactions with poor environmental factors (WHO, *World Health Report, 2006*). In addition, 60% to 80% of morbidity in developing countries is due to environmental factors.

It was also reported that 1.7 million deaths from diarrhoea per year was due to inadequate and insufficient potable water supply.

The New Global Annual Assessment of Sanitation and Drinking-Water (GLAAS) Report – 2010, estimated the annual live loss of 2.2 million children under the age of 5 was due to unsafe water, inadequate sanitation and the lack of hygiene. Of these deaths, 1.5 million are due to diarrhoea, the second leading contributor to the global burden of disease.

1.3.2 Environmental Health in Malaysia

Malaysian society is increasingly urbanized, more populous and more complex. As a consequence, air, water and soil contamination has increased and persistent chemical pollutants have become widespread. In addition, global climate change presents new environmental health hazards. These factors may contribute to respiratory and cardiovascular diseases, physiological and neurological disorders, and increased incidences of a range of cancers. With these situations it is necessary for Malaysia to formulate and established the environmental health framework for planning, control and mitigation of the emerging health impacts from new environmental health hazards.

The National Policy on Environment (DOE, 2002), aims at continued economic, social and cultural progress and enhancement of the quality of life of Malaysians through environmentally sound and sustainable development. One of its objectives is to achieve a clean, safe, healthy and productive environment for the present and future generations.

Sustainable development and its relationship to promoting good quality of life are high on the Government development agenda. Central agencies are concerned with the impact of national expenditure on those sectors. The Economic Planning Unit of the Prime Minister's Department has agreed that NEHAP was to be developed in the 9th Malaysia Plan (MP) by the Ministry of Health. The Engineering Services Division, MOH has been given the task by the Ministry to coordinate the development and implementation of NEHAP which is to commence in the 10th MP.

Gathering of basic information on areas of concern in Malaysian Environmental Health was done and documented in 2007. The documents provide an initial insight for the scope of NEHAP development. In December 2007 the Division had also

organized the 1st Malaysian NEHAP Seminar which was attended by relevant stakeholders. A consensus was formed among the participants as to the need for Malaysia to have its NEHAP.

The current status of environmental health related programs/activities that are being implemented by various agencies and stakeholders have been carried out and formed the basis for the formulation of NEHAP. Analysis of the current status included the definition and scope of environmental health in Malaysia, Government policies, programs and activities that have a bearing on:

- i) environmental health;
- ii) role of other stakeholders in influencing environmental health;
- iii) identifying those areas related to environmental health that do not receive appropriate attention;
- iv) resources and costs that are currently incurred by the Government for the provision of environmental health related programs and activities; and
- v) legal, administrative and organizational system of implementing and managing environmental health programs and activities.

1.4 RATIONALE FOR FRAMEWORK DEVELOPMENT

1.4.1 Malaysia has already committed to different international treaties and conventions such as United Nations Framework Convention on Climate Change (Ratified: 13/7/1994), Montreal Protocol on Substances that Deplete Ozone Layer (Ratified: 26/10/2001), Kyoto Protocol (Ratified: 4/9/2002), Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal (Accession: 8/10/1993).

1.4.2 Continuous efforts have been undertaken by the Government to ensure that the environment is always given emphasis during the planning process for all development projects. The efforts are in line with national plans as follows:

- i) Malaysia's Second Outline Perspective Plan (1991 – 2000) which emphasized on issues of environment with respect to development stated that Malaysia would continue to take appropriate action to ensure development is sustainable, balanced and environmentally sound during the plan period.

- ii) The National Vision Policy in Malaysia's Third Outline Perspective Plan (2001 – 2010) further stressed the principles of sustainable development and environment friendliness to ensure that the environment is clean, healthy and conducive as well as being able to sustain the aspirations and needs of the nation.
- 1.4.3 The 10th Malaysia Plan also emphasized that the Government will adopt the sustainable production approach to ensure economic growth but not at the expense of the quality of environment.
 - 1.4.4 Malaysia had formulated numerous policies to address issues related to the conservation and protection of the environment, such as the National Policy on Environment (DOE, 2002), National Green Technology Policy (NRE, 2009), National Climate Change Policy (NRE, 2009). These policies were established to ensure sustainable development and at the same time having control over the environmental health.
 - 1.4.5 The global and regional environments have changed, especially due to climate change effects, which play a major role in the outbreak of diseases such as cholera, diarrhoea, dysenteries, typhoid and vector borne diseases.
 - 1.4.6 Promotion and improvement of environment and health through sustainable economic development is essential for national development.
 - 1.4.7 Environmental impact and disease sources are cross-border world-wide issues.
 - 1.4.8 National framework formulation is a prerequisite for the development of an effective national strategic plan on environmental health.
 - 1.4.9 To support the national framework, strategies and work plans of other sectors related to environment are essential.
 - 1.4.10 To strengthen the collaboration and cooperation among different sectors in the environment areas with the health sector to effectively execute the national framework and strategies.
 - 1.4.11 To give priorities for local and national investments in the development of Malaysia.

CHAPTER 2: PRINCIPLES, VISION, GOALS AND OBJECTIVES

2.1 PRINCIPLES

The following guiding principles form the basis of the Framework on Environmental Health

- i) A focus of activities on the protection of the environment and human health from hazards and a decrease in related mortality, morbidity and injuries in the population;
- ii) Enhancement of the roles and responsibilities of governmental and non-governmental organizations, business organizations and the community to reduce environmental impacts on health;
- iii) Enhancement of inter-sectoral cooperation through strategic alliances, with the aim of reducing environmental risks to health;
- iv) Coordination of the activities of the Framework, Strategic and Action Plans and other projects related to environmental health; effectively allocate funds; and provide assistance, support and cooperation with the public and private sectors and international organizations.
- v) Consideration of existing policies and their plans of action; and
- vi) The implementation of the program in conformity with the aims of WHO, UN Millennium Development Goals and other international organizations.

2.2 VISION OF REGIONAL INITIATIVE ON ENVIRONMENT AND HEALTH

The vision of the Regional Initiative on Environment and Health in Southeast and East Asian Countries is adopted for this framework. The vision is as follows:

“Sustainable development encompasses nurturing the environment, enhancing economic growth and social equity to reduce poverty, promoting the health and well-being of people, and encouraging partnerships and cooperation among various stakeholders and across countries in the region.

Without environmental and health protection, development is undermined. Without economic growth, which is essential to poverty reduction and improving the quality of life, protection of the environment and the promotion of health will fail.

Thus, the vision of the Regional Initiative on Environment and Health is to safeguard and enhance health and the environment and thereby promote development which reduces poverty.”

2.3 GOALS AND OBJECTIVES OF REGIONAL INITIATIVE ON ENVIRONMENT AND HEALTH

The general objective of the regional initiative is to build the capacity to deal with environmental health problems among Southeast and East Asian countries.

The initiative aims to strengthen the cooperation of the ministries responsible for environment and health within countries and across the region by providing a mechanism for sharing knowledge and experiences, improving policy and regulatory frameworks at both national and regional levels, and promoting the implementation of integrated environmental health strategies and regulations.

This initiative aims to assist countries to:

- i) Effectively and efficiently achieve their targets on health, environmental sustainability, poverty, and global partnership for development under the United Nations Millennium Development Goals.
- ii) Institutionalize the integrated management of environmental health at all levels within each participating country and among Southeast and East Asian countries, by establishing a coordinative institutional mechanism.
- iii) Assess priority environmental health risks, develop and implement cost-effective National Environmental Health Action Plans (NEHAP), and disseminate such plans to various stakeholders.

2.4 OBJECTIVES OF FRAMEWORK

- i) To establish the organizational structure for the management of environmental health.
- ii) To ensure commitment and sustainability from all levels, through the establishment and maintenance of government structures and mechanisms, that development and economic activities affecting the environment and human health give consideration to the potential health impacts and ensure that human health is enhanced.

- iii) To improve the relevance, quality, accessibility and availability of a range of data sets on environmental parameters related to health (i.e. physical, chemical and biological parameters in relation to air, water, soil, food and human ecology) for purposes of situation, trend and impact analysis.
- iv) To sustain and enhance the effectiveness of existing mechanisms for the identification and evaluation of environmental risk factors that may influence human health.
- v) To strengthen risk management measures (including legislative controls) for individual activities, in both the private and public sectors, on the basis of objective assessments of the risks.
- vi) To develop the infrastructure capacity (including laboratory and other support services) to provide appropriate services and support mechanisms for the effective identification, monitoring and evaluation processes to enhance health and for the management of environmental risk factors which adversely affect health.
- vii) To enhance professional education and training, especially for those within government agencies, to collaborate with others to effectively implement the environmental health framework.
- viii) To encourage and foster active and informed public participation through the provision of appropriately designed educational and information programs.
- ix) To improve the quality and quantity of the research and technical development effort in the identification, monitoring, evaluation and risk management methods related to environment and health.
- x) To improve international collaborative efforts to further develop environmental health in the region and mutually reinforce activities to improve environmental health.

CHAPTER 3: IMPLEMENTATION

3.1 IMPLEMENTATION PROCESS

The Ministry of Health will be responsible for strengthening collaboration between ministries and related agencies to promulgate this framework to ensure a consistent approach and the harmonization of policies for environmental health in Malaysia. Appropriate action will be taken to further this process which also includes the implementation of the Strategic Plan and Action Plan for Environmental Health.

Environmental Health Strategic and Action Plans have been prepared to support the implementation of the framework. These plans give details of specific strategies and actions to achieve the environmental health objectives for Malaysia, including East Malaysia that is slightly different in terms of governmental administration. They set out strategies to achieve the objectives and specific actions and assign responsibilities to agencies of government together with a notional time frame. However, these plans shall not interfere or disrupt the planning and implementation of future or existing policies, action plans and programs put in place by the respective ministries, government departments and other stakeholders. The Environmental Health Strategic and Action Plans are mainly to complement their existing policies and action plans by identifying and addressing environmental issues that have impact on health.

All ministries and sectors of government and other stakeholders, including those from East Malaysia should take a carefully considered approach to implement the strategies described in Part 2 of the NEHAP document for effective and realizable results.

3.2 IMPLEMENTATION MECHANISM

The implementation mechanism comprises of a three-tier approach and they are as follows:

- Steering Committee (SC)
- Technical Committee (TC)
- Thematic Working Groups (TWGs)

In addition, the Secretariat and Core Team for NEHAP within the Ministry of Health should be established for the smooth implementation of this program. The roles of the Secretariat and Core Team are as follows:

(i) Role of Secretariat

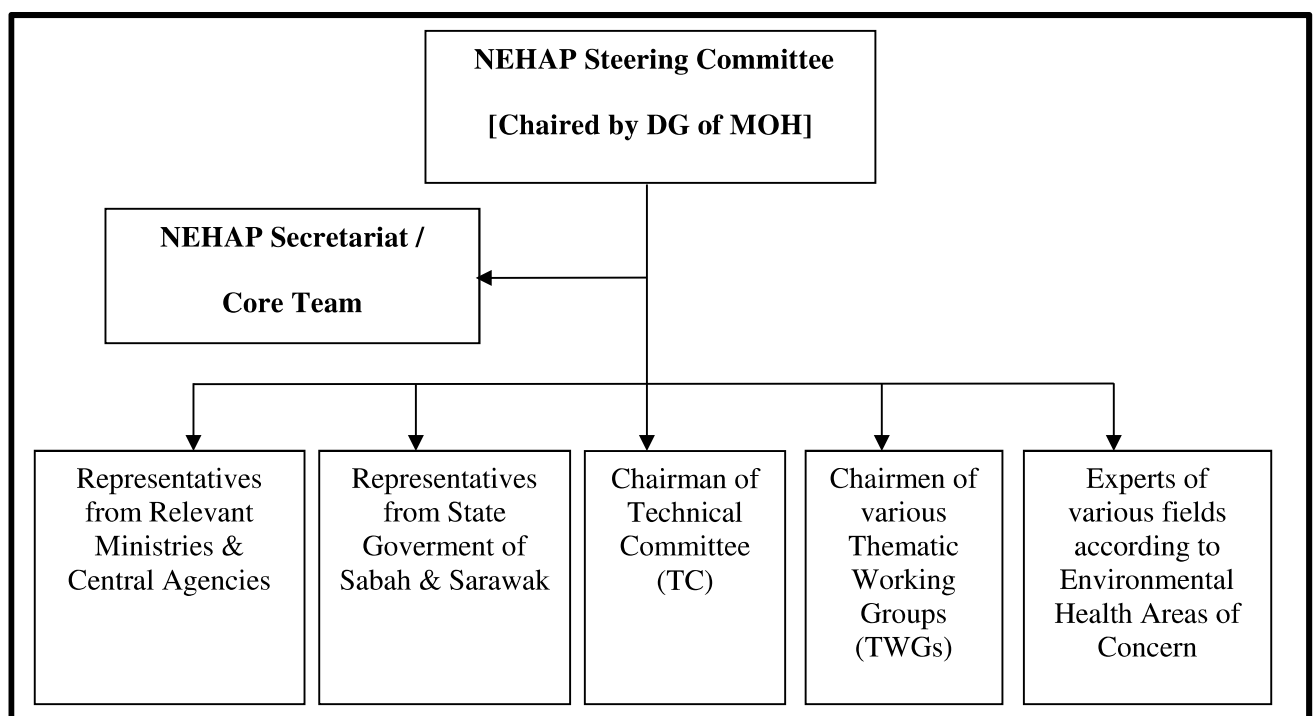
- Planning, reviewing, improving and coordinating the activities of NEHAP through periodic meetings for the purpose of determining the direction of the implementation of environmental health programs in the country.
- Secretariat for NEHAP Committee meetings ie. Steering Committee and Technical Committee.
- Monitoring of TWGs meetings schedule for key areas under environmental health areas of concern.
- Prepare, evaluate and review Thematic Working Group’s technical reports for discussion at the meeting of the NEHAP Technical Committee.
- Prepare, evaluate and review the Technical Committee’s technical reports for discussion at the meeting of the NEHAP Steering Committee.
- Coordinate research requirements of environmental health :
 - Prepare studies need of environmental health according to priority.
 - Coordinate financial needs and identify the source of funding to undertake.
 - Provides database studies of environmental health that have been implemented at the national level.
 - Provide performance reports periodically.
- Develop, monitor, review the efficiency and effectiveness of the NEHAP program through performance indicators and recommend continuous.
- Focal point for national and international meetings or forums related to environmental health.
- Develop, maintaining and updating centralized database to integrate environmental health data from all areas of concern for the purpose of data sharing and decision making.
- Analysing, reviewing and reporting the environmental health status regularly.

(ii) Role of Core Team

- Review framework, strategic plans and national environmental health policies when necessary.
- Become a member to the meetings of the Thematic Working Groups, chaired by the agencies within or outside the Ministry of Health.
- Provide input related to current developments and trends that are associated with the disease related to environmental health.
- Provide input related to environmental health in the national long-term plans such as the Outline Perspective Plan, the 5-year plan etc.

3.2.1 Structure and Role of NEHAP Steering Committee (SC)

The basic organizational structure for the NEHAP SC is as follows:



The SC is chaired by the Director General (DG) of Health, Ministry of Health and the role of the Secretariat is the responsibility of the Engineering Services Division (ESD), Ministry of Health.

The committee members are made up of representatives from relevant ministries and central agencies, representatives from the States of Sabah and Sarawak, Chairman of the NEHAP Technical Committee, the Chairmen of

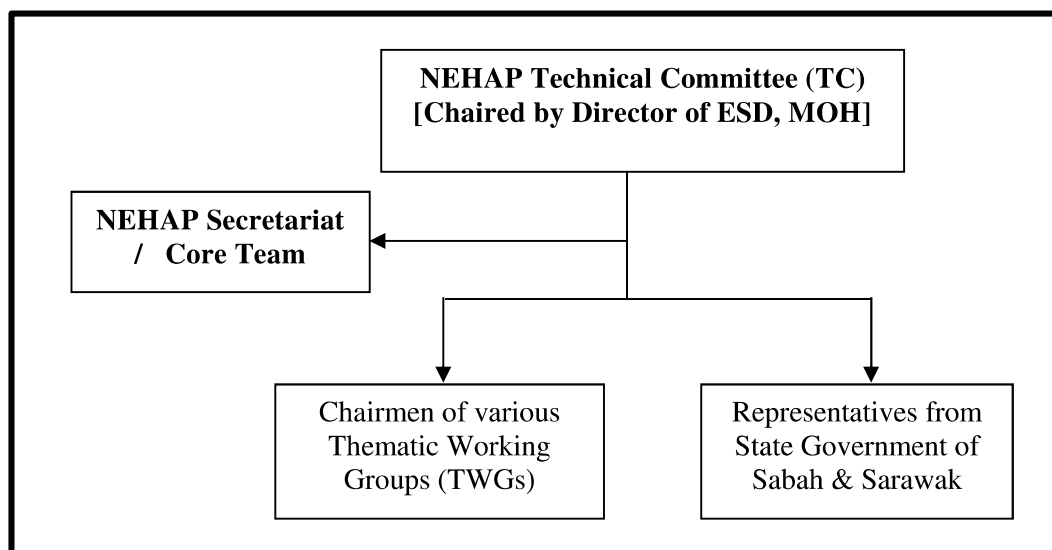
Thematic Work Groups, and experts of various fields according to the environmental health areas of concern.

The role of the SC is as follows:

- Ensure that the planning and implementation of NEHAP are in line with the Framework and existing government policies and directions.
- Formulate new policies to manage emerging environmental health issues.
- Provide platform/forum for discussion and close collaboration amongst Ministries/Departments/Agencies in the implementation of NEHAP.
- Review the NEHAP Framework and Strategic Plan periodically to ensure that they remain responsive to the needs of the Malaysian population and the international community.
- Assess and evaluate the efficacy and effectiveness of NEHAP through performance indicators and recommend continuous improvement.

3.2.2 Structure and Role of NEHAP Technical Committee (TC)

The basic organizational structure of the TC is as follows:



The TC is chaired by the Engineering Services Division, Ministry of Health and the committee comprises the Chairmen of all the TWGs and representatives from State Government of Sabah & Sarawak.

The role of the TC is as follows:

- Coordinate, liaise and monitor the activities of the various TWGs.
- Harmonize and integrate action plans of all TWGs related to common environmental health issues.
- Report the progress of the various TWGs to the SC through the SC Meetings.
- Act as advisory committee for the various TWGs.
- Verify reports of all TWGs and propose recommendations to the SC.

3.2.3 Role of Thematic Working Groups (TWGs)

A TWG is set up for each area of concern. Each TWG is chaired by the ministry/department/agency of authority or having high stakes with respect to the area of concern. Each TWG is represented by Ministries/Departments/Agencies relevant to the respective area of concern.

The role of a TWG is as follows:

- All group members of TWG shall ensure that they possess sound knowledge and expertise in their respective field to identify and address environmental health issues relevant to the area of concern of the TWG.
- Identify emerging environmental issues that have impact on health with respect to the area of concern of the TWG.
- Identify environmental areas that require further research to verify their health impacts.
- Prioritize environmental health issues that need to be addressed.
- Establish and update action plan according to priority for implementation.
- Carry out the planned activities to address environmental health issues.

- Monitor the progress of activities through regular meetings.
- Report the progress of activities to the TC through returns and TC Meetings.
- Provide environmental health data for the respective area of concern.

The operational of TWGs are guided by **Standard Operating Procedure (SOP)** published by Secretariat NEHAP and should be used to ease the implementation of NEHAP.

3.3 FRAMEWORK REVIEW

This Framework is available for wide consultation and shall be formally reviewed and revised periodically, that is every ten years or at any time deemed necessary by the Steering Committee, to ensure that it remains responsive to the needs of the Malaysian population and the international community.

PART 2

STRATEGIC PLAN FOR ENVIRONMENTAL HEALTH

CHAPTER 1: BACKGROUND

1.1 Introduction

Good health is something which everyone wants, for themselves, their children and for the wider economic and social benefits it brings to society. It plays a major role in long-term economic growth and sustainable development. Malaysian society has become increasingly urbanized and more complex. In supporting contemporary lifestyles, there has been increased in air, water and soil contamination; persistent chemical pollutants have become gradually widespread; and global climate change presents new environmental health hazards. These factors are contributing to communicable diseases, non-communicable diseases, physiological and neurological disorders.

Environmental health is highly intersectoral, embracing a broad range of subject areas and involving a wide variety of stakeholders. In addition to improving well-being of Malaysians, the purpose of SPEH is to maximize the potential economic and social benefits and reduce the adverse health impacts of environmental risk factors and to bring these stakeholders together across the range of issues which encompasses environmental health.

SPEH has been developed in close coordination and cooperation of various sectors. Its preparation has involved a consultation process conducted at the National level. The success of the implementation of this strategic plan will be achieved if there is participation and support from all stakeholders, including international organizations, and most importantly, the active contribution of all Malaysians.

Many environment and health related problems have been solved, but much remains to be done, in particular with respect to the health implications of chronic exposures. The interaction between environment and health is far more intimate and complex than is commonly understood. In particular, little attention has been paid to the interaction of different pollutants in the human body as well as in the environment.

Global changes have begun to affect human health simultaneously and often interactively. These changes involve some global issues such as climate change and stratospheric ozone depletion, and issues of natural resource degradation such as land degradation and desertification.

1.2 Environmental Health Areas of Concern

The important environmental health areas of concern are identified based on the Regional Initiative on Environment and Health in Southeast and East Asian Countries and they are as follows:

- i) Air Quality;
- ii) Water, sanitation and hygiene;
- iii) Solid and Hazardous Waste;
- iv) Toxic Chemicals and Hazardous Substances;
- v) Climate Change, Ozone Depletion and Ecosystem Change;
- vi) Contingency Planning, Preparedness and Response in Environmental Health Emergencies; and
- vii) Health Impact Assessment.

1.3 General Issues Requiring Improvement

- i) Specific policies and legislation for environmental health: develop specific policies, strategies, legislation, and long term plan for environmental health.
- ii) Institutional development and inter-sectoral collaboration.
- iii) Human resources development.
- iv) Monitoring and surveillance.
- v) Integration of health and environment in international/regional agreements.

CHAPTER 2: ENVIRONMENTAL HEALTH OBJECTIVES AND STRATEGIES

2.1 MILLENNIUM DEVELOPMENT GOALS (MDG) AND ENVIRONMENTAL HEALTH COMPONENTS

Reducing the disease burden of environmental risk factors will contribute significantly to the Millennium Development Goals. Reducing environmental risks to health also contributes to poverty reduction, while supporting other MDG goals such as access to education and gender equality.

Many MDGs have an environmental health component. Key elements are highlighted below:

- Goal 1 : Eradicate extreme poverty and hunger
- Goal 2 : Achieve Universal Primary Education
- Goal 3 : Promote Gender equality and Empower Women
- Goal 4 : Reduce Child Mortality
- Goal 5 : Improve Maternal Health
- Goal 6 : Combat HIV/AIDS, Malaria and other diseases
- Goal 7 : Ensure Environmental Sustainability
- Goal 8 : Develop a Global Partnership for Development

2.2 GOVERNMENT POLICY

Malaysia had formulated numerous policies to address issues related to the conservation and protection of the environment, such as the National Policy on Environment (DOE, 2002), National Green Technology Policy (NRE, 2009), National Climate Change Policy (NRE, 2009). Besides that, these policies would ensure sustainable development and at the same time having control over the environmental health.

The 10th Malaysia Plan also emphasized that the Government will adopt the sustainable production approach to ensure economic growth but not at the expense of the quality of environment. To ensure that all Malaysians can enjoy a higher quality of life, one of the strategies of the 10th Malaysia Plan, i.e. *“Transforming Healthcare*

to Improve Quality and Provide Universal Access”, will focus on restructuring the healthcare delivery system to increase the quality and capacity of care and moving from strategies that emphasize treatment, to one that emphasizes wellness and disease prevention.

2.3 ENVIRONMENTAL HEALTH STRATEGIES

In developing the Strategic Plan for Environmental Health there are a number of broad areas which can be used to focus attention on strategies to identify, monitor, evaluate, manage and control the impact of environmental factors on health on a long term basis. The strategies for these broad areas are set out in the sub-sections below.

The broad areas are as follows:

- i) **Institutional components and government structure - policies, procedures, economic factors, and legislative requirements.**
- ii) **Essential functions of environmental health:**
 - Environmental health information systems with links to environmental and health information systems;
 - Identification, monitoring and evaluation of health hazards (e.g. physical, chemical, biological and psychosocial in air, water, food, waste disposal, climate change and human ecology);
 - Oversight and implementation of risk management measures.
- iii) **Essential support functions for environmental health**
 - Environmental health services
 - Professional training and education, public information and education
 - Research and technological development
 - International collaboration

There are a number of stakeholders that need to participate in the improvement of the identification, monitoring, evaluation, and management of environmental determinants of health.

These are:

- i) Competent authorities at all levels (national, state, regional and district). In addition to approving and assessing agencies, other agencies in the public and private sectors need to participate.

- ii) NGOs including trade associations, professional and technical bodies, advocacy groups, the public, consultants.
- iii) Public and private sector businesses (large, medium and small), which have the potential to be involved in operations that may affect the environment or health.
- iv) The media, public relations, and information services.
- v) Universities, research centres, scientific associations, and international organizations.

For each of the area of concern covered by the strategic plan, there should be some background information with specific reference to the country that will give the basis for action to be taken. The details of the action plan should be discussed in each of the area of concern within TWGs. The General Format for this action plan which includes the current situation, issues and challenges are attached in Part 3 of this document.

The broad strategic areas for the implementation of the Framework are given below:

2.3.1 Institutional Components and Government Structures – Policies, Procedures, Economic Factors and Legislative Requirements

Strategies

- (a) Establish, at the national level, an appropriate mechanism for regular consultation and information exchange on planning and decision-making which have the potential to affect health. This should involve representatives of all relevant government departments and other agencies to work cooperatively in hazard identification, monitoring, evaluation, and management of risks to human health and the environment.
- (b) Develop and review continually national environmental and health policies in cooperation with all other sectors, as appropriate, so as to reach decisions in the best interests of human health, the environment, and the economic well-being of the country.
- (c) Establish similar mechanisms at the State and Local Government levels with the capacity to identify and assess local issues and develop solutions taking full advantage of public participation.
- (d) Develop effective delegation of responsibilities from Federal to State and Local Government levels while maintaining a consistent approach.

2.3.2 Essential Functions of Environmental Health

2.3.2.1 Environmental Health Information Systems

Strategies

- (a) Develop capacities at appropriate levels to monitor environmental exposures and the collection, analysis and interpretation of data. Emphasis needs to be placed on the relevance and quality of the data using recognized quality control procedures. Data and information available from other sources must be screened to avoid duplication.
- (b) Develop, at the national level, a network of health statistical databases to link data to information at the local level on exposures, exposure pathways, and the disease and injury burden attributable to environmental factors so that adverse impacts of environmental factors on health can be identified.
- (c) Establish linkages of interagency databases and information systems to facilitate access to data and information through the internet.
- (d) Improve and expand reference resource material on environmental health.

2.3.2.2 Identification, Monitoring and Evaluation of Environmental Risks to Health

Strategies

- (a) Provide comprehensive checklists and audit procedures which can be used nationally for identification, monitoring, and evaluation of environmental factors that could have adverse effects on human health.
- (b) Risk assessments should be carried out on current specific sites which are considered a priority for potential adverse effects on human health or the environment.
- (c) Develop and synchronize procedures to improve and harmonize the environmental and health risk assessment process for government, industry and other relevant agencies taking into account, when possible, multi-factorial and cumulative impacts.

- (d) Programs should focus on qualitative and quantitative risk assessment procedures which allow for the assessment of the potential impact in terms of the risks to human health.
- (e) Environmental and health risk assessments (qualitative and quantitative) should be incorporated into all relevant policies, programs and projects.

2.3.2.3 Oversight and Implementation of Risk Management Measures

Strategies

- (a) Enhance an operational plan to ensure that risk management measures set out in the Key Target Areas are carried out and that a broad range of additional measures are identified to meet national, state and local requirements.
- (b) Regularly monitor and review the implementation of the risks management measures with emphasis on optimizing the cost, efficiency, and effectiveness of the risk management measures.
- (c) Review the effectiveness and sustainability of risk management measures used in other countries as a benchmark.
- (d) Introduce new risk assessment and management measures using qualitative and quantitative techniques giving consideration to cumulative risk management methods.

2.3.3 Essential Support Functions for Environmental Health

2.3.3.1 Environmental Health Services

Strategies

- (a) Establish appropriate human resource capacity to provide up-to-date support to proper management of environmental health support services.
- (b) Establish appropriate mechanisms to enable staff to effectively implement appropriate techniques, methods and procedures, and to be able to effectively communicate the results and interpretations to the various stakeholders.
- (c) Develop appropriate career structures and performance appraisal procedures for personnel to encourage them to invest the

considerable amount of time and effort in the development of the skills needed for them to carry out their responsibilities.

- (d) Develop mechanisms and procedures to monitor the performance of support services for environmental health in meeting current and future needs.
- (e) Formulate and implement a plan for the development of infrastructure (equipment, hardware and software, physical facilities, laboratories, etc.) over the short, medium, and long term.

2.3.3.2 Professional Training and Education

Strategies

- (a) Introduce courses in environment and health (e.g. as part of undergraduate programs in engineering, law, medicine, economics, architecture, town planning, occupational health or public health or as part of post-graduate programs in public health, business or engineering) at various levels in colleges, universities and other institutions to increase the understanding of environmental health in the next generation of professionals.
- (b) Prepare an inventory and review the current availability of formal course of relevance to environmental health.
- (c) Develop and implement a continuing professional education program for people from stakeholder groups who need to be made aware of the principles and application of environmental health.
- (d) Develop and implement programs designed to provide in-service training for people with specialist knowledge of Health Impact Assessment (HIA) or in specialized aspects of HIA. Post-graduate courses, in-service short courses, and fellowship programs could be considered.
- (e) Conduct seminars and workshops on a regular basis for stakeholder groups such as consultants, scientists and other groups with special interest in health and environment linkages.
- (f) Design and conduct a program to develop the knowledge and skills of staff in research methods, particularly those in health and health science research.

2.3.3.3 Public Information and Education

Strategies

- (a) To review public information strategies used in a range of other countries to determine the processes that may be appropriate for Malaysia.
- (b) Develop programs to increase the quality and quantity of information available to all stakeholders.
- (c) Develop mechanisms to ensure that public participation is included, at an early stage, in the HIA process. Right to know, transparency of interests and equity need to be included.
- (d) Develop programs for media personnel in environment and health issues so that they may be better able to reflect informed opinion.

2.3.3.4 Research and Technological Development

Strategies

- (a) Encourage research in areas such as:
 - The assessment of environmental parameters and health status indicators at the local level.
 - The evaluation of promising international experiences for use in Malaysia.
 - The identification of vulnerable groups.
 - The development and evaluation of checklists and audits of environmental hazards and health status for use in the Malaysia.
 - The attributable fraction of specific disease burdens to specific environmental health risks.
- (b) Carefully evaluate control methods which have the promise of being successful in Malaysia.
- (c) Collate all relevant environmental and health status data and examine methods to further develop this database.

- (d) Determine the effectiveness of rapid assessment methodologies for predicting environmental contamination and health risk.
- (e) Conduct a study to evaluate the usefulness of rapid assessment techniques for the assessment of environmental contamination.
- (f) Establish and conduct programs to improve the research and development effort.

2.3.3.5 International Collaboration

Strategies

- (a) Establish collaborative networks in key area in environmental health through regional networks such as the Thematic Working Groups established in the Region.
- (b) Contribute to international meetings and other forums to promote environmental health in the region.
- (c) Collaborate with international agencies to raise the standards of environmental health for all countries in the region.
- (d) Participate in international programs to establish international standards for environmental parameters affecting human health including issues such as climate change.
- (e) Encourage international agencies to support the processes to be used for the implementation plan.
- (f) Establish collaborative networks in sharing knowledge and skill in environmental health through seminars, international meetings, exchange programs, etc.

CHAPTER 3: PERFORMANCE INDICATOR

The following provides indicators to be used to assess the progress towards the implementation on the Framework and Plan:

- The legal environment for environmental health will have been revised and the system of identification, evaluation and control, will be improved;
- The sources and reasons for the environmental risk factors will be identified, and the assessment of the relationships between environment contamination and health will be determined;
- Appropriate intervention strategies to manage environmental risks to health and intervention methods to reduce adverse impacts and enhance positive health impacts will have been developed, implemented and evaluated;
- The human capacity building of the environmental health sector, and laboratory capacity will be improved;
- Databases and information on environmental risk factors related to health will be widely available through the internet;
- The level of education of the population on environmental health will be increased; community participation in the promotional activities and programs on environmental health will be increased;
- The basic indicators of health and environmental risk factors will have been improved;
- The morbidity and mortality directly caused by environmental contamination shall decrease (See target below).

Selected indicators of health status are given in Table 3.1 and Table 3.2.

Table 3.1: Vital Statistics

Indicators	2010	2011	2012	2013
Life expectancy at birth (years)				
Males	71.90 ^p	72.16 ^p	70.37 ^e	72.56 ^e
Females	77.00 ^p	76.80 ^p	77.03 ^e	77.18 ^e
Crude birth rate (per 1,000 population)	17.5	17.6	17.2	17.2
Crude death rate (per 1,000 population)	4.8	4.7	4.6	4.7
Infant mortality (1,000 live births)	6.8	6.5	6.3	6.6
Toddler (1 – 4 years of age) mortality rate (per 1,000 live births)	0.4	0.4	0.4	NA
Maternal mortality ratio (per 100,000 live births)	26.1	26.2	25.6	NA
Perinatal mortality rate (per 1,000 total births)	7.7	7.6	7.4	NA
Neonatal mortality rate (per 1,000 live births)	4.4	4.2	4.0	NA

^p : Provisional/Preliminary data

^e : Estimation data

NA Data not available

Source: MOH Health Fact 2010,2012,2013,2014

Table 3.2: Incidence Rates, Discharge Rates and Mortality Rates of Diseases

Indicator		2010 ^R	2011 ^R	2012 ^R	2013 ^R
Food and Water Borne Diseases					
Cholera	Incidence Rate (Mortality Rate)	1.56 (0.02)	2.02 (0.04)	0.96 (0.00)	0.58 (0.00)
Dysentery	Incidence Rate (Mortality Rate)	0.37 (0.00)	0.15 (0.00)	0.29 (0.00)	0.28 (0.00)
Typhoid	Incidence Rate (Mortality Rate)	0.74 (0.00)	0.84 (0.00)	0.75 (0.00)	0.73 (0.01)
Vector Borne Diseases					
Dengue	Incidence Rate (Mortality Rate)	148.73 (0.06)	63.75 (0.00)	72.20 (0.00)	143.27 (0.00)
Dengue Haemorrhagic Fever	Incidence Rate (Mortality Rate)	14.23 (0.42)	4.90 (0.12)	2.45 (0.12)	2.60 (0.31)
Air Pollution related Diseases					
Asthma	Discharge Rate (Mortality Rate)	118.53 (0.50)	124.17 (0.34)	70.32 (0.20)	96.53 (0.12)
Upper Respiratory Tract	Discharge Rate	145.28	161.90	95.22	146.31

Indicator		2010 ^R	2011 ^R	2012 ^R	2013 ^R
Infection (Acute)	(Mortality Rate)	(0.05)	(0.06)	(0.05)	(0.07)
Upper Respiratory Tract Infection (Chronic)	Discharge Rate (Mortality Rate)	16.50 (0.04)	16.55 (0.03)	9.42 (0.04)	12.41 (0.02)
Lung Diseases due to External Agents	Discharge Rate (Mortality Rate)	10.51 (3.80)	11.02 (4.25)	7.45 (2.15)	10.29 (3.31)
Non-communicable Diseases					
Lung Cancer	Age-Standardized Incidence Rate (ASR)	NA	NA	NA	NA
Hyper Tension	Discharge Rate (Mortality Rate)	95.29 (0.77)	91.78 (0.90)	47.23 (0.44)	62.28 (0.57)

^R: Incidence rates, discharge rates, mortality rates, and ASR are expressed as per 100,000 populations.

NA: Data not available

Sources: MOH Health Indicators and Health Fact 2010, 2012, 2013, 2014.

PART 3

GENERAL FORMAT FOR ACTION PLAN FOR ENVIRONMENTAL HEALTH

1.1 INTRODUCTION

This part specified the General Format of Action Plan which will be used as a guide by the relevant Thematic Working Groups during the implementation stage of NEHAP. Currently, there are two formats namely Format for TWGs Discussion and Action Plan and Cost Benefit Ranking for Each Proposed Action are provided. The format will be dynamic in nature whereby it will be subjected to continual revision by the sectors involved.

1.2 FORMAT FOR TWG DISCUSSION

The formats illustrated in Appendix A. The format were divided into three categories of SPEH as below :

- i) Institutional components and government structure - policies, procedures, economic factors, and legislative requirements;
- ii) Essential functions of environmental health; and
- iii) Essential support functions for environmental health.

The TWG members should refer to **Part 2: Strategic Plan for Environmental Health** in this document as guidance for discussion and preparation of action plan.

ISSUES, CURRENT SITUATION AND CHALLENGES AND ACTION PLAN

Thematic Working Groups:

No.	Current Situation	Issues & Challenges	Action	Lead Agencies	Supporting Agencies	*Time frame	Environmental Health Indicator /Health Concern
Institutional Components and Government Structures							
Essential Functions of Environmental Health							
Essential Support Functions for Environmental Health							

***Note:**

Please stated time frame in duration ie. 2015-2017

S - Short time frame (<2 years)

M – Medium time frame (2-5 years)

L – Long time frame (>5 years)

