



# HIA for HPP

TOWARDS HEALTHY NATION: THAILAND'S RECENT EXPERIENCES



National Health Commission Office



# HIA FOR HPP TOWARDS HEALTHY NATION: THAILAND'S RECENT EXPERIENCES

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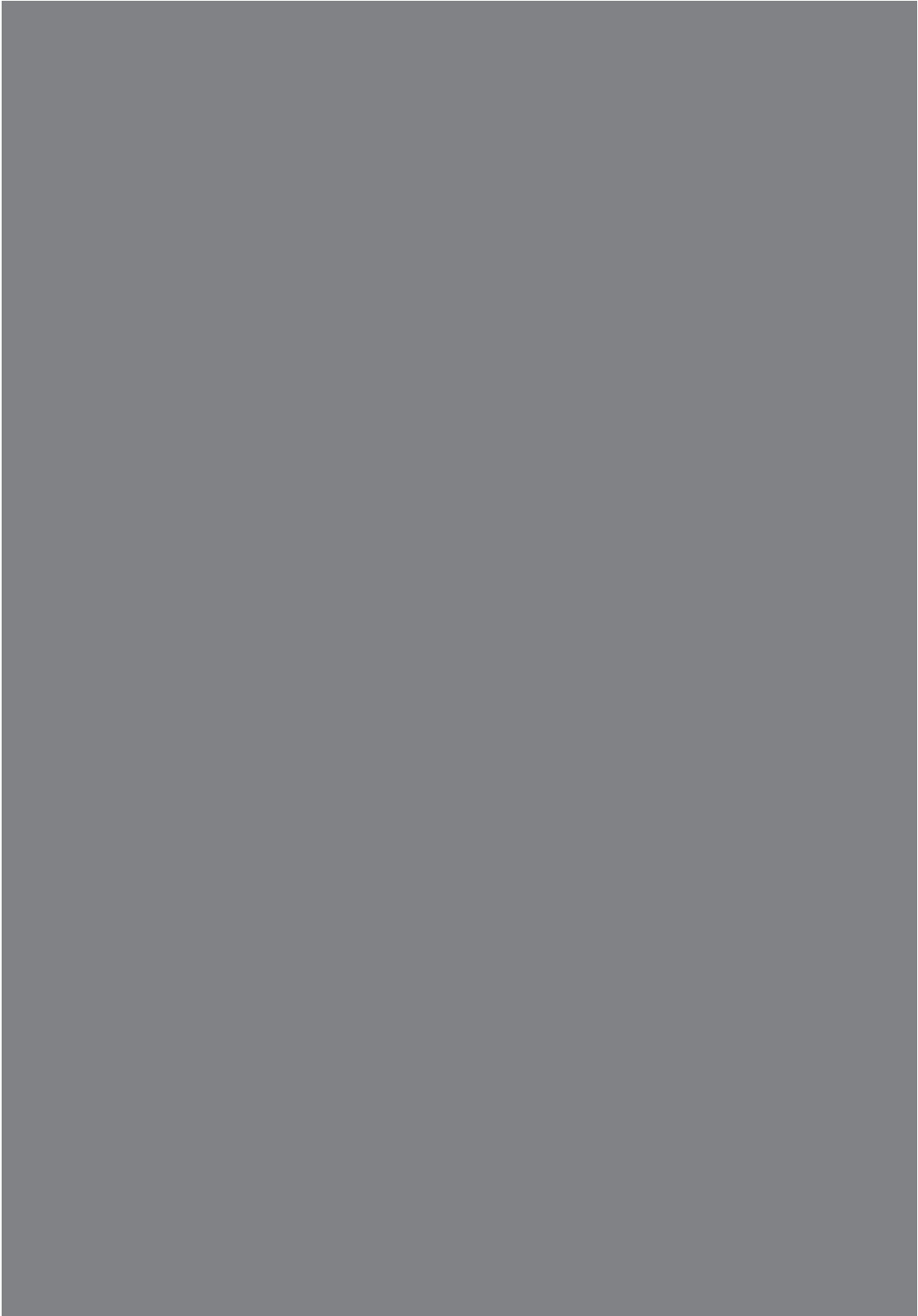
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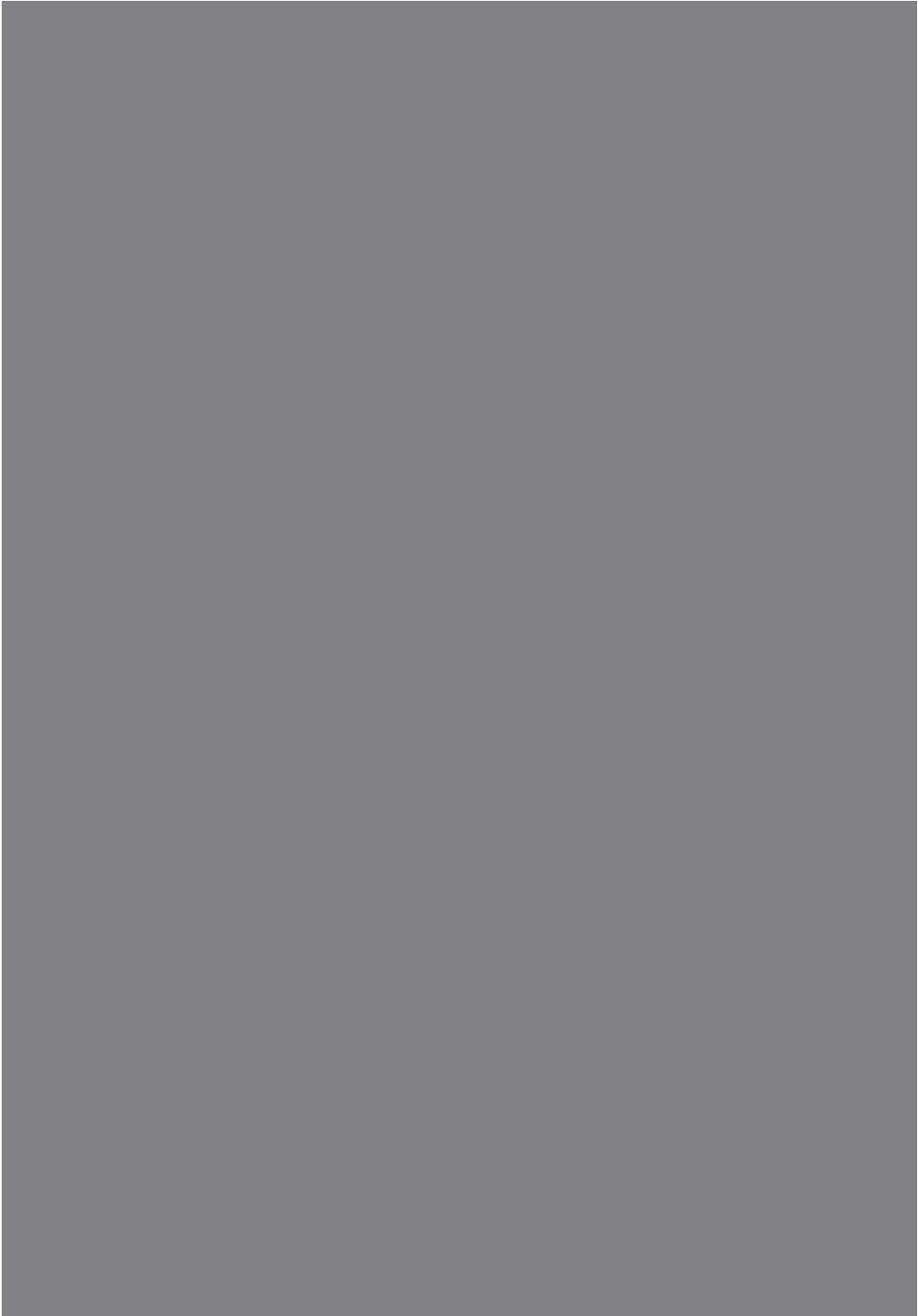
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# CONTENT

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Preface	5
1. HIA in Law: The First Step of HIA in Thailand	9
2. The Quest for Development Alternatives: HIA and the Health Assembly on Industrial Development in Mab Ta Phut and Rayong Province	23
3. HIA as a Tool for Healthful Agriculture and Food Policy in Thailand	43
4. Development of HIA Training Model and Capacity Building: Case Study on Agricultural Pesticides in Thailand	59
5. HIA through Health Assembly: Solving Flood Problems in Chiang Mai Province, Thailand	67
6. Health Impact Assessment of Kwaenoi Dam in Phitsanulok, Thailand	81
7. Regional Cooperation on HIA Development for Developing Countries: Thailand's Experience	89
8. Outcome Mapping and Monitoring HIA Progress in Thailand	101



## PREFACE

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**T**he push for Health Impact Assessment (HIA) in Thailand has been under way since the onset of the most recent wave of health care reform in 2000. The principle of HIA is to stimulate greater societal interest in developing healthy public policy (HPP) leading to a healthy society.

Thailand's HIA movement began by formulating HIA language for inclusion into the National Health Act. To this end, the National Health System Reform Commission (NHSRC) assigned the Health Systems Research Institute (HSRI) to facilitate research programs on HPP and HIA development in Thailand. In 2001, HSRI established the "Research and Development Program on Health Impact Assessment System" with the objective to promote academic, social, and political collaborations within a nationwide HIA development network. In 2003, the program was renamed "The Research and Development Program on Healthy Public Policy and Health Impact Assessment System (HPP-HIA Program)". Its main aim was to promote HIA as a tool for HPP in non-health sectors such as agriculture, industry, energy, water, transportation, urban and natural resource management.

Following administrative restructuring in 2002, the Ministry of Public Health established the Sanitation and Health Impact Assessment Division to develop HIA systems. Operating under the Department of Health, this new agency's charge was to support implementation of the Public Health Act especially amongst local government to pursue HPP decision making.

Over the past 5 years, all sectors of Thai society have applied HIA to a variety of projects and policies. These actions led to the National Economic and Social Advisory Council (NESAC) submitting specific HIA recommendations to the Cabinet in January 2005. The 31 May 2005 Cabinet Resolution acknowledged these recommendations and directed the Ministry of Public Health to implement them.

The 10<sup>th</sup> National Economic and Social Development Plan (2007 - 2011) also references HIA, as does the current biodiversity and national resources strategy. The latter requires HIA and SIA to be incorporated into the EIA process for pollution control and other activities which might impact quality of life.

Additionally, The Thai National Health Act B.E. 2550 (2007) which became effective on 19 March 2007 became the first law to specifically address HIA. This ambitious legislation included provisions for Thai people to demand an HIA be conducted and to participate in HIA processes. The Act also outlined requirements for the newly established National Health Commission to develop HIA guidelines and procedures.

Further institutional grounding of HIA in Thailand occurred with the 19 August 2007 referendum adopting the current Thai Constitution, which went into force five days later. Section 67 states, "...Any project or activity which may cause serious impacts on the environment, natural resources, and health, cannot proceed without an impact assessment addressing environmental quality and the health of populations in affected communities, and such an assessment must include a public hearing process for affected people and stakeholders. ... The public is entitled to sue any governmental agency failing to comply these principles".

Thai society now has a firm foundation from which to implement HIA. As a result, the use of HIA continues to rise within many agencies and across all sectors.

HIA in Thailand is implemented under the HPP concept, meaning it is part of the public policy screening process employing participatory learning. A key component of this approach is the flexibility of HIA to be applied at all levels of public policy formulation, from national programs down to programs developed by local administrations, and to assess the various causes of health impact such as personal behavior and social determinants of health. Thus, this approach to HIA pursues a social learning process in practice, rather than just in principle. The main challenge for Thailand, therefore, is to turn the Act into policy actions.

The articles in this book offer a glimpse into Thailand's HIA - HPP development, describing the HIA practitioners and sectors involved in the process. There are seven articles from three agencies: the National Health Commission Office, the Healthy Public Policy Foundation and the Sanitation and Health Impact Assessment Division under Department of Health, Ministry of Public Health.

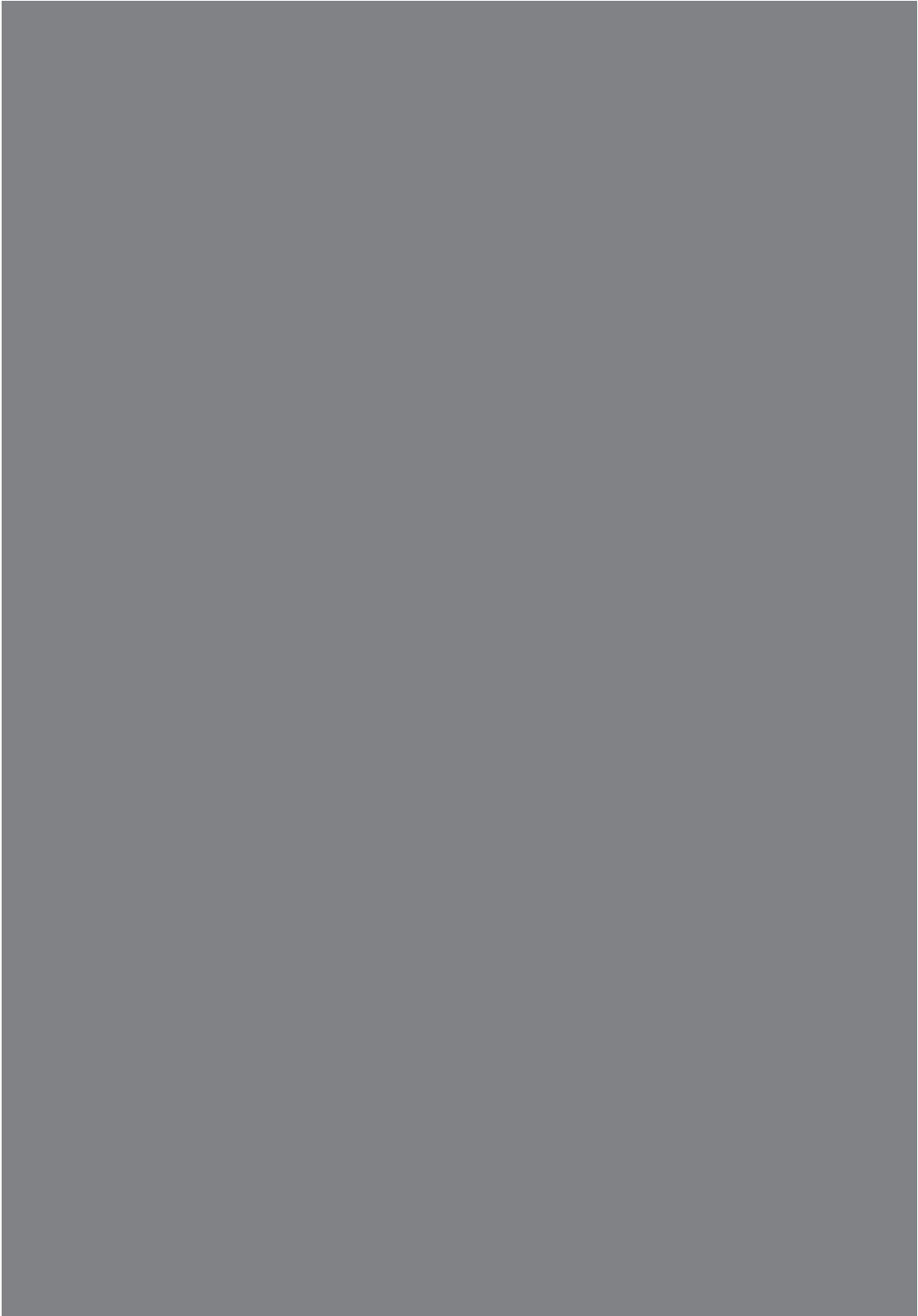
The articles outline our experiences with HIA including: HIA development; incorporating HIA into law; applying HIA to public policies such as industrial policy, water management, local and national agricultural policies; and also HIA capacity building.



Hopefully the lessons learned from these real cases will be helpful not only for the further application of HIA in Thailand, but also for other developing countries working to build healthy nations and happy societies.

National Health Commission  
Healthy Public Policy Foundation  
Department of Health, Ministry of Public Health

Thailand  
November, 2007



# 1

## HIA IN LAW: THE FIRST STEP OF HIA IN THAILAND

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Since the introduction of HIA to Thailand seven years ago, its application has become widespread throughout the country. In the first HIA development plan (2001), four pillars of HIA development were identified: appropriate analytical framework, effective institutional design, mobilizing critical mass, and facilitating enabling environments. This paper focuses on the creation of effective institutional design. It aims to show how effective institutional design has been developed in different political situations.

The year 2007 was a special year for HIA development in Thailand as a result of the Thai National Health Act B.E. 2550 (2007) that became effective on 19 March 2007. It was the first law specifically addressing HIA. This ambitious legislation included several sections on HIA, covering both the rights of Thai people to demand an HIA be conducted and to participate in the HIA process, as well as requiring the development of guidelines and procedures for HIA by the newly established National Health Commission. This paper will review the process and experiences from this long, legislative process.

The paper begins with a discussion of the forces driving Thailand's health system reform. Next explains the drafting process for the National Health Act and how it led to the introduction of health in a new dimension. In the fourth section, the development of healthy public policy and HIA in Thailand is presented. This is followed by a review of the experience of HIA in the legislative process from 2002-2007. We then elaborate on the National Health Act sections specific to HIA. The last part of this paper focuses on how to transform the National Health Act language into real actions.

## 1. The Driving Force of Thailand's Health System Reform

The concepts of healthy public policy and HIA were first introduced to the Thai public during the national health system reform process that began in 2000. This reform provided important opportunities and processes for several changes in Thai society, including the expansion and deeper rooting of healthy public policy and HIA. Therefore, it is important to understand the evolution of this concept in Thai society through the health system reform process.

Although Thailand's overall health status has improved satisfactorily in the last two decades, some evidence of failure in the health system's performance has gradually unfolded<sup>1</sup>. With the success of economic modernization, Thailand now faces new forms of health risks, including HIV/AIDS, traffic injuries, mental stress, and environmental hazards. Thailand's mortality rate (per 1,000 population), which declined from 20 in 1975 to 4.1 in 1986, increased to 5.0 in 1997 and 5.1 in 1998<sup>2</sup>.

The average health expenditure rose nearly nine-fold from US\$12.1 to US\$103.6 from 1980 to 1998. This increasing rate of 9.1% per annum in real terms was higher than the 7.0% annual growth rate of GDP per capita during the same period. Moreover, national statistics show that in 1992 the poor spent a higher percentage of their household income (8.17%) on health care than the rich (1.27%). The difference was approximately 6.4 times higher for the poor. Furthermore, infant mortality rates in non-municipal areas are 1.85 times higher than that in municipal areas, a trend that is widening<sup>3</sup>.

Combined with drastic changes in social and political conditions during the 1980s and 1990s, the national health system faced increased pressure to reform. The climax occurred in 1997 when a new constitution was adopted and implemented, which was largely influenced by a strong civic movement. Under this constitution, health was addressed as a human right not just as public welfare. Consequently, the government was required to provide public health services of the same standard to the entire population. All development programs and projects that have adverse impacts on health were required to have environmental impact assessments conducted that included a public participation process. Civic roles in policy formulations and public decision making, as well as how they were to be implemented were also outlined in this constitution. Last, this new constitution required decentralization of government services including health services<sup>4</sup>.

To address the growing crisis facing the health care system and the new demands by society, the government announced a process of National Health System Reform in 2000. Under the regulation of this announcement, the National Health System Reform was defined as *"a process that leads the transitional management*

*of the national health system to a capable system aimed at good physical, mental, social, and spiritual well-being of the people, as well as people's accessibility to health services that are of good quality, efficient and equitable"*<sup>5</sup>.

## 2. The National Health Act Drafting Process

The National Health System Reform Office (HSRO) was an ad hoc organization under the Health Systems Research Institute (HSRI). It functioned as a division of the National Health System Reform Commission that was established in 2000 by the Prime Minister's Office of Regulation on National Health System Reform. As a secretarial body, HSRO coordinated with all sectors throughout the country to take part in the conceptualization and the formulation of the National Health Act, which was to become the health statute for Thai society. HSRO also used this process as a learning tool for Thai people to improve their health behavior and mode of thinking from the idea of "health repair" to that of "health promotion".

The tangible outcome of this reform was to be the development of the "National Health Act" as a constitutional framework for the national health system. However, unlike other legislation in Thailand, the reform aimed to utilize the drafting process also as an opportunity for health education in Thai society. The concept of "the triangle moves the mountain" was to be applied to help transition Thailand to a better health system: meaning the creation of relevant knowledge, political involvement and social movements would work together as a solid triangle to strengthen one another in furthering this critical initiative. Therefore, active discourse through public hearings was integral to the reform process, bringing new knowledge and a visionary perspective to the development of a desirable health system<sup>6</sup>.

The process began with one national, and six regional, seminars on "The Desirable Health System in Thailand" in 2000. The results of these seminars were put into a background paper on developing the framework for health system reform. In January 2001, the principle framework for national health system reform was developed and presented through a public hearing process for comments and feedback. From April to August 2001, 35,000 people from more than 1,800 organizations joined public hearings held in every province of the country. More than 100,000 written comments were received by HSRO. The draft framework, public comments, and other ideas were discussed and summed up at the first National Health Assembly in September 2001 attended by 1,500 representatives from the various provincial forums<sup>7</sup>.

Based on the results from the National Health Assembly, the first draft of the National Health Act was developed, then subjected to an extensive public review process involving:

- a) public hearings in 500 districts including more than 400,000 people,
- b) twenty public hearings on specific issues (e.g., disability, traditional medical wisdom, health impacts from development projects, etc.), and
- c) provincial health assemblies in 76 provinces attended by more than 40,000 participants.

The results of these three processes were summarized and developed into the final draft of the National Health Act in July 2002. This final draft was submitted for endorsement to the National Health Assembly in August 2002 (with 4,000 participants). Following its endorsement, the draft was submitted to the Prime Minister at the Assembly's closing ceremony. A political commitment was made to pursue these reforms, including through the use of the formal legislative process<sup>8</sup>.

### 3. Health in the New Dimension

Through this reform process, several new ideas for the health system were introduced, demonstrated, deliberatively discussed, and further developed, that led to significant changes in the dimension of health in Thai society.

This new dimension began with the definition of health. In the draft, health was defined as *"the complete status holistically interrelated within the physical, mental, social, and intellectual (or spiritual) balance"*<sup>9</sup>. Therefore, health was no longer specific to physical illness, but was also to address social and spiritual well-being, and was expanded beyond the individual to include the whole society.

Following this new definition of health, health systems were referred to as *"all of the interconnected elements that enhance healthiness and factors relevant to health aspects, such as individual factors; economic, social, political, educational, legal, religious, cultural and traditional factors; scientific and technological factors; as well as those factors specific to public health and public health service"*<sup>10</sup>. In other words, the health system was moving beyond the previous issues and services that defined the "health sector".

Moreover, the draft clearly stressed that *"healthiness is human dignity"*<sup>11</sup> and *"healthiness is the ultimate goal of the community and society"*<sup>12</sup>. In this view, healthiness was to become *"the national ideology with insurance coverage for security"*. The draft also asserted that individuals have the right *"to participate with the state and the community in generating environmental conditions which are appropriate, balanced, safe, of good quality, and meet the standard of*

*continuous normal living in good health with a good quality of life"*<sup>13</sup>. Hence, health was no longer to be the responsibility of health professionals alone. It was to become the challenge and responsibility of everyone in society.

Therefore, the new health systems *"should aim to create health for all, and participation among all sectors should be enhanced to advance health promotion through a continuous building process involving individuals, families, communities, and socio-environmental conditions for reciprocal benefits of living together"*<sup>14</sup>.

In pursuit to this goal, several strategies were employed, including establishing national and provincial health assemblies. The assemblies were defined in the draft Act as *"the standing process which all sectors could intellectually and harmoniously participate and exchange their knowledge and experiences, through a systematic and participatory management process, to reach a state of well-being"*<sup>15</sup>.

Within five years (from 2001-2005), these new dimensions and forums provided a valuable opportunity for several health issues and practices to be broadly demonstrated and deliberatively discussed in Thai society. This included the issues of traditional health practices, local management of public health personnel, holistic health care, health-oriented agricultural policy, healthy public policy and health impact assessment. Some of these issues have led to governmental policy changes. For example, health-oriented agricultural policy set a target of a 50% reduction in pesticide use within the Thai farming sector<sup>16</sup>.

As concluded by Wiput Phoolcharoen, *"just as a drop of water on a tropical plant induces the sudden spread of seeds, the health reform process is pushing the evolving health system forward at a rate never seen before"*<sup>17</sup>.

## 4. The Development of Healthy Public Policy and HIA in Thailand

The issues of healthy public policy and HIA were first raised in 2000 during the national seminar on "Desirable Health System in Thailand" and echoed during the National Health Act public hearings carried out at the provincial level in 2001. This issue became more important for Thai society, mainly because of the increasing trend of health risks associated with environmental hazards such as air pollution, pesticide contaminations, improper waste treatment etc., as well as the evidence and concerns of health impacts from development projects such as large dams, coal-fired power plants, trans-national gas pipelines, highways, etc. After this issue was raised in the reform process, the Health Systems Research Institute (HSRI) set up an academic review process in 2001, which reinforced the



concept of healthy public policy introduced ten years earlier in the Ottawa Charter. The notion of healthy public policy received a strong public response in combating the problems facing Thai society and was therefore incorporated into the framework for national health system reform<sup>18</sup>.

In February 2001, HSRO published the conceptual framework for a national health system and distributed it to relevant sectors and the public for feedback on the development of a desirable framework for Thai society. In discussing HIA, the document states in item 5.2 of the Fifth System "Health Promotion":

*"To give priority to healthy public policy by establishing mechanisms for studying health impacts of: public policy making, large-scale projects, investment policies and legislation and standards' setting. The State must also have mechanisms to hold relevant organizations and individuals accountable for any negative health impact that occur."*<sup>19</sup>

Later, in 2001, the issue of healthy public policy became the first topic of discussion in the first National Health Assembly, demonstrating its relevance and importance within the context of Thai health reform. During the National Health Assembly discussion two HIA studies, one on an industrial development projects and another on an agricultural policy, were presented to illustrate clearly the negative health impacts from well-known governmental policies and projects. As a result of the first assembly, the concepts of healthy public policy and HIA were included in the first draft of the National Health Act, paving the way for HSRI to develop research programs on healthy public policy and HIA in 2002 aimed at supporting further development in healthy public policy and HIA in Thailand<sup>20</sup>.

In the draft Act, healthy public policy refers to *"a progressive guideline that intends to establish a socio-physical environment to facilitate good health and enables people to make their own choices conducive to good health"*<sup>21</sup>.

The draft Act also stressed that the anticipated health systems shall have *"guidelines and measures to establish healthy public policy and an HIA process for public policy aimed at joint learning for all sectors in the society, with sufficient academic utilization, through transparent and accountable mechanisms"*<sup>22</sup>. Furthermore, the draft also asserts *"the right of Thai people to participate in accessing information, proposing, performing, and utilizing the assessment outputs, and rendering decisions that grant approval for policies or projects that may have an impact on health"*<sup>23</sup>.

After a long public hearing process that included special hearings for those who had been affected by development projects, a special session on healthy public policy and health hazards was organized during the second National Health Assembly in 2002, which scrutinized and later endorsed the draft National Health Act in August 2002.

The evolution of healthy public policy in Thailand has been closely linked to the development of HIA. This phenomenon was influenced by intense conflicts over public decision making on several development projects and the ineffectiveness of the country's environmental impact assessment (EIA) system.

In 2002, HIA guidelines and capacity strengthening activities were carried out with participation from both academicians and interested citizens. Under the HSRI research program, more than 50 HIA case studies were conducted addressing policy issues at both national and local levels. Although all the cases were aimed at desirable policy changes, only some reached their expected policy outcomes, highlighting the importance of public participation in healthy policy development. To foster desirable policy changes, five policy networks, including one for energy and industrial policies, were established to seek opportunities and formulate strategies for healthy policy changes. The lessons from these policy networks were later aggregated and developed into an operational framework for healthy public policy formulation in Thailand, as discussed below.

From 2001 to 2007, the concept of healthy public policy and HIA evolved significantly through several actors within key sectors of Thai society. Within civil society several HIAs were conducted by grassroots organizations, the results for which were utilized to frame their policy arguments. At the same time, the concept of healthy public policy became part of these organizations' vocabulary, especially in agricultural policy. In 2005, the Thai cabinet acknowledged the recommendations of the National Health Assembly on health oriented agricultural policy. Moreover, several local administrative organizations and civil society groups applied these concepts to alter their own policies to achieve healthier food and agricultural production, which confirmed that healthy public policy does not pertain to governmental entities alone, but is also the responsibility of society as a whole<sup>24</sup>.

Within the government sector, the Ministry of Public Health established an HIA division in 2002 to support regional and provincial health offices for HIA activities. The Ministry of Natural Resources and Environment also incorporated HIA as a main component to an ongoing EIA reform effort. In 2005, the National Economic and Social Advisory Council (NESAC) also recommended that the Thai government implement and support the development of healthy public policy and HIA. Later that year the cabinet acknowledged these recommendations.<sup>25</sup>

With the continuous efforts of allied health networks, several national health system reform goals have already been put into practice in Thai society. These include HIA development and the annual National Health Assembly. In addition, the issues of health impacts from public policy and HIA development have been a key part of the National Health Assembly each year. For instance, the 2006 National Health Assembly organized a workshop entitled "Immunization for a Green and Happy Society through Health Impact Assessment". The aims of the workshop were to

follow up on old, and develop new, recommendations for HIA development in Thailand.

Along with the draft National Health Act, these other activities have helped to pave the way for broadening the HIA concept in Thai society, deepening its role in public decision making, and improving public policy in this country.

## 5. HIA in the Legislative Process

The recommendations and academic syntheses were included in the content of the National Health Bill, which was then subjected to a public consultation process involving all provincial health assemblies. The last consultation was organized on 8-9 August 2002 during the National Health Assembly. The bill was formally reviewed on 24 September 2002. This proposed law was known as "*the People's Health Act*" and included seven sections pertaining to HIA. They included: Sections 8, 21, 22, and 27 in Chapter 2, Rights, Duties, and Health Security; Section 42(5) in Chapter 3, National Health Commission; and Sections 67(1) and 68 in Chapter 6, Health Strategy and Policy Approach.

HSRO submitted the bill to the government, and the Council of State was then assigned to review it and to amend many sections. This revised bill was called "the Government's Issue". Only two sections referring to HIA remained in the government's bill. These included Section 5, which stated that "*a person has the right to live in a healthy environment and has the collective duty along with governmental agencies to engender such an environment as outlined in paragraph 1,*" and Section 23(5), which assigned the National Health Commission the responsibility and authority to establish criteria and methods for monitoring and evaluating national health reform and public policy health impacts, and ensuring these reforms and policies were implemented. The government's bill was approved by consensus of the House of Representatives on 14 December 2005.

However, a royal decree dissolving the House of Representatives on 24 February 2006 along with the associated political turmoil of the time, which led to a *coup d'etat* on 19 September 2006, derailed the National Health Act process, requiring it to be restarted within the legislative process of the new government.

In late 2006, shortly after the establishment of the National Legislative Assembly, the former government's National Health Bill was submitted for the Assembly's approval with the strong backing of the Minister of Public Health, Mr. Mongkol Na Songkla. An amendment commission was established to review the bill with representatives of the previous health assemblies. With the full support from these commissioners, the rights and participation of citizens in HIA were restored from the original people's bill into Sections 10 and 11 of the government's bill.

Finally, on 4 January 2007, the National Legislative Assembly approved the revised National Health Bill, which is now being enforced.

## 6. Inside the National Health Act

The National Health Act B.E.2550 (2007) is among just a few Thai laws, which were developed using an extensive public participation process. It is also the first law that includes sections on HIA. The Act covers the rights, responsibilities, and functions of health and health security. Moreover, the Act also spells out operational mechanisms and public participation requirements, particularly in the section on the rights of the people to demand HIA be conducted and the rights of people to participate in HIA processes.

The National Health Act intends HIA to be a social learning process, developed to allow all stakeholders in society to examine health impacts of policies, projects, and activities that may affect, or already have affected, a group of people, in order to support the most appropriate alternative through a public decision making process with the goal to protect and promote the health of all Thai people.

HIA is both a social mechanism and a social process for applying a participatory approach to healthy public policy. Therefore, the institutional structure of HIA itself does not require a specific institute or administrative body. Rather, HIA should be applied by stakeholders in all sectors in order to protect and support the rights and the health of Thai people.

Since the rights to public participation are core values of HIA, the National Health Act has three sections on HIA as follows:

**Section 10** In a case where there exists an incident affecting public health, a State agency containing information relating to such an incident shall expeditiously disclose such information and ensure the protection thereof to the public.

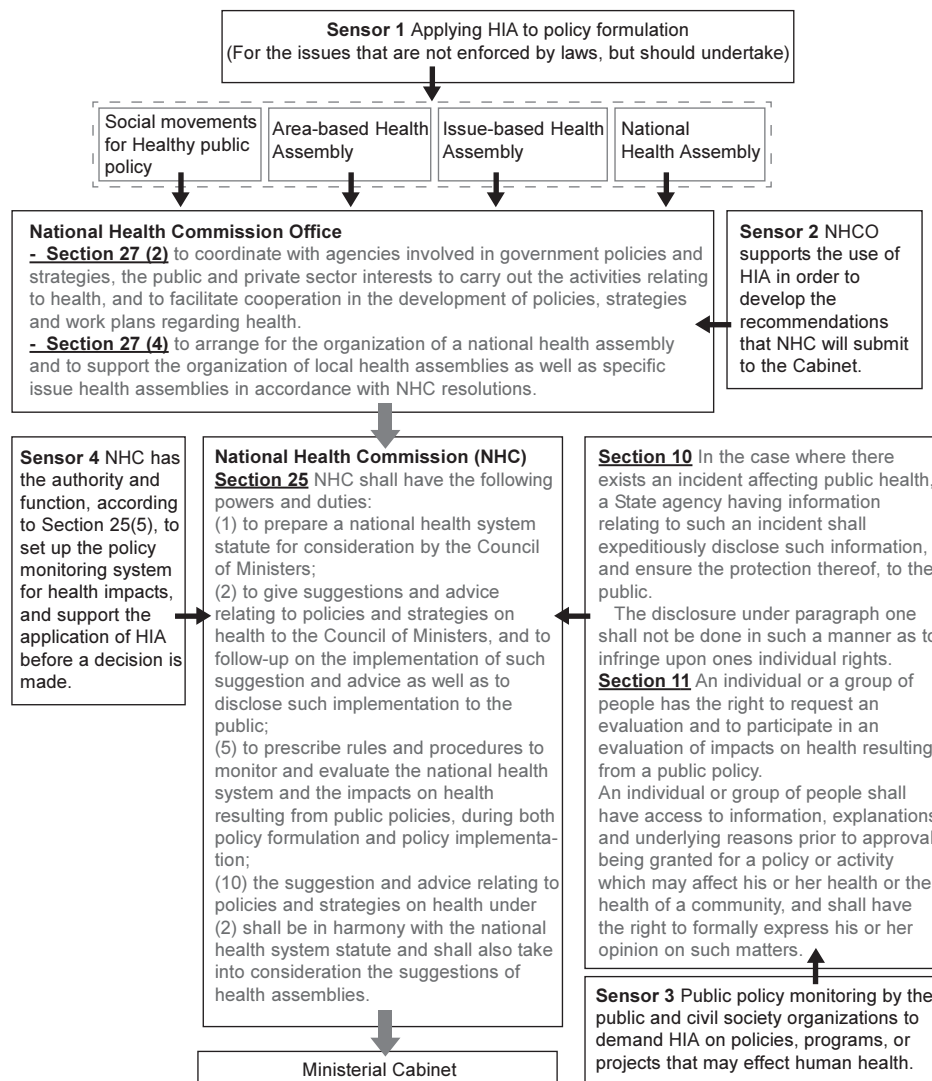
**Section 11** An individual or group of people has the right to request an evaluation, and to participate in the evaluation, of impacts on health resulting from a public policy.

An individual or group of people shall have access to information, explanations and underlying reasons prior to approval being granted for a policy or activity which may affect his or her health or the health of a community, and shall have the right to formally express his or her opinion on such matters.

**Section 25 (5)** The National Health Commission (NHC) shall have powers and duties to prescribe rules and procedures to follow up and evaluate the national health system and the impacts on health resulting from public policies, both during policy formulation and implementation.

According to this National Health Act, there are several entry-points for HIA applications as identified in Figure 1. Obviously, within this framework, Thai people can apply HIA in various ways, both through health assemblies and through the National Health Commission. This reflects the flexibility of HIA applications in Thai society, which has been an objective since the first step of HIA development in Thailand.

**Figure 1 Health Impact Assessment Entry Points as outlined in the National Health Act B.E. 2550 (2007)**



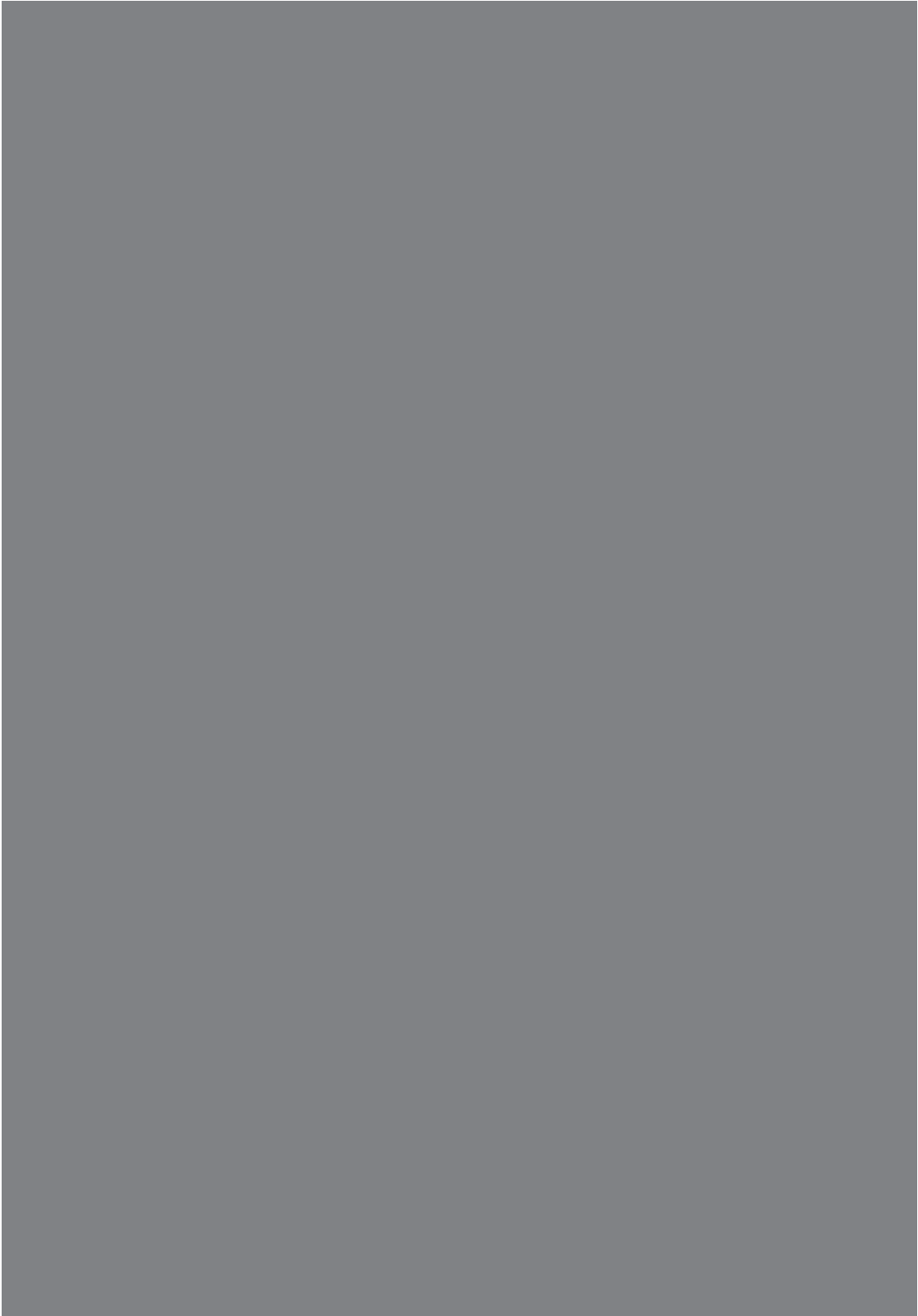
## 8. Turning the Act into Actions

In order to develop HIA as a social process for protecting people's rights to good health, and building a more healthy society, as intended by the National Health Act, the following actions should be taken:

1. Develop an institutional structure for HIA, including developing guidelines and procedures for applying the individual and community rights of the National Health Act, and establishing HIA principles and guidelines.
2. Expanding the HIA network to all stakeholders, in order to instill commitments for the regular practice of employing HIA. This includes the publication of a people's handbook for developing healthy public policy according to the new constitution and the National Health Act, the facilitation of an HIA network in Thailand's universities, and the establishment of a public advisory unit for applying individual and community rights in healthy public policy processes.
3. Supporting Health Assemblies at all levels, including area-based, issue-based, and within the National Health Assembly, to apply HIA as a social learning process for healthy public policy. According to the Act, health assemblies are the main mechanism for developing healthy public policy, therefore, the National Health Commission Office (formerly the National Health System Reform Office) should work in collaboration with the HIA network as well as the network of health assemblies.
4. The essential contents of HIA should be included in a national health system statute. Section 46 of the Act states that the NHC shall prepare a statute, for approval by the Council of Ministers, for a national health system to serve as a framework and guideline in setting policy, strategy and implementing activities with respect to national health. Consequently, according to Section 48, the statute on the national health system and the policies and strategies on health under Section 25 (2) approved by the cabinet shall be binding on relevant state agencies in the performance of activities under their jurisdictions.

These are the key challenges that must be met to transform the National Health Act into action for Thai society. The establishment of the sub-commission for healthy public policy, the HIA working group and the strengthening of the HIA network are now planned as essential mechanisms for facilitating all HIA applications. Although, the Act provides a firm basis for meaningful actions, it is the actions not the act itself, which determines the success of HIA development.

- <sup>1</sup> Wiput Phoolcharoen, 2004. *Quantum Leap: The Reform of Thailand's Health System*. Health Systems Research Institute, Thailand. [www.hsri.or.th](http://www.hsri.or.th) .
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- <sup>3</sup> Wiput Phoolcharoen, 2004. (Op.Cit.).
- <sup>4</sup> Summarized from Wiput Phoolcharoen, 2004. (Op.Cit.).
- <sup>5</sup> Quoted by Wiput Phoolcharoen, 2004. (Op.Cit.).
- <sup>6</sup> Summarized from Wiput Phoolcharoen, 2004. (Op.Cit.).
- <sup>7</sup> Summarized from Wiput Phoolcharoen, 2004. (Op.Cit.).
- <sup>8</sup> Summarized from Wiput Phoolcharoen, 2004. (Op.Cit.).
- <sup>9</sup> National Health System Reform Committee. 2002. *The Draft Law of National Health as a Thais' Health Constitution (Revised Edition: September 24, 2002)*. Health System Reform Office. Section 3.
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- <sup>21</sup> National Health System Reform Committee. 2002. (Op. Cit), Section 3.
- <sup>22</sup> National Health System Reform Committee. 2002. (Op. Cit), Section 67.
- <sup>23</sup> National Health System Reform Committee. 2002. (Op. Cit), Section 67.
- <sup>24</sup> Wiput Phoolcharoen et al, 2006. (Op. Cit.)
- <sup>25</sup> Wiput Phoolcharoen et al, 2006. (Op. Cit.)





# 2

## THE QUEST FOR DEVELOPMENT ALTERNATIVES: HIA AND THE HEALTH ASSEMBLY ON INDUSTRIAL DEVELOPMENT IN MAB TA PHUT AND RAYONG PROVINCE

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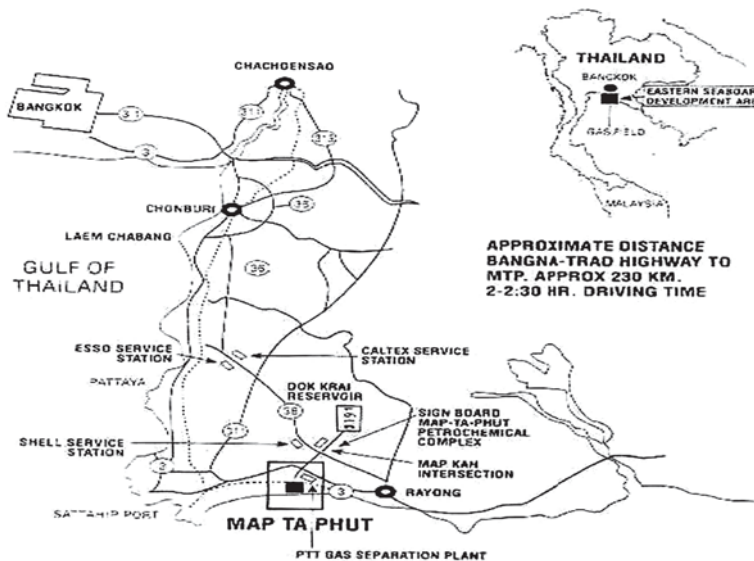
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## 1. Mab Ta Phut and Industrial Expansions

Mab Ta Phut is a seaside area in Rayong province. It used to be a small, rural farming and fishing community, but all that changed in 1981 when Thailand launched the Eastern Seaboard Development Program, with Mab Ta Phut as the focal area for new, large-scale industrial development. This was Thailand's largest-ever regional development plan.

Since 1981, natural gas pipelines, power plants, industrial seaports, petroleum refinery facilities, petrochemical factories and their downstream industries, other industries and supporting industrial infrastructure have completely transformed the Mab Ta Phut area. Billions of US dollars have been invested in these industries and tens of thousands of jobs have been created through direct and indirect employment. Mab Ta Phut Industrial Estate is the largest industrial estate in Thailand, comprising three industrial estates encompassing 10,000 rai (about 1,600 acres) and 95 large industrial plants.

Picture 1 The Eastern Seaboard and Mab Ta Phut Industrial Estate





However, the impacts of this industrial development have not all been positive. Many environmental, social, and health problems have materialized. Ten years ago, pollution in the Mab Ta Phut area became national headline news. Hundreds of students at a high school adjacent to a major oil refinery were becoming ill due to airborne contaminants. Although many ministers and authorities eventually became active in efforts to solve the problem, after several years, little had changed. The school was forced to relocate out of the area.

In the beginning of 2007, pollution and related health problems at Mab Ta Phut had again reached a crisis point, once again generating headlines in many newspapers. Ministers and authorities jumped into the fray with commitments to solve the problems. Among the various measures to mitigate the pollution and ease the problems was to relocate Mab Ta Phut Industrial Estate's local hospital out of the area.



**Picture 2 School and people affected by the 1997 pollution crisis**

Despite known environmental, health, and social problems associated with industrial and economic development, extensive industrial expansion is planned for both Mab Ta Phut and other areas in Rayong province. The Petrochemical Industry Master Development Plan 2004-2018, developed by the Ministry of Energy, has been the key driver of this expansion.

At present, the Mab Ta Phut Industrial Estate as well as the other industrial estates in Rayong are implementing this plan. A large petrochemical complex is under construction in the north of Mab Ta Phut area. Numerous companies have already invested heavily in the area with plans for new industrial plants, power plants, etc. In Mab Ta Phut area alone, 18 large industrial projects have submitted applications along with Environmental Impact Assessment reports seeking governmental approval. More large industrial projects are expected in the future.

Therefore, the industrial development in the Mab Ta Phut area as well as in Rayong province is one of the most critical challenges to healthy public policy in Thai society.



**Picture 3 Area slated for expansion at Mab Ta Phut Industrial Estate**

## 2. Brief Historical Background

Local people in the Mab Ta Phut area have suffered not only from water, ocean, soil and air pollution, but also from natural resources degradation, social problems, and health impacts. They have repeatedly attempted to raise their voices and push for solutions. They have received support in their struggle from NGOs, academics, some authorities, and HIA practitioners. Nonetheless, industrial expansion seems to proceed unabated. (See the historical background in Table 1)

Table 1 Historical Background

Year	Events
1980s	Eastern Seaboard Development Program begins, followed by the establishment of the Mab Ta Phut Industrial Estate.
1997	Air pollution crisis unfolds at a high school adjacent to a large oil refinery. Numerous ministers and authorities work to address the problem, but the only result is the school is moved to a new area.
1998-2000	Several studies, including a Health Risk Assessment and Management study, were conducted by public health and environmental authorities.
2001	An HIA of the Mab Ta Phut Industrial Estates was conducted and presented to the Demonstration Health Assembly.
2002-2003	Two more HIAs were conducted of the Mab Ta Phut case. One HIA focused on results from extensive community participation, while the other emphasized scientific analysis of air pollution and related health impacts.
2003	Local people in Mab Ta Phut complained and protested against a proposed coal-fired power plant. The plant was built anyway and is now operational.
2005	A study on volatile organic compounds (VOCs) in the Mab Ta Phut area conducted by the NGOs determined the presence of several carcinogenic VOCs at concentrations above international standards. The report was released to the public and the media.
2006	An analysis by the Pollution Control Department found that there were more than 40 VOCs in the Mab Ta Phut area, of which 20 are known carcinogens. At Mab Ta Phut, 19 of these carcinogens exceed the screening levels set by the US-EPA Region 6.
Dec. 2006	A public seminar was held by the National Health Commission Office and NGOs. A report synthesizing the data on VOCs, other pollutants, health impacts, and social impacts was released to the public and the media.

Year	Events
Jan. 2007	<ul style="list-style-type: none"> <li>- Extensive news coverage of the Mab Ta Phut case.</li> <li>- Referring to the Environmental Act, local people and supporting organizations demand the government announce the enforcement of 'the Pollution Control Area' in the Mab Ta Phut area. This was strongly opposed by authorities and the industrial sector.</li> </ul>
Feb. 2007	<ul style="list-style-type: none"> <li>- The National Environmental Board, chaired by the Deputy Prime Minister and the Minister of Industry, declines enforcement of 'the Pollution Control Area' and instead, establishes two committees to undertake further study of potential solutions.</li> <li>- The media reports that further industrial development in the area will be put on hold.</li> </ul>
Mar. 2007	<ul style="list-style-type: none"> <li>- The National Health Act B.E.2550 enters into force.</li> <li>- The government announces the Pollution Control Action Plan for Rayong Province 2007-2012 and plans to announce standards for nine VOCs.</li> </ul>
Apr. 2007	<ul style="list-style-type: none"> <li>- Local people in Mab Ta Phut submit a letter to the National Health Commission Office to exercise their HIA rights according to the National Health Act.</li> <li>- The media reports progress on pollution control, but only cites official figures. It is then announced that the government supports continued development at Mab Ta Phut.</li> </ul>

Source: By the author

Picture 4 Recent protests against industrial development in Rayong



Consistent with the language of the National Health Act B.E.2550, Mab Ta Phut residents exercised their rights and submitted a letter to the National Health Commission Office describing the environmental, social and health impacts, including specific diseases, along with proposed solutions. This Act was developed with one of the most extensive public participation drafting processes.

- According to Article 5, Mab Ta Phut and Rayong people have the right to live in a healthy environment.
- According to Article 10, all related state agencies must expeditiously provide and disclose health impacts resulting from the industrial activities in the Mab Ta Phut area.
- According to Article 11, before proceeding with any industrial development in the area, an HIA on the industrial development policy in Rayong province must be conducted with meaningful public participation. The definition of health in the HIA must be consistent with the definition in Article 3, which states that *"health means the state of human being which is perfect in physical, mental, intellectual and social aspects, all of which are holistic in balance"*.
- According to Article 40, the Health Assembly must utilize all available information to address the conflicts and solve the problems in the area. The Health Assembly should also empower the local community to participate meaningfully in public policy development in order to foster a safe and healthy environment for Mab Ta Phut and Rayong residents.

### 3. Environmental and Health Impacts

There are various forms of pollution, natural resources degradation, social impacts, and health impacts resulting from the industrial development in the Mab Ta Phut area, the effects of which also extend deeper into Rayong province. Here we address the details of these impacts.

#### 3.1 Environmental impacts

##### *Air pollution*

First, for a long time Volatile Organic Compounds (VOCs) have been a serious danger to Mab Ta Phut residents. Even though VOCs are well known for their human health impacts, and since 1998 several studies of the Mab Ta Phut area confirm the presences of many VOCs, not until 2007 were any preventative mechanisms, such as environmental standards, ever implemented. Therefore, it is clear that all of the EIA studies never analyzed VOCs at all. It was not until 2006 that the Pollution Control Department officially acknowledged the existence of more than 40 VOCs in the area, 19 of which were carcinogens with concentrations 1.3

to 693 times the standards set by USEPA Region 6. This information was presented to the public along with information on other impacts, which led to many actions, including the government's announcement of standards for nine VOCs.

**Picture 5 The analysis of Volatile Organic Compounds in the Mab Ta Phut area by the Pollution Control Department in 2006**

**Found 40 VOCs**  
(VOCs 24 hour Average)

**20 are carcinogens, 19 of which with concentrations exceeding USEPA Region 6 screening levels by 1.3 to 693 times!**

ตารางที่ ๕ ค่าความเข้มข้นสารระเหยอินทรีย์ (VOCs) ในบรรยากาศในพื้นที่ภาคอุตสาหกรรม 24 ชั่วโมง

สารมลพิษ	ค่าสูงสุดที่วัดได้ (µg/m <sup>3</sup> )	Screening Levels (µg/m <sup>3</sup> )	จำนวนที่สูงกว่า Screening Levels
Acrolein (2-propenal)	14.58	0.021	693
Trichloroethylene	8.33	0.017	489
1,2-dichloroethane (Ethylene Dichloride)	19.04	0.074	256
Chloroform (Trichloromethane)	20.03	0.064	238
Isoprene (1,3-butadiene,2-methyl)	27.19	0.20	135
1,3 Butadiene	7.06	0.064	110
Tetrachloroethane (Carbon Tetrachloride)	10.44	0.13	79
cis-1,3-dichloropropene	31.19	0.48	64
Vinyl Chloride (Chloroethene)	7.39	0.16	45
Acetaldehyde(Ethanal)	35.19	0.87	39
Benzene	8.07	0.25	31
Benzyl Chloride	1.10	0.04	26.5
p-dichlorobenzene (1,4-dichlorobenzene)	4.01	0.28	13
Bromoform (tribromomethane)	8.95	1.7	4
1,4-Dioxane (1,4-Dioxylene oxide)	2.28	0.61	2.7
Dichloromethane (Methylene Chloride)	13.80	4.1	2.4
1,1,2,2-tetrachloroethane	0.09	0.033	1.7
Chloroethane (Ethy Chloride)	5.59	2.3	1.5
Chloromethane (Methyl Chloride)	2.56	1.1	1.3

All of these VOCs are related to the use of raw materials or primary inputs by plants in the industrial estate. It has been found that each year total vinyl chloride use amounted to 610,000 tons, benzene more than 600,000 tons, ethylene dichloride more than 250,000 tons, and solvent use such as hexane totaled approximately 2 million liters per year.

Other significant air pollutants were NOx and SO2, emitted primarily by power plants and through industrial production processes. Preliminary results from a study on the environmental carrying capacity of the Mab Ta Phut area showed that if all 64 plants in Mab Ta Phut released these two air pollutants at levels allowed by their respective EIA approvals, SO2 and NOx concentrations would exceed air quality standards. Therefore if industrial development continues, Mab Ta Phut air quality would very likely be severely affected.



### **Water pollution**

Groundwater contamination from heavy metals is another serious problem for all communities surrounding the Mab Ta Phut Industrial Estate. A recent analysis<sup>i</sup> found that water samples from all 80 local wells in the Mab Ta Phut area are contaminated with several heavy metals, some of which in concentrations 6 to 151 times the Thai standard.

**Table 2 Heavy metals analysis of water samples from local wells in Mab Ta Phut**

Heavy Metal	No. of samples that exceed standard	Quantity (mg/liter)				
		The Standard	Average	Maximum	Minimum	Maximum above standard (x 100%)
Cadmium	65	0.005	0.023	0.030	0.0030	6
Iron	40	0.5	2.969	75.717	0.0139	151
Manganese	29	0.3	0.610	10.301	0.0050	34
Lead	28	0.05	0.108	2.329	0.0007	47
Zinc	1	5	0.762	49.237	0.0009	10

**Note:** Standard represents Thai water quality standards for domestic use in rural areas

**Source:** Arpa Wangkiat, 2007, Study of Heavy Metal Quantity in Local Wells in Mab Ta Phut Municipality, Muang, Rayong Province, Environmental Engineering Department, Rangsit University (in Thai)

Furthermore, both surface and seashore water quality in the Mab Ta Phut area are rapidly declining. Measurements of the surface water quality by the Pollution Control Department found that the BOD and the concentration of heavy metals e.g. Cu, Mn, Ni and As, exceeded acceptable standards. Surface water pollution leads to the accumulation of heavy metal in fishery resources, such as shellfish and fish, as well as increasing the likelihood of plankton blooms.

### **Shoreline erosion**

Shoreline erosion is another serious problem in the area. The scale of industrial development, particularly the large land reclamation projects and the construction of the industrial seaport, have seriously affected tidal and seashore ecology. Several beaches were completely destroyed and many break walls were constructed to prevent further erosion from affecting roads and buildings. Mab Ta Phut is now among the most critical areas affected by seashore erosion in Thailand<sup>ii</sup>.

### **Hazardous waste**

Hazardous waste treatment facilities in the area are of insufficient capacity. Therefore, waste must be transported to facilities in other provinces, but monitoring of transported waste is neither fully developed nor enforced. This results in extensive illegal dumping of hazardous waste in both the Mab Ta Phut area and nearby provinces.

The illegal dumping of hazardous waste causes problems for local people, such as irritating odors, and soil and water contamination. Many local residents experience irritation from pumping water adjacent to the dumping area.

**Picture 6 Seashore erosion and an industrial waste treatment facility in Mab Ta Phut<sup>iii</sup>**

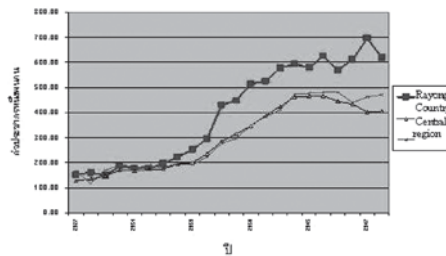


## **3.2 The People's Health**

### **Physical health**

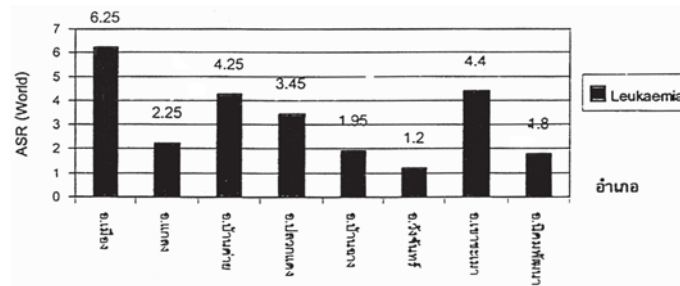
Concerning respiratory diseases, outpatient visits of Rayong residents from 1984 - 2005 were compared with those of residents in the central region and the country as a whole. The results show that at the beginning of the period outpatient visits by residents in Rayong were slightly higher than those of the central region and the country as a whole. Since 1992, however, the results show that Rayong outpatient visits increased significantly to 696.09 per thousand in 2004, while the country as a whole has seen respiratory outpatient visits decline since 2001.

**Outpatient Respiratory diseases 1984-2004**  
(per one thousand population)

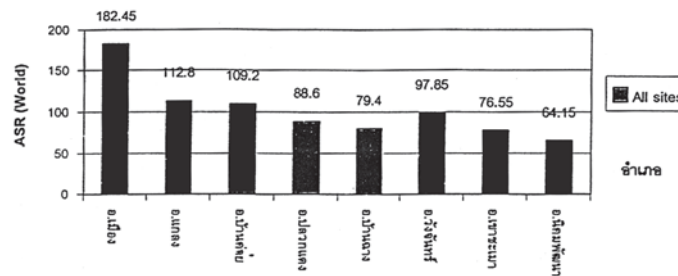


**Figure 1 Outpatient respiratory diseases**

For cancers, an epidemiological study for the period 1997-2001 by the National Institute of Cancer found that cancer and leukemia rates are clearly higher in the Muang district (the location of the Mab Ta Phut Industrial Estate) than in other districts of Rayong. A later study for the period 2001-2003 found lung cancer and leukemia rates increasing further.



**Figure 2 Cancer statistics for each district of Rayong**



**Figure 3 Leukemia statistics in each district of Rayong**

**Note:** the statistics are the average per one hundred thousand people, both males and females.  
**Source:** National Epidemiological Study on Cancer (1997-2001) by the National Institute of Cancer

A comparative analysis of outpatient treatment of cancer tumors in Rayong from 1997 to 2005 shows an increase of nearly three times, from 444.3 persons per one hundred thousand in 1997 to 1,263 in 2005. This trend mirrors that for instances of birth defects, which increased from 48.2 per one hundred thousand in 1997 to 163.8 per one hundred thousand in 2005.

In addition to the illnesses experienced by residents in and around the Mab Ta Phut Industrial Estate, a health survey of workers in the estate by the Provincial Health Office confirmed that many employed in plants using toxic chemical as raw materials have unusual health indicators.

- 89 of the 161 employees working with toxic chemicals at the TP Petrochemical plant had unusual health indicators.
- 88 of the 237 employees working with toxic chemicals at the Thai Plastic plant had unusual health indicators.
- 150 of the 220 employees working with toxic chemicals at the Aromatic Thailand Ltd. plant had unusual health indicators.

Moreover, a survey in the Mab Ta Phut area by the Department of Social Welfare and Labor Protection in January 2007 found that, among the 65 plants in the Industrial Estate, 2,461 workers in 20 plants were at risk. There were 483 workers (19%) with health problems that required treatment by occupational health experts.

### ***Mental health***

The social transformation arising from industrial development can cause various, negative mental health impacts to the quality of life of local residents. There is an increasing rate of mental health problems in Rayong. Moreover, the suicide rate in Rayong is 72.17 per thousand, which is among the highest in the country and about 11 times higher than the national average.

### ***Social health***

The negative impacts from the industrial development are not limited to pollution and environmental impacts, but also include many social problems and impacts that are consequences of the shift to an industrial society. The key driver in the case of Mab Ta Phut area is the large number of migrant workers, both from other parts of Thailand as well as neighboring countries, specifically Cambodia, Myanmar, and Laos.

Hundreds of thousands of migrant workers come to live temporarily or permanently in the communities, but there has been no infrastructure preparation, no social programs established, nor any suitable administrative systems put in place. Only about 40 percent of the population in Mab Ta Phut are local residents. Social problems in the communities include:

- Heavily populated slum areas lacking sufficient infrastructure and social services creating problems with sanitation, wastewater, traffic, road accidents, etc.
- Transmission of communicable diseases from migrant workers.
- Large numbers of transient workers complicating community management and development efforts.
- Low levels of integrity and trust impeding productive social relations and cooperation.

Furthermore, economic pressures force people to change their occupation and lifestyle in order to increase incomes. Some people turn to crime. Robberies and crime rates in Rayong have been increasing. Pubs, bars and motels have increased in number and prostitution has become widespread. Some sexual communicable diseases in Rayong are quite prevalent. The instance of gonorrhea is 30.10 infections per thousand people, four times the national average, and third highest in the country. The number of new HIV/AIDS patients in Rayong is 15.8 per 100,000 people, which is five times the national average and the highest rate in the country.<sup>iv</sup>

### ***Child and youth problems***

Table 3 reveals that problems affecting children and youth in Rayong have reached a critical level. The issue is most pronounced in industrial areas such as Mab Ta Phut, due to what are known as "Camp-site Children": children living in migrant worker camps. These children are constantly on the move with their parents, resulting in frequent changes of schools. Their grades and attendance levels are generally poor and some leave school and turn to drugs and crime. The number of these children increases with the expansion of the industrial estate.

**Table 3 Selected children and youth indicators in Rayong province and nationally**

<b>Indicator</b>	<b>Rayong</b>	<b>National average</b>
Children and youth suicide rate (per one hundred thousand population)	299.61	33.98
Children and youth infected with HIV	21.46	9.82
Percentage of handicapped children and youth with educational opportunities	48.28	75.18
Percent of vocational school students who have engaged in sexual relation	48.96	27.74
Youth between 15-19 years old who have given birth	4,743.70	1,932.64
Percentage of children and youth who attend religious services	26.01	45.62

Source: UNDP, Thailand Human Development Report 2007

### ***Intellectual and Spiritual health***

It is clear that the intellectual and spiritual health of Mab Ta Phut and Rayong people is affected by industrial development. The community values of the once primarily agricultural and fishing society have been replaced by individual values based in materialistic consumerism. Local temples are no longer the center of a community. Kindness and sympathy within the community has become uncommon. Also, the indigenous knowledge of Rayong people of agriculture and fisheries management is no longer useful to the current generation. Modern technology imported from other countries is more attractive to the young people, either mobile phones for their personal lives, or the huge machines they see in industrial factories.

## 4. The Rayong Paradox

Has industrial development in Rayong over the past 25 years generated economic prosperity and a better quality of life for local people? The answer might be yes if only the Gross Provincial Product (GPP) per capita is used, as Rayong has the highest GPP per capita in the country.

However, other economic indicators show that most Rayong residents have not gained the anticipated economic benefits that were supposed to follow the industrial development. Table 4 illustrates how Rayong's household income, household debt, poverty and unemployment differed little from residents in Nakhon Pathom province, which has a GPP per capital 1/6th the amount of Rayong's.

Furthermore, income distribution has become more inequitable. A Gini coefficient comparison of these two provinces shows them moving in opposite directions. Rayong's Gini coefficient increased from 0.376 in 1996 to 0.455 in 2002, whereas Nakhon Pathom's decreased from 0.393 to 0.351 over the same period.

**Table 4 Comparative development indicators of Rayong, Nakhon Pathom and Thailand**

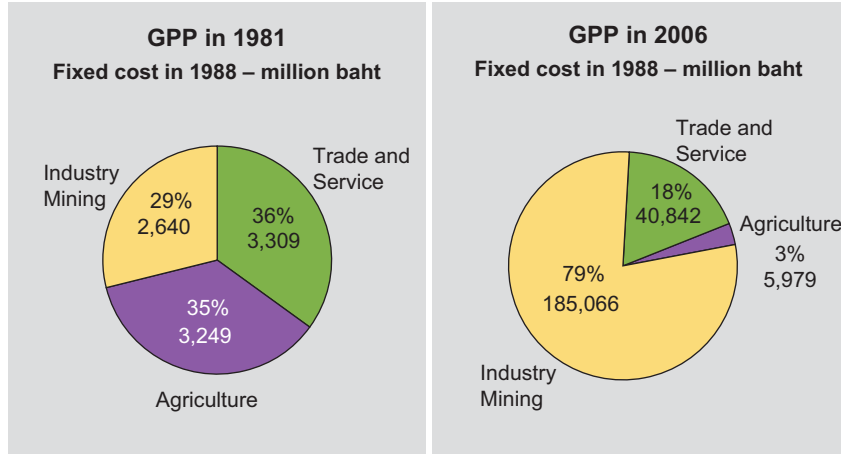
Indicator	Rayong	Nakhon Pathom	Thailand
Gross Provincial Product in 2004 (baht/capita/year)	691,093	121,381	101,304
Household income (baht/month)	21,083	20,478	14,778
Households with debts (percent)	66.0	65.2	66.4
Proportion of poor people (percent)	5.6	2.36	11.25
Unemployment rate (percent)	1.8	0.5	1.3

Source: UNDP, Thailand Human Development Report 2007

So what happened to the development process? The answer lies with the shift in economic structure from a more balanced "Three-Pillar Economy" to the "One-Pillar Economy" that focuses primarily on industrial growth.

Prior to the Eastern Seaboard's development in 1981, Rayong had a balanced economic structure using three modes of production. The service sector contributed 36 percent to the GPP, agricultural 35 percent and industry 29 percent. However, the "Three-Pillar Economy" was abandoned after the Thai government launched its industrial development plan for Rayong, motivated by Rayong's proximity to Bangkok, its industrial seaport and natural resources. Today Rayong has changed radically. Industry now accounts for 79 percent of GPP, while the services and agriculture sectors contribute only 18 and 3 percent respectively. So the "Three-Pillar Economy" has been replaced by a "One-Pillar Economy" (Figure 4).

**Figure 4 Comparative GPP Structure of Rayong from 1981 and 2006**



Although the "One-Pillar Economy" has boosted economic growth, Rayong faces a greater risk of economic failure due to its high dependency on industry, as industry is vulnerable to many uncontrolled international and domestic variables. In contrast, the "Three-Pillar Economy" provided an economic safety net for Rayong's development. Should one sector falter, the other two sectors could help to sustain the province's economic growth and the well-being of local residents.

Table 5 shows how key industries in Rayong have a high dependency on imported materials, increasing the vulnerability of the "One-Pillar Economy" to consistently deliver benefits to local people. For example, imported materials for petrochemical industries represent upwards of 50 percent of a product's values. If these industries produce 100 baht in value, half of that is paid to import the materials, leaving only 50 baht for the domestic economy, and even less for Rayong.

**Table 5 Proportion of imported materials for key industries in Rayong**

Industries	Proportion of Import content (Percent)
1. Oil refining industries	50.7
2. Chemical industries	39.6
3. Automobile and auto parts	66.6
4. Electric and accessories	64.2
5. Metal and steel products	40.7
6. Plastic industries	25.8
7. Wood and furniture	30.5
8. Rubber products	22.1
9. Canned seafood	23.4
10. Rubber	8.4

Source: National Economic and Social Development Board, 2005

Additionally, the benefits from the "One-Pillar Economy" have been insufficiently allocated so as to improve the quality of life for Rayong residents. Relative to its GPP, investments in programs such as education, health, social welfare, housing and community development, religion, culture and recreation (Table 6) have been comparatively low. This is why Rayong faces many serious social problems. The rate of new HIV/AIDS patients, rate of households affected by pollution, number of crimes in Rayong and the rate of orphan/children affected by HIV are all worse than those in Nakhon Pathom, and worse than the country as whole (Table 7).

Unquestionably, Rayong's lofty GPP only creates an illusion of prosperity. In reality, local people have become victims of this new development. This raises the following question - is it time for the people of Rayong to ask for alternative development paths that support a more balanced economy, prosperity and social well-being?

**Table 6 Comparative social investments in Rayong, Nakhon Pathom and Thailand in 2006**

Index	Operating expenses			Investment by government		
	Rayong	Nakhon Pathom	Thailand	Rayong	Nakhon Pathom	Thailand
Education	2,495	3,543	3,005	33	46	97
Health	1,323	954	837	4	5	10
Social welfare	90	112	100	32	1	10
Housing and community	48	48	64	0	0	22
Religion, culture and recreation	37	30	46	0	5	2
<b>Total Social Investment</b>	<b>3,993</b>	<b>4,687</b>	<b>4,052</b>	<b>69</b>	<b>57</b>	<b>141</b>

Source: National Economic and Social Development Board

**Table 7: Selected social development indicators for Rayong, Nakhon Pathom and Thailand**

Indicators	Rayong	Nakhon Pathom	Thailand
New HIV/AIDS patients (per 100,000 population)	15.8	0.6	3.3
Households affected by pollution (percent)	8.2	4.2	4.7
Orphans, abandoned children, children affected by HIV (per 1,000 population)	2.3	0.5	2.5
Number of crimes (per 100,000 population)	27	24	16
Drug dealing arrests (per 100,000 population)	318	236	170
Illiteracy (percent)	4.1	3.5	5.4

Source: UNDP, Thailand Human Development Report 2007



## 5. The Health Impact Assessment and Health Assembly

It is clear that Rayong's problems and impacts from industrial development are not restricted to pollution and environmental degradation. The impacts on natural resources, social well-being, and general health are also serious. The need for HIA in this case has little to do with generating a new study that provides more details on impacts and problems. Rather, HIA is needed to help devise alternative development paths that can provide solutions to the "business-as-usual" industrial development future. Moreover, social empowerment is a key component in developing and gaining support for alternatives, thus the deliberative policy process intrinsic to HIA is crucial for transforming alternative proposals into real solutions.

Therefore, the HIA for this case is being conducted to support the health assembly process. As previously explained in section 2 above, the health assembly's aim is to utilize knowledge and intellect to solve problems as well as to empower local stakeholders and communities to participate meaningfully in the public policy process.

To help conceptualize the numerous impacts and problems, two mappings were undertaken through field trips, interviews, and discussions with various stakeholders in Rayong, including local people, community organizations, NGOs, academics, local administrative organizations, governmental officials, etc.

All information and data relating to all aspects of the threats were put on a map of Rayong. This map was called the "Health Threats Map" and included various pollution sources, hazardous waste facilities, illegal waste sites, chemical accident cases, seashore erosion areas, industrial estates, large power plants, and socially risky areas (high density of bars and motels).

Similarly, all information and data relating to local resources and efforts to protect and promote health were put on another map of Rayong. This map was called the "Hopes for Healthy Rayong Map". It included environmental organizations, cultural conservation groups, youth groups, community forests, sustainable agriculture networks, local fisherman groups, renewable energy plants, national parks, and nature sites for tourists.

In addition to these two mappings, the "Rayong Paradox" study outlined in section 4 above, strongly questioned the belief that economic growth generates a good quality of life. The two mappings and the "Rayong Paradox" were presented and discussed in the first forum of the Health Assembly on 9 October 2007.

Based on the issues and the conclusion from the first forum, it was clear that different development scenarios should be an important part of the process to identify development alternatives. Ten-year projections of the "business-as-usual" scenario with industrial development fully implemented should be compared to the "alternative" scenarios developed with extensive participation of local stakeholders and communities. At minimum, the core components of the different alternative scenario should consist of the following:

- Different economic development, economic structures, and distribution of benefits.
- Different natural resources' demands and management systems.
- Frameworks for future industrial development.
- Different social investment and social development.
- Child and youth development.

All of these components and alternative development scenarios will be synthesized as development alternatives to be presented and discussed in the second forum of the Health Assembly in January 2008, as well as through other public communication channels, such as local newspapers, public radio, community radio and the internet.

Next, the health impacts of the "business-as-usual" scenario will be assessed and compared with those of the development alternative. According to the National Health Act, health is defined as holistic health; therefore, the HIA must address all impacts: environmental, economic, social, intellectual and spiritual. Furthermore, public participation is mandatory, since the right to participate in the HIA is affirmed by the law.

The HIA together with the recommendations for healthy public policy will be presented and discussed in the third forum of the Health Assembly, planned for April 2008. Finally, the HIA and the recommendations will be presented to the National Health Commission, the National Health Assembly, and other related organizations including NGOs, local groups, and local administrative organizations. This process is illustrated in figure 5.

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<sup>i</sup> Arpa Wangkiat, 2007, *The Study of Heavy Metal Quantity in the Local Ponds in Mab Ta Phut Municipality, Muang, Rayong Province*, Environmental Engineering Department, Rangsit University (in Thai)

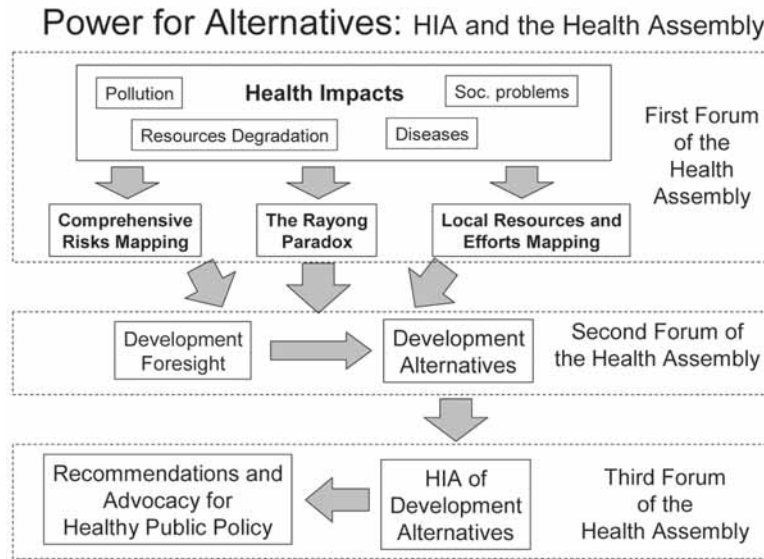
<sup>ii</sup> Pichaya Anantawong and Decharut Sukkumnoed, 2004, *The Heart Signal of the Eastern Region*, The Research and Development Program on Healthy public policy and Health Impact Assessment, Health Systems Research Institute

<sup>iii</sup> The seashore erosion picture was taken by Ben Harris-Roxas on 26<sup>th</sup> March 2007, [http://www.flickr.com/photo\\_zoom.gne?id=440898530&context=set-72157600038435844&size=l](http://www.flickr.com/photo_zoom.gne?id=440898530&context=set-72157600038435844&size=l)

<sup>iv</sup> UNDP, 2007, Thailand Human Development Report 2007, [www.undp.or.th](http://www.undp.or.th)



Figure 5 The HIA and the Health Assembly on the industrial development in Mab Ta Phut and Rayong province



Source: By the author

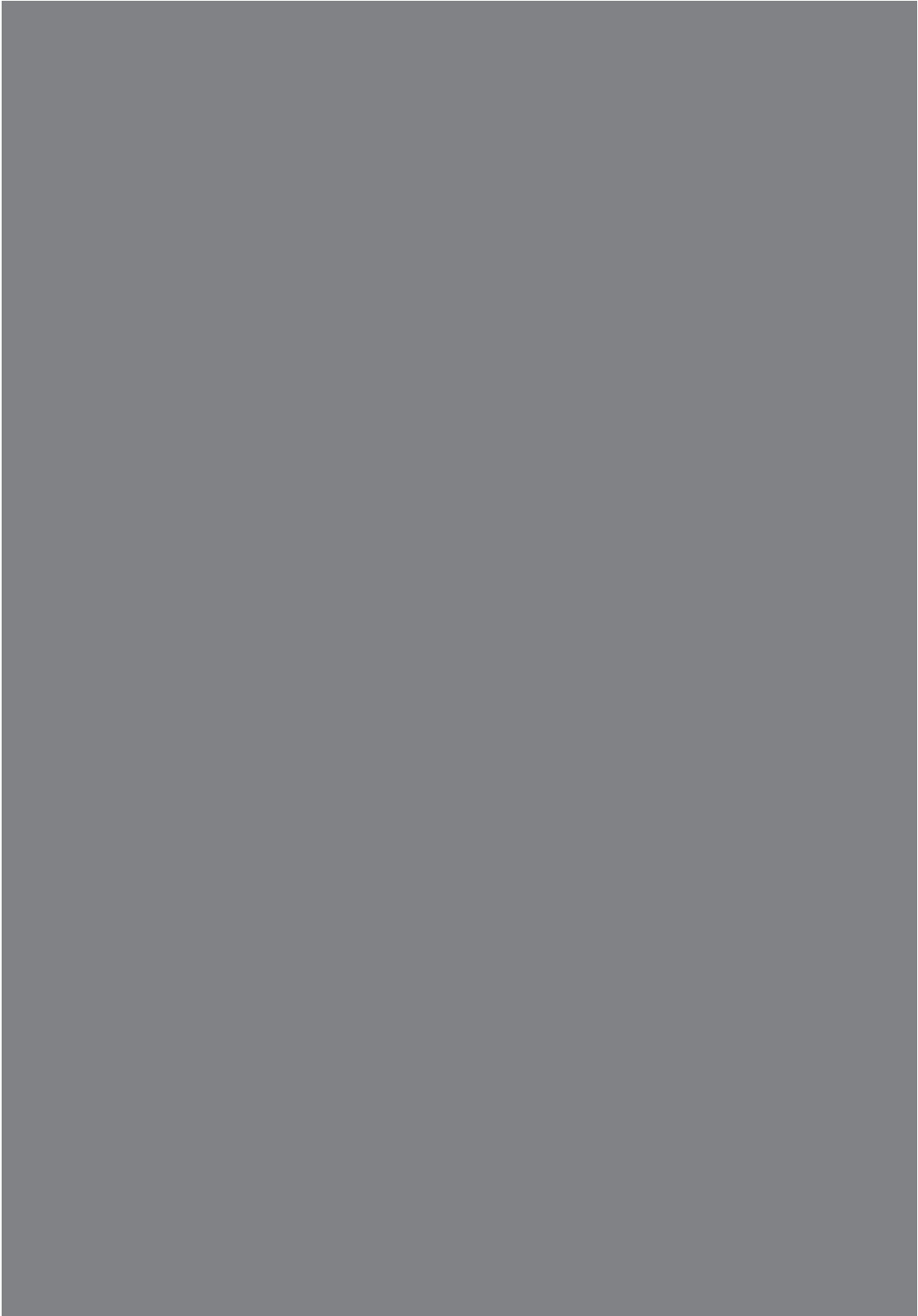
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# 3

## HIA AS A TOOL FOR HEALTHFUL AGRICULTURE AND FOOD POLICY IN THAILAND

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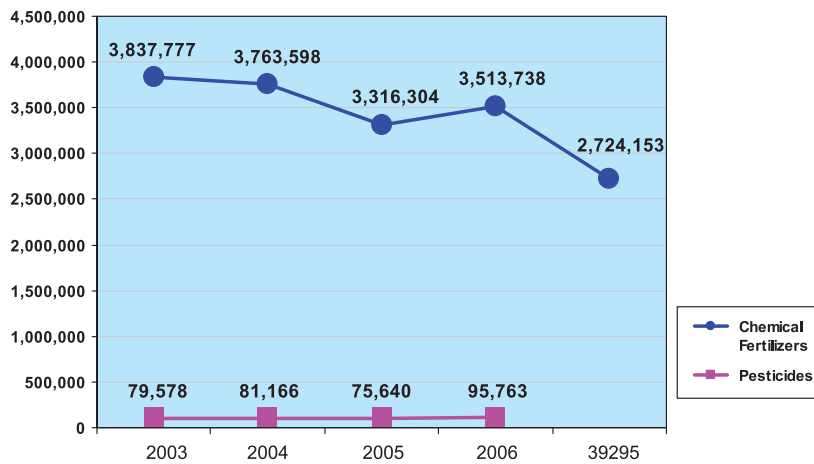
ORAPAN SRISOOKWATANA  
NATIONAL HEALTH COMMISSION OFFICE

## 1. Foreword

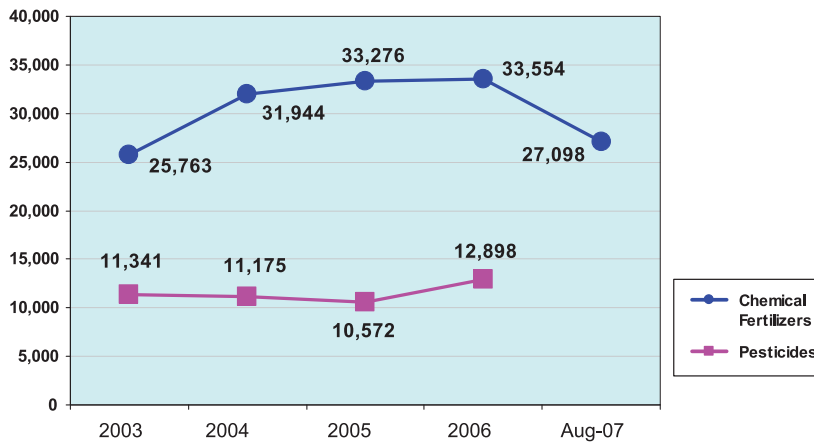
Thailand has long been recognized as a key supplier to global food processing. However, in 1961 when Thailand embraced the "Green Revolution" food processing practices, incorporating them into the 1<sup>st</sup> National Economic and Social Development Plan, the Kingdom also became exposed to new health and environmental threats. Agricultural and food processing industries became reliant on imported materials to ensure national production targets were met. The fertilizers and chemicals used to augment natural processes significantly affected the nation's health and environment. At the same time, the introduction of commercial monoculture crops, heavy machinery, and contract farming has changed Thai agricultural practices from self-sustainable and self-sufficient means of production to one dominated by commercial agriculture production.

The importation of chemical fertilizers and pesticides has continued to increase since these policies went into effect. From 1994 to 2004 the amount of imported pesticides increased more than four-fold. During this same period, average commercial crop production per rai increased 2.5% per year, yet the amount of pesticides applied increased 13.2% per year. In 2003 it was found that of the top 20 pesticides imported, four were highly toxic, category 1A pesticides.

**Amount of Imports of Chemical Fertilizers and Pesticides  
Year 2003 – 2006 (Million Baht)**



**Quantity of Imports of Chemical Fertilizers and Pesticides  
Years 2003 – 2006 (Tons)**



The effects of pesticides on human health were evaluated by analyzing blood samples of those workers who came into contact with pesticides. The results revealed that health risks to agriculturists increased nearly every year, from 15.96% in 1997 to 29.41% in 2002. A recent ten-year surveillance report by the Ministry of Health found that between three and four thousand ill patients per year were seen and treated as a result of pesticide use. Eighty percent of these patients

were agriculturists. Results from the case study found that only 20% of agriculturists who feel ill actually visit a doctor. The actual number is probably even lower due to under-sampling inherent in the survey process.

Studies evaluating the total cost of pesticide use in Thai society should include costs related to ensuring the health of agriculturists and other costs that the government must incur to control and monitor the effects of pesticide and other toxic chemical use. This amounts to upwards of 5,490 million baht per year, roughly the same amount as the purchase price of the chemicals themselves.

In 2003 the Ministry of Agriculture and Cooperatives found that in terms of chemical residue on agriculture products, Chinese lettuce contained the greatest amount, but high levels were also found in chili, cabbage, Chinese kale, green beans, egg plant, cruciferae and coriander; all of which are common vegetables generally found in any market. Chemical residues were also found in soil and water resources throughout the country, particularly in those agricultural areas near rivers.

These phenomena were caused by changes in national policy that replaced natural agriculture. What used to be our fundamental way of life is now referred to as alternative agriculture, as chemical agriculture practices are now the core agriculture method in Thailand. This shift has clearly become a major threat to the health and environment of the nation. Additionally, the intended economic benefits to agriculturists from this shift have not materialized as predicted. Farmers regularly accumulate debt with financial institutions and other creditors in order to secure needed capital to continue their operations at maximum productivity.

These problems have generated concerns among academics, some government agencies that formulate agricultural policies as well as agriculturists, particularly those who have had direct experience with the health threats. These groups have turned their attentions to explore mechanisms to revert back to practicing sustainable agriculture, reducing or completely abandoning chemical agriculture practices. However, during the past few years it has become clear that impediments exist to incorporating these more sustainable techniques into core policies that remain grounded in chemical agriculture. Therefore, new devices that can address these constraints have been put into play, one such tool to emerge over the past five years is Health Impact Assessment.

## 2. HIA in Agriculture and Food Policy

**2.1** In 2000 HIA was introduced to Thailand's health system reform process. This process embraces the idea of "building up" good health instead of "repairing" bad health, and that health is everybody's responsibility not just the responsibility of public health agencies or their employees. During a panel discussion on "Health



System that All Thais Need" organized by National Health System Reform Commission (NHSRC), the main body to initiate Thailand's health system transformation, it was announced that "development must aim at building health for people and civil society together with economic development ... and contain provisions for opportunities for the public to participate in healthy public policy development by way of putting in place HIA mechanisms to address any health impacts from diverse public policy."

**2.2** A significant development occurred in 2001 when HIA for agricultural issues was, for the first time, considered by the Health Systems Research Institute (HSRI). HSRI was the core agency that supported knowledge development for national health system development as well as the primary mechanism to reform health systems under the leadership of HSRC. HSRI initiated a long-term plan to advance healthy public policy and national HIA development called the "Research and Development Plan for HIA Systems" which reviewed experiences from abroad and developed technical papers to promote the initiative.

**2.3** Also in 2001, the first study on HIA in agriculture was published by academics from the Faculty of Medicine, Khon Kaen University. These academics were also part of the HSRI network. The study identified the scope of HIA relating to contract farming, which was the government's agriculture policy at the time. It was discovered that there were many clauses in the policy stating that farmers must use raw materials and manufacturing inputs such as seeds, fertilizers and pesticides from trading companies so as to increase the quantity and quality of their crops. The study also illustrated the importance of HIA in evaluating health beyond physical health to encompass the broader definition of "health" outlined in the health reform system recommendations. In addition to physical health this includes mental health such as stress, social health such as impacts on relationships among farmers, their families and communities, as well as spiritual aspect of health such as being considerate and generous to others - all of which contribute to the potential for having good hearted and generous citizens.

**2.4** In 2003 HSRI changed the name of the research and development plan for the health impact assessment system to "Research and Development Plan for Healthy Public Policy and Health Impact Assessment System"(HPP-HIA) and set five policies to guide its analytical framework. Agriculture and rural policy was one of the five policies. This marked the beginning of efforts to incorporate HIA into agriculture policy in Thailand.

**2.5** HSRI's HPP-HIA Plan was an important mechanism in supporting the development of HIA in agriculture policy. From 2003 to 2006 there were a number of academics from research institutes working on the HPP-HIA Plan. They came from the North, the Northeast and the central plain, all studying their respective regional health impacts from various agricultural practices such as chemical agriculture, bio-agriculture, the use of endosulphan in the rice paddies and the use of pesticides in fruit orchards, specifically orange orchards.

**2.6** Due to government reforms in 2002, the Ministry of Public Health began to support the idea of HIA. The Department of Health was also recognized. The Sanitation and Health Impact Assessment Division was established and given the responsibility for technical development and knowledge management for HIA as well as developing officials' capacity to advance HIA.

**2.7** Since 2001, under the concept of health reform, the health assembly tool was conceived as a mechanism in the development and promotion of healthy public policy to continuously test and develop the HIA model and practices. Health assemblies were to be designed in such a way that the public, academics and the government all participated in the formulation of ideas, managing and exchanging information, and identifying potential problems and suitable solutions in the form of proposed policies. Such problems would be issues discussed at the community level that would then be referred to the appropriate local health assembly, or one of the specific issue-focused health assemblies. The various concerns could then be further screened and aggregated for presentation to the National Health Assembly.

In 2003, the realization that some agriculture communities were experiencing similar health impacts creating a desire among many farmers to abandon chemical agriculture, combined with the growing momentum of HIA among academics and government agencies, resulted in calls for a policy proposal on "healthful agriculture" within local health assemblies across the country and a corresponding national agenda laid out by the government on "food safety". The "healthful agriculture and food" issue therefore grew out of the local health assemblies to be taken up by the 2003 National Health Assembly.

The two important issues were: one, "healthful agriculture", which was formulated by the local communities along with academics working with the HPP-HIA Plan network on agriculture and rural areas supported by HSRI, and two, "safe food for sustainable health", which was formulated by academics and government agencies. These two issues areas were to lead to policy proposals.

**2.8** In 2004 the recommended policy from the 2003 National Health Assembly was broadened further. Even though the government did not incorporate it into the national policy, it provided a major alert to the public to be aware of safety issues relating to agriculture and food processing. Civil society networks in more than 70 provinces (93 percent of the country) to held local health assemblies focusing on healthful agriculture and food issues. This attention resulted in the National Health Assembly making "Healthful Agriculture and Food: Threat from Pesticides" its 2004 theme. More than 30,000 people participated in health assemblies at the local and national levels. They came from all walks of life including agriculture, academics, government officials, and representatives from chemical companies and other private sector interest. Healthful innovations in the form of local experience conducive to good agriculture and food production

were shared, exchanged, and learned within all levels of the health assembly program. Studies on the information presented were undertaken, compiled, and assessed. The health impacts from pesticides were fully analyzed before they were announced by the National Health Assembly. The four main issues announced were: a) employ a participatory approach to develop recommendations for transparent control measures for chemical agriculture; b) regulate, enforce and control the advertisement and direct sales of pesticides, ensuring full disclosure of all information to consumers; c) employ a participatory approach to formulate, enforce and monitor toxic-free food; and d) promote sustainable agriculture practices to replace chemical agriculture thus eliminating its health threats. These recommendations were proposed to the NHSRC. The recommendations were then processed through the National Health Assembly and presented to the cabinet, which agreed to support their implementation. This was seen as a successful step in the development of the Healthy Public Policy on Healthful Agriculture and Food policy, as it evolved through the use of HIA to create awareness of the need to strengthen health at both the community and national levels.

#### The Cabinet's Resolution: Recommendations for Public Policy and Health Strategies on Healthful Agriculture and Food

1. To support an agricultural and food production system that is healthy and safe for the environment. Using a participatory approach, plan and develop targets to reduce the use of those pesticide that pose health threats,
2. To formulate and enforce a "strategy on food safety at the local level" as an integral component of the government's policy on food safety. This should focus on the safe production of raw materials for food, and capitalize on the combined recourses of local communities, state organizations, civil society, and academic institutions.
3. To equitably regulate and control the advertisement and direct sales of pesticides, using the law and information disseminated to consumers.
4. To formulate the principles and processes of "participatory consultation" in all laws and policies involving pesticides enacted or proposed hereafter.
5. To support local communities and civil society with a clear goal in the development of agricultural practices and the use of raw materials in food production towards safe food and a safe environment.
6. To develop information systems to monitor pesticide use and their health implications, in a participatory manner.

**2.9** From 2005 to 2006 the Department of Health together with the HPP-HIA Program, which was supported by the World Health Organization and the United Nations Environment Program under the Health and Environment Linkages Initiative (HELI), joined forces to organize the Health and Environment Impact Assessment of Pesticides Utilization Policy Process in Thai Agriculture project.

This was a major initiative relying on data obtained through the HIA to address the policy making process for pesticides utilization.

Findings that demonstrated a relationship between health impacts and Thailand's policy making process for pesticide utilization included:

- A survey of key players among eleven groups involved with pesticides utilization was conducted. The groups included: policy makers, the hazardous substance committee, law enforcement, agriculture promoters, monitors, agriculturists, consumers, academics, local administrators, alternative agriculture promoters and pesticide manufacturers. The survey results showed that the majority of these groups still believe that pesticides are a necessity to prevent damage to crops and that there remains insufficient alternative products to replace chemical pesticides. Therefore, from their point of view, pesticides still have high economic value. These groups view health and environmental concerns relating to pesticide use as issues to be addressed by other agencies, such as health and environmental agencies, or as political tools that developed countries employ to gain commercial advantages through trade barriers. These groups also feel that pesticide related health impacts result primarily from incorrect application and usage techniques employed by the agriculturists themselves. Therefore, these groups suggested that the solutions rest with improved pesticide education for agriculturists. These groups do not discount the fact that chemical agricultural practices cause significant health impacts, but see these as problems emanating from loopholes in regulations, poor law enforcement, and aggressive pesticide advertising combined with direct sales allowing agriculturists easy access to pesticides.

Additionally, most consumers favor larger produce with low prices and lacking any evidence of pests. Few consumers purchase chemical-free produce because they are more expensive and less attractive. The exception may be people experiencing health problems from consuming toxic produce, or those who are health conscious.

- Furthermore, there is a lack of sufficient knowledge within Thai society to tackle the range of social issues relating to pesticide utilization. The two main areas of deficiency are: data on long-term health impacts of pesticide use, and a clear understanding of the country's pesticide usage in general. Absent such information, policy makers cannot do an effective job protecting the public from the health threats associated with pesticide use.
- There remains no definitive link between managing the health impacts of pesticide use and formulating pesticide policy at the national level, partly because the issues and research interests vary depending on the

individuals involved. For example, agriculturists who have had bad health experiences using pesticides are particularly interested in the health and environmental impact data, while academics studying Western agricultural theory might strongly believe that pesticides are critical for modern agricultural practices. This revelation made research teams more sensitive to the value of knowledge transfer and the participatory approach in the development of an effective community learning process to support local decision making on pesticide policy.

One local administrative organization in a northern province with a long history of intense pesticide usage was selected as the pilot location for the learning project. The participants in the project comprised the majority of stakeholders interested in a local pesticide policy making process: agriculturists, community leaders, local administrative organization representatives, volunteer social workers, public health officers and local administrative agriculture officers. The three major instruments used during this learning process were:

- 1) Conduct a survey and compile indicators of health, environmental and economic impacts.
- 2) Conduct learning activities with four main components: a) biological diversity analysis; b) health impact analysis; c) residential visits to study and exchange experiences and information about ideas for resolving pesticides problems; and d) utilizing the participatory approach in formulating community plans to resolve pesticide problems.
- 3) Present the problems, recommendations, and action plan to resolve the problems to the local administrative organization and local administrative representatives for integration with the local administrative division's development plan.

The success of this learning process allowed the participants to exchange knowledge and information, analyze and summarize the major changes and to develop recommendations. This helped the participants to perform their own analysis on the threats pesticides pose to biological diversity, health, and environmental evolution and how these impacts affect individuals, families and the community's economy.

The policy makers could employ what they learned from the organized learning process to analyze their own local situations with respect to problems of health, environment, society and economy. To this they would add the information and experience attained from their residential visits. They could then consolidate their findings for use in community planning processes undertaken in a participatory manner. Such a process would make it impossible for those responsible for local public policy decisions, to in good conscience, deny or ignore taking these impacts into consideration.

Therefore, the use of these learning process instruments at the community level helps to ensure policy makers are aware of the impacts and also aids their understanding of the true circumstances of the problems as viewed by the people whom their policies will affect. However, this success so far is limited to this pilot area and is not yet compatible for use at a national policy level.

**2.10** In March 2006, the development and understanding of HIA continued to slowly advance, though absent any formal guideline for how the instrument would be used. The national health reform process that began in 2000, achieved initial success when the National Health Act B.E. 2550 (2007) was enacted. This provided hope and some assurance that HIA's role in policy making would advance further. This confidence stemmed from the specific clauses within the National Health Act addressing the main themes of HIA:

- (1) The National Health Commission (NHC), which according to the Act, is the main mechanism responsible for establishing the rules, regulations and monitoring procedures for the use of assessments on the health impacts resulting from a public policy both at the policy development level and during policy implementation.
- (2) Whenever there is a public health impact, the government agency that has knowledge of the impact must immediately disclose to the public this knowledge along with preventative measures.
- (3) An individual or a group of people has the right to request, and to participate in, an assessment of health impacts resulting from a public policy.
- (4) An individual or group has the right to acquire information, explanations and underlying decision making rational used by government agencies prior to approving a policy or activity that may impact their health or the health of the community, and also has the right to express their opinion in such matters.
- (5) Formulate a "Health Assembly" process in which the public and related state agencies exchange their knowledge and collectively learn from each other by organizing forums with public participation, leading to suggestion for advancing healthy public policy or public healthiness.

With these regulations in place, it can be expected that in the near future there will be standardized methods formulated by the NHC for monitoring and applying HIA to various public policies. Any interested parties could then make use of the guidelines to undertake an HIA. Such was the case with the policy for healthful agriculture and food.

### 3. Lessons learned

**3.1** The development of HIA for healthful agriculture and food policy in Thailand is an example of the development of healthy public policy tools that utilize information and ideas in the policy making process that may cause health impacts to the public. Such tools shall not be used to approve or deny projects as is the practice with Environmental Impact Assessments in many countries. The incorporation of HIA language into the National Health Act B.E. 2550 (2007) clearly articulates that HIA is a standardized method that is lawful on its own, thus independent of any other form of impact assessment.

**3.2** Understanding the application of HIA to the development of agriculture and food public policy in Thailand remains limited to local and regional levels. Furthermore, research results only reflect the impacts during specific periods of time. Although the study tried to identify new dimensions of health impacts, i.e. the physical, mental, social and spiritual aspect of health, there remain gaps in understanding on the best methods for incorporating these other dimensions into policy making. While there were numerous studies undertaken on short-term health impacts, there remains a lack of research on the long-term health impacts from pesticide use. Therefore, there should be further studies to help resolve this problem at the national level.

**3.3** In principle, HIA is a process that adds important values and health dimensions to a decision making process. The perspective one has on the value of HIA data is therefore a very important factor. Study results on agriculture show that "prevailing opinions" still view chemicals as integral to successful agriculture. This is the main reason why efforts to incorporate HIA data into the policy making process in Thailand has yet to be very successful. Health impacts remain a low priority as compared to prevailing economic considerations from the point of view of policy makers.

**3.4** While the use of HIA in the policy making process requires reliable and accurate results, these results need not be highly technical nor derived from extensive scientific investigation. Thus one's technical knowledge should not be an inhibiting factor to pursuing HIA. Concern over the health impacts from a large orange orchard in the Northern part of Thailand helps to illustrate this. The orange grove industry in that area evolved through the extensive use of pesticides. As a result, major health impact materialized for the people living around the orchards. Local researchers and non-government organization researchers attempted to apply HIA themselves. However, the results of their assessment were not deemed scientifically acceptable, thus could not be included into the policy making process to resolve the health impacts. By comparison, the joint pilot project of the Department of Health and HPP-HIA Plan, that developed a participatory learning process for applying HIA without employing technical evaluations, was able to

include its results into the community development plan to reduce the health impacts. Thus, the tools for HIA policy development should be systematic, easy to understand, derived from a participatory learning process and based on facts.

**3.5** The current public policy process to manage and control pesticides in Thailand remains a linear process involving a limited number of participants. These are generally people with some amount of political power and others who stand to directly benefit or not from the proposed policy, particularly government representatives and academics who support current agriculture practices. It is therefore not a wholly participatory effort, and lacks respect for the value of input from affected people as equal voices in shaping policy.

If a participatory learning process that generates necessary information for policy making can be developed, with equal opportunities afforded to those affected, particularly involving those at risk from the health impacts of pesticides, policy makers participating in the learning process will truly understand the fundamentals and root causes of the problems, as well as obtain first hand information of the causes and effects, which eventually would eliminate the possibility of one-sided policy making processes.

**3.6** The fact that the National Health Assembly was able to utilize the 2004 cabinet resolution to develop Recommendations for Healthy Public Policy on Healthful Agriculture and Food in 2005 demonstrates that top-down national public policy formulation is not the only route to success. Local communities and influential local organizations were at the heart of developing these recommendations, and did so largely on their own. For example, the development of a network to monitor and control pesticides jointly with local administrative organizations created awareness among many to the benefits of changing their agriculture practices back to a more healthy approach that also preserves the environment.

In the meantime, efforts to carry out the cabinet's resolution through government agencies have not been fruitful due to the lack of unity toward enforcing the policy. This is because each government agency has its own mode of operation, and some do not necessarily value the cabinet recommendations because they were put forward by professionals within health agencies. Thus efforts to promote healthy public policy should emanate from local communities then should be expanded nationally once proven successful, in contrast to making recommendations solely for national policy considerations, which is a much more complicated effort.



## 4. Challenges

**4.1** The language contained in the National Health Act B.E. 2550 (2007), which legally supports HIA still has two major challenges affecting its broad implementation:

- a) A mechanism should be formulated to allow the public to truly exercise their rights to request HIA, and to meaningfully participate in healthy public policy development in accordance with the rights guaranteed by the National Health Act B.E. 2550 (2007). For instance, in the case of developing policy for a manufacturing process that may cause health impacts to the public, a plan should be developed for how the public can exercise their rights, such as which communication channels they can use and what participation mechanisms will be made available to them. Furthermore, how can government agencies support the public through cultivating increased public understanding of HIA, and how will an assessment's outcome be included in a policy making process?
- b) Further studies are needed to develop the rules, regulations, and guidelines for applying HIA to agriculture and food production processes in Thailand, which incorporate various methods, physical dimensions and different business management process. Thus the rules, regulations and guideline need to be applicable to diverse processes at both local and national policy levels.

**4.2** Research toward understanding the long-term health impact from pesticide use on the Thai environment must continue in a systematic manner. This problem is of great importance and needs to be analyzed carefully. The task is not easy as there is usually some opposing point of view to those HIA findings which pinpoint the causes and effects of the impacts discovered, and whether or not the impacts are directly related to the action or policy being evaluated by the HIA or if they are merely impacts that are normally present in the background. For example, an itchy rash experienced by people in an area where pesticides are in use may be seen by some as nothing out of the ordinary, thus unrelated to the pesticides. It is therefore the objective of the long-term study on pesticides in Thailand to identify the causes and effects more clearly, and identifying strategies for registering and licensing chemical use in Thailand.

**4.3** Recognizing and promoting a participatory approach for all affected people from all sectors to be involved in developing policy for healthful agriculture and food is extremely important and requires additional support to be successful. The establishment of health assemblies, which provide equal opportunities for the public, government representatives and academics to participate in policy making, represents a useful mechanism for advancing public participation. This however needs to be expanded further to take the success achieved at the local level and to apply it nationally.

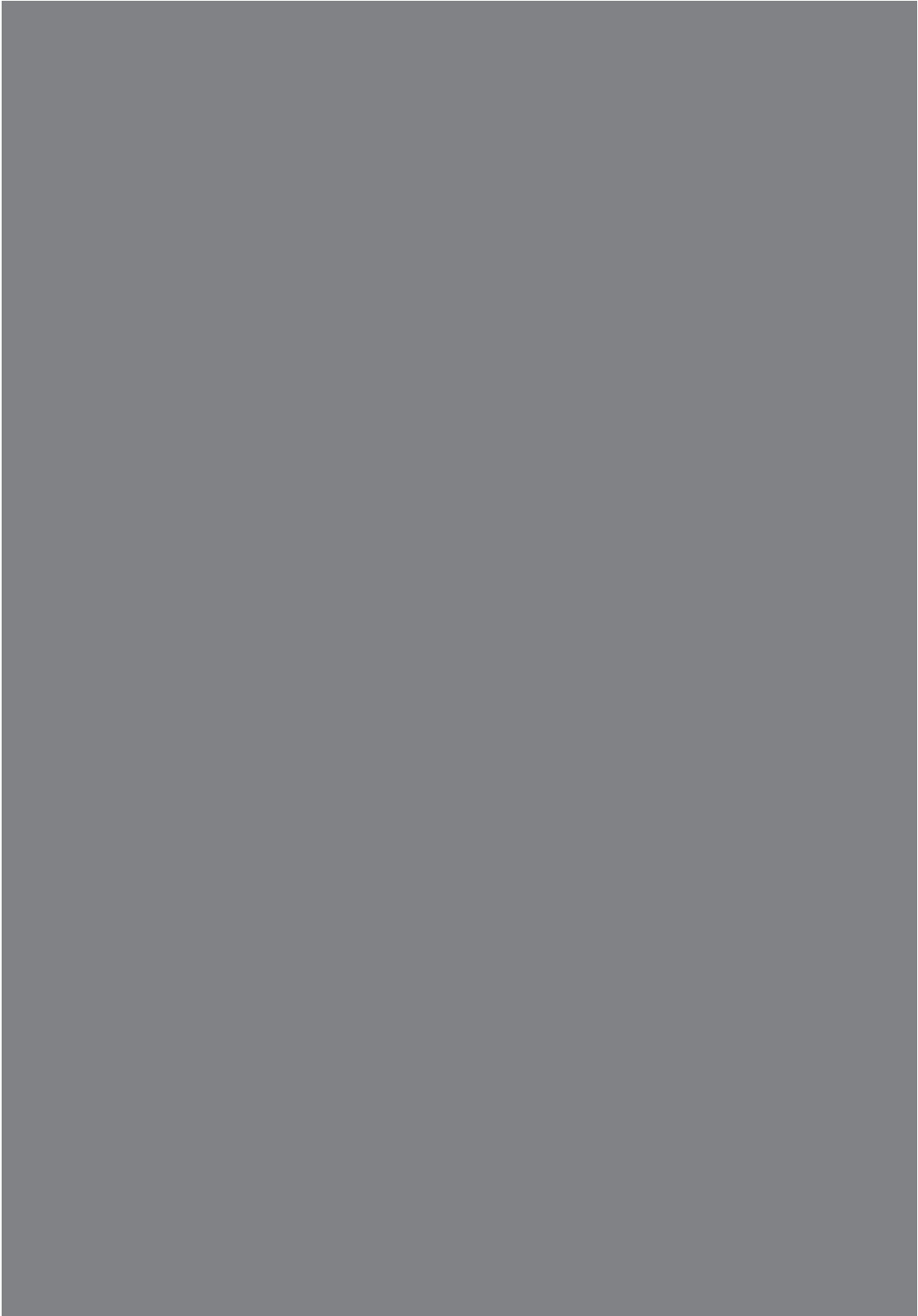
**4.4** The major obstacle to new agriculture practices is the ingrained belief among policy makers that technology alone can control nature, and that economic value is the highest priority. This is the significant stumbling block to the acceptance of healthful agriculture and food policy. Formulating a solution is difficult. One approach may be to recognize the escalating support for healthful agriculture and food policy among producers at the community level together with the growing demand among consumers for healthy food at the global level. Such a realization will help to reinforce the relationship between health and environment impact assessment data and the importance of understanding the overall economic impacts - the real costs of using agricultural chemical such as the investment needed to monitor and medically treat patients affected, the losses associated with declining populations of useful insects, etc. Integral to this must be the application of a participatory approach to ensure equity in health both as a process and as a strategy.

Efforts to combine HIA with healthy public policy and health strategies on healthful agriculture and food policy over the past five years have shown that it is difficult to make the task acceptable to all parties. However, the official acknowledgment of HIA under the National Health Act B.E. 2550 is a monumental starting point for generating acceptance of this new device, leading to further consideration of HIA's use in future policy making processes. Additional efforts are necessary to advance the understanding of HIA and healthy public policy, along with a great deal of social enforcement to make it acceptable in the years to come.

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# 4

## DEVELOPMENT OF HIA TRAINING MODEL AND CAPACITY BUILDING: CASE STUDY ON AGRICULTURAL PESTICIDES IN THAILAND

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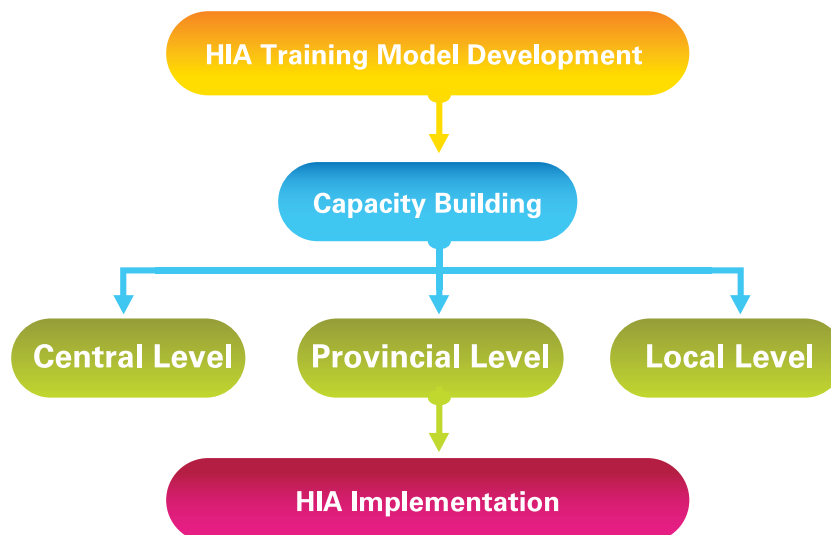
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KORNWIPA PUNNASIRI  
KASINEE PITISAREE  
PANITA CHAROENSUK  
SUKANDA PUDPADEE  
BENJAWAN TAWATSUPA  
JITTIMA RODSAWAD  
PIYAMAPORN DOUNGMONTRI  
DEPARTMENT OF HEALTH  
MINISTRY OF PUBLIC HEALTH

## 1. Introduction

Thailand's Department of Health (DOH) within the Ministry of Public Health was charged with overseeing the development and application of HIA policy. Their mandate was to carry out research and capacity building to see HIA incorporated into the activities of all arms of government, not only those directly involved with the health sector, with specific emphasis to ensure local government agencies are equipped to utilize this new tool. As the HIA concept was a new approach for both civil servants and the general public, a training model was to be immediately developed in order to establish a foundation for HIA knowledge, experience and activities. By undertaking these responsibilities, the DOH developed the training model to guide specific HIA training programs.

## 2. Conceptual framework



## 3. Process

### I. Development of HIA Training Model

The training model for HIA was designed for government agency staffs at the regional and national levels. Trainings lasted seven days, and were split into two components, theoretical understanding and practical application.

**1) Theoretical Understanding:** This part addressed the concept, framework and procedures for HIA. It also included introductory information on several tools for HIA application. The content included:

- Overview of HIA: an introduction to HIA; the values and benefits of HIA application; types, processes and appropriate tools for HIA appraisal including epidemiology, risk assessment, social and economic aspects; and outlining the relationships between EIA, SEA and HIA in Thailand.
- Case Study Introductions: illustrate for trainees the mechanics and procedures utilized in HIA and how to apply information, experiences and recommendations gained from the case study. Trainees were also shown how to utilize additional educational resources offered by their instructors, and available through additional documentation and the Internet.

**2) Practical Application:** This component enabled the participants to understand and learn by implementing a pilot project. The pilot project examined the health impacts relating to the application of pesticides in orange groves, which is a major problem in many areas of Thailand. The HIA implementation exercise involved five steps and 12 tasks.

#### ***Step 1: Getting Started and HIA Screening***

Participants learn the importance of project screening, how to establish roles and responsibilities within a team framework, how to explain the process and how to select appropriate tools for data collection. It consists of four tasks:

- Task 1 Team formation
- Task 2 Planning and generation of HIA options
- Task 3 Walk through survey and data collection
- Task 4 Screening of HIA

#### ***Step 2: Scoping of HIA***

The objectives in this step are for participants to understand the role of scoping including: identifying the potential health impacts that need to be addressed, the

stakeholders that need to be involved, community vulnerabilities, and the environmental factors pertaining to agricultural pesticides. It consists of four tasks:

- Task 5 Options' prioritization
- Task 6 Causes and problems' identification
- Task 7 Setting objectives and targets
- Task 8 Preparation and management of appraisal

### ***Step 3: Appraisal***

The objective is to enable participants to understand the scope of the appraisal process and to select and implement appropriate tools for HIA appraisal. There is one task:

- Task 9 Type and tool selection for HIA appraisal

### ***Step 4: Public Review, Recommendations and Reporting to Decision Makers***

The objectives are to enable participants to understand the principles and methodology associated with public involvement, public participation activities and mechanisms to facilitate collaboration with the public in providing recommendations to decision makers. It consists of two tasks:

- Task 10 Management of public review and recommendations
- Task 11 Report Writing to decision-makers

### ***Step 5: Monitoring and Evaluation***

The objectives are to enable participants to understand the principles and methodology of monitoring and evaluation. It consists of one task:

- Task 12 Monitoring and evaluation.

During trainings, monitoring and evaluations were conducted in order to assess the effectiveness of the program. The commentary, suggestions, and recommendations from the trainees served as valuable feedback for the organizers to revise, develop, and strengthen future training programs. The monitoring and evaluation were divided into two parts:

#### (1) Process evaluation

- How the training program was undertaken.
- Those involved.
- How useful and valuable was the training process.
- How useful were the training modules in terms of curriculum, content details lecturers, trainers, facilitators, duration, and venue.
- How administration and services satisfied trainees' expectations.



- (2) Impact evaluation to track the extent to which recommendations are subsequently accepted and implemented by the organizing team, and if not, why. What are the short-term benefits from doing HIA.

## **II. Capacity Building: HIA training through pilot project implementation utilizing problem-based learning**

For the pilot project, the working group selected as its pilot problem-based learning project the health impacts from pesticide application, a major problem in Thailand. The use of high quantities of agricultural pesticides in orange groves may result in health effects on farmers and consumers, while also contaminating the water, soil and air thus impacting all living things in the ecological system. In conducting health impact assessments in the case of orange farming, it is essential to consider both quantitative and qualitative-based methods applied in a systematic way and in the appropriate context. Assessments should also contain evidence-based recommendations designed to prevent problems from occurring in the future by encouraging multi-sectoral participation including representatives from: the health sector (regional health promotion center, regional disease control, provincial public health office), local organizations (provincial administrative organization, Tambon Administrative Organization, other community organizations) along with the academics and workers.

## **4. Results**

### **Environmental Effects**

The use of agricultural chemicals has had an effect on the community particularly during the rainy season. Farmers believe that the soil quality has deteriorated due to the exceeding application of fertiliser and chemicals over an extended period of time. This has caused water resources to become polluted from chemical run-off from the orange groves. In some cases the environmental pollution caused by these chemicals has killed fish, birds and frogs, thus also entering the food chain, potentially generating further effects on human health.

### **Health Effects**

**Physical effects:** The majority of farmers and workers reported headaches, vomiting, breathing difficulties and fatigue. They attributed these symptoms to incorrect practices, such as the misuse of protective equipment.

**Mental effects:** Most orange grove owners and their workers were concerned about the effects of pesticides on their health and to the environment. However, most owners were very satisfied with their business, as they had worked hard to generate good yields and profits.

**Social effects:** All groups of stakeholders had good relationships and enjoyed activities within their families; however they did not have much time for social activities with their neighbours as they had to work eight to ten hours per day.

**Spiritual effects:** Both orange grove owners and workers felt a close bond with their business, however all these groups were concerned about the toxicity and effects of the pesticides they used. Nearby communities feared the orange groves had had an adverse effect on them.

## 5. Conclusions and Recommendations

### Training Model Development

- The training model should have multiple versions specific to the geographic scope for those involved: community, local, regional and central government.
- HIA in Thailand is a new concept, hence capacity needs to be built using a step-by-step approach at the organizational level.
- To maintain ongoing support for HIA and HIA capacity building in Thailand, it is important that all levels of government policy making establish priorities for health related investment in both health and non-health sectors. The promotion of health through providing sustainable financing should be a core responsibility of the government.

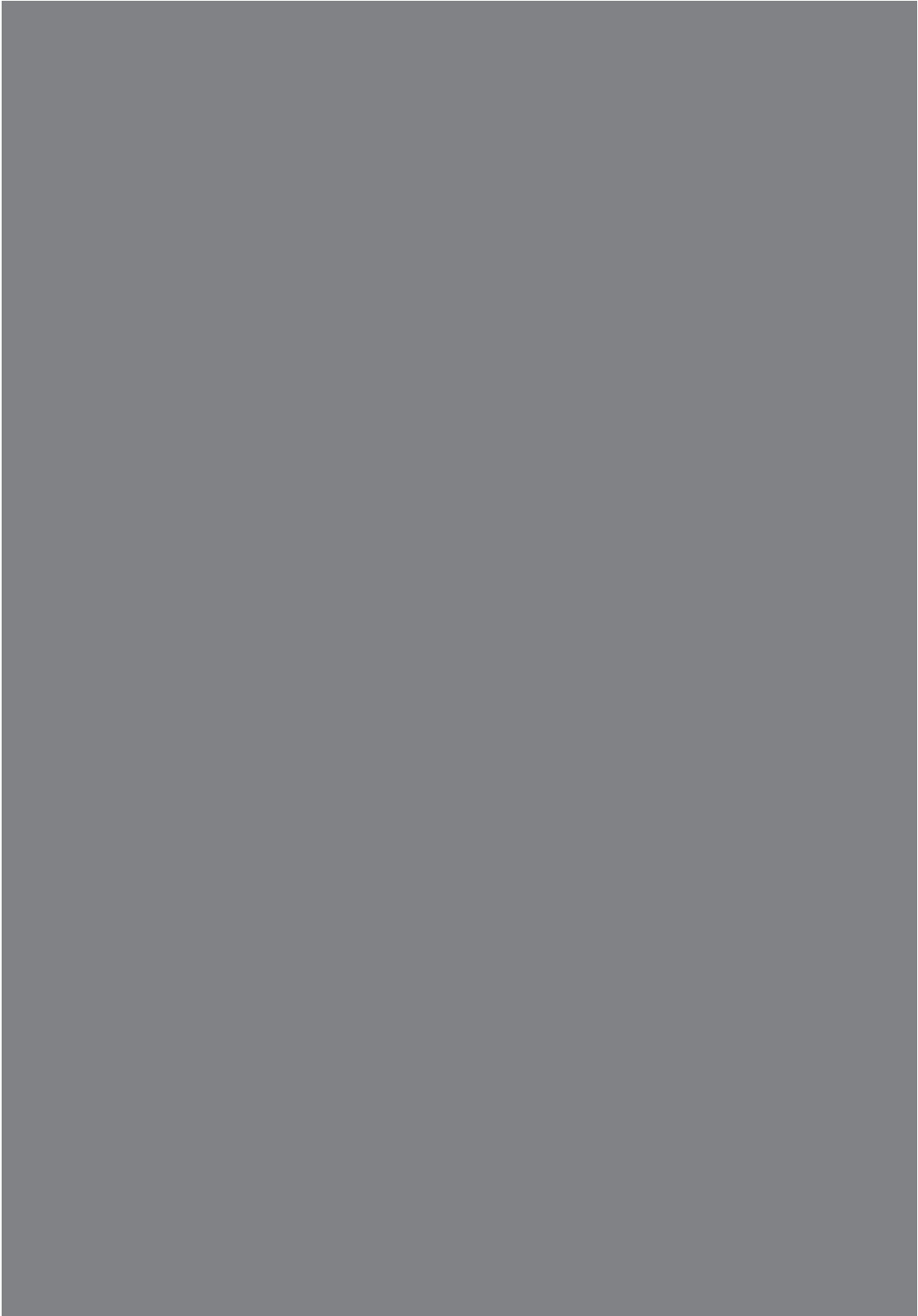
### Pilot Project Implementation

- Agricultural officers should monitor and control the proper disposal of waste chemicals from orange groves. They should know each step in the pesticide path, from the source to the farm to the surrounding environment.
- Farmers should improve their pesticide handling, application and storage practices.
- There should be trainings for farmers in the use of personal protective equipment, and which also provide a forum for farmers to share their experiences with pesticide application. The health effects of not using appropriate protective equipment should be communicated through local community radio and other media.
- Surveillance is required on the use of pesticides and waste disposal to protect children, pregnant women, the elderly and the community in general.
- Farmers should undertake their own health surveillance by recording and documenting any health effects in a book.

- The health surveillance record books should be used to detect the exposure and health effects of long-term pesticide use, as the evolution of impacts may be the result of the gradual build-up of chemical concentrations in the environment, thus must be monitored over the long-term.
- School children should be taught how to assist with community surveillance.
- There should be a monthly forum for farmers to share and compare methods of using pesticides with organic approaches to pest control. Through these forums the experiences of each farmer could be used to improve healthy practices.

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# 5

## HIA THROUGH HEALTH ASSEMBLY: SOLVING FLOOD PROBLEMS IN CHIANG MAI PROVINCE, THAILAND

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## 1. Key Questions

The debate over different solutions to Chiang Mai's flooding problems between the government and local people has become a political conflict, especially with the proposed construction of a concrete flood control dam on the Ping River. As this conflict unfolded, important questions were raised. What should be the policy for participatory decision making using health impact assessment (HIA) and health assembly (HA) in developing flood management solution such as a concrete dam? Who should be involved and what mechanism and process should be used? What factors need to be addressed in devising a solution? And lastly, how to develop HIA and HA as a participatory healthy public policy process (PHPPP) tool that is suitable for Thai society?

*From flood problems to a concrete dam construction policy: a challenge to developing PHPPP via HIA and HA.*

## 2. Flood Problem: Chiang Mai people share distress

In 2005 and 2006, Chiang Mai experienced significant flooding that seriously impacted the socio-economic and ecological system and affected the way of life and the health of local people and their communities.

A combination of factors has contributed to the increased frequency of severe flooding in Chiang Mai: climate change from global warming; forest damage at the river's source; the Ping River's shallow depth; the narrowing of the river through infilling for riverside development especially in downtown Chiang Mai (hotel and government offices); infrastructure development such as road construction, and downtown expansion without city planning resulting in the city's borderless growth. Much of the development-induced impacts have also trampled on the cultural traditions of "Lanna" people who were raised to respect the river. Such development has been seen by them as "Kheud": very offensive to nature.

### 3. Different ways of thinking: The conflict between people and the government

The flooding problems stimulated many government agencies to become engaged in seeking solutions. Academics and people networks also began exploring solutions.

The government chose to address Chiang Mai's flooding problem by employing a private consultant to create a master plan for the Ping River basin, which was to become one of the government's mega projects. The plan was to include short-term and long-term approaches involving many projects such as channel excavation, small dam improvement projects, community irrigation projects and a flood protection project for Chiang Mai city. But the most significant project, headed by the Department of Public Works and City Planning, was a 19.4 km-long, concrete, flood control embankment and dam in Chiang Mai Municipality costing 1,385 million baht. The project was quickly pushed forward without any impact assessment or input from affected people.

People coming together under the banner of the People's Network for a System-wide Flood Solution pointed out that the concrete dam could not completely solve the flooding problem. They suggested a holistic solution including:

#### **Principal Concepts for Solutions to Chiang Mai flooding**

- Address the problem within the whole watershed, not only isolated sections.
- Affected people must be given the opportunity to participate in framing a solution.
- The Ping River management plan must address flooding and aridity issues.
- Application of traditional management schemes such as small dams and the belief in "Kheud" should be combined with geographical information system analysis to aid in formulating solutions.
- Input from the government, private sector, rich and poor must be treated equally under the law.

- Prior to project approval, a comprehensive impact analysis must be completed by qualified researchers.

#### **Solutions to Chiang Mai Flooding**

- Increase the efficiency of water drainage.
- Increase the river's flow capacity.
- Increase soil absorption capacity.
- Decrease the likelihood of resettlement.
- Respect ancient beliefs and traditions.
- Improve coordination and working efficiency within the government.

*Differing perspectives between the government and local people on flood management solutions was a public issue requiring a collective resolution.*

## **4. From sharing distress to sharing a problem: A collective concept of the People's Network for a System-wide Flood Solution**

Because of differing views on the concrete dam approach, the People's Network for a System-wide Flood Solution was set up. This network included: Wat Kade's Peoples Group, La-on Hug Jiangmai Group, Gardluang Working Group, Chiang Mai Christian Church, Environmental Network, Payakham Dam User Network, Social Management College in Social Research Institute of Chiang Mai University, Northern Institute of Health System Research, Majoe University, Hug Phangping Club, Institute for Human Rights, Pracha Dham News Station, Northern Peoples Newspaper, and the Ping Riverside Business Association which was affected by the embankment construction. All these stakeholders felt that the government's solution did not address the problem from the perspective of the entire watershed, therefore was not sustainable. One of the network's key leaders was Dr. Doungchan Charoenmuang from the Social Research Institute of Chiang Mai University and the Northern Institute of Health System Research.

*The government policy toward resolving flood problems with a concrete dam across the Ping River resulted in the evolution of a citizens' network to collectively work toward a better solution.*



## 5. The HIA solution: An attempt by the people sector

The People's Network for a System-wide Flood Solution used HIA along with an evaluation of the advantages and disadvantages of dam construction in Thailand and other countries. Experience with dam construction in Sukhothai and Singhaburi had already demonstrated that such flood control approaches were not sustainable solutions and generated significant ecological impacts along with municipal drainage problems. In contrast, a more natural approach to flood management, such as practiced in parts of Japan, was seen as a better choice. The people's network presented all studies and information to the public. Prior to their presentation, 90% of the public supported the government's proposal, but this support declined significantly after the presentation to just 30%.

The network organized many public forums where the government could present its proposal, while people could also get real information on the impacts and share their opinions. In the beginning, there were conflicts between the government and the people over both the concepts and facts.

*Fighting with information and knowledge via HIA was an attempt by the people to seek a solution.*

## 6. When people speak, the media follows

The forums featured ongoing debates between the government and the public due to stark disagreements in the concepts that should frame a flood management solution. Nonetheless, the learning process for public participation in policy making advanced. Additionally, local media such as newspapers and community radio stations continuously publicized the issue, which caused more people to support the people sector's solution. As the people sector's voice became louder, the national television network iTV decided to organize a live forum for its "Hot-News" program, during which the government and the people sector could present their solutions.

*Public media was a key component helping to drive the process for healthy public policy.*

## 7. Health Assembly: Cooperation of the government and people in devising a systematic problem solution

The health assembly (HA) process included many health assemblies with different objectives such as to establish the baseline set of problems, to develop an alternative proposal, and to advance the alternative proposal within the government's decision making process.

An example of a health assembly aimed at developing alternative proposals was the "Love Ping River, Not the Dam" assembly, a cooperative forum involving government representatives, local people, business and private sector interest, and the local media. There were displays of academic information along with the people sector's proposal. The meeting itself included presentations of both the government's and the people sector's proposals. Participants in the meeting were important leaders and policy operators including the vice governor, the head officer for public works and city planning, the head officer for the land department, the head officer for the irrigation department, university academicians, and Buddhist, Christian and Muslim representatives. During the meeting, concerns from each sector were expressed, information was debated and compromises were made in an effort to develop a collective proposal.

Health assemblies continued until the government accepted the people sector's proposal, which eventually occurred resulting in plans for limiting construction of concrete dams to essential areas.

*Health assemblies were collaborations with all stakeholders to exchange and discuss information and knowledge. They helped to introduce healthy public policy through participatory decision making.*

## 8. Analysis: Development of the people sector's public policy

### 8.1 Scope of health impact assessments

Chiang Mai's flooding problems caused the government to respond with a proposal for a concrete dam project, which was developed without a systematic assessment of advantage and disadvantage, and without input nor participation from stakeholders. An impact study carried out by a citizens' network provided the public with the facts surrounding this concrete dam proposal. The study illustrated that there would be future impacts on the city of Chiang Mai and that violation of

values such as traditional "Kheud" were ignored by city planning officials. Meanwhile, the people's network also proposed natural flood management strategies involving the whole watershed as an alternative to the government's proposal. Public communication was facilitated by the use of local and national media to present the people's network information and proposal. Health assemblies provided a tool to exchange and debate ideas, and formulate compromises that could form an alternative proposal to be presented to the government.

Health impact assessment was an important tool for people and stakeholders to have equal footing when presenting facts for and against particular proposals, and discussing and developing an alternative. This helped to advance a participatory decision making process.

## 8.2 The multi-stream theory

- **Problem stream:** The government developed a major flood management strategy, but ignored pursuing a cooperative decision making process with the people affected. Its attempt to construct a concrete dam across the Ping River was against the wishes of the people. Academics, business representatives, local people and the media cooperated in forming the People's Network for a System-wide Flood Solution. This network studied the advantages and disadvantages of the dam proposal then presented its findings to the public, and at the same time making the government's plan a major political issue in Chiang Mai. The network's interest was not only to better understand and to solve the problem, but also to employ participatory decision making as a core mechanism to resolve the conflict.
- **Political stream:** After the public learned the facts associated with the government's proposal, it became an important social issue attracting significant public attention. This enabled the people's network to negotiate a solution with the government. The result demonstrated how the evolution of the issue helped to create social support leading to a political solution aligned with society's wishes.
- **Policy stream:** The well-researched and documented proposal submitted by the people's network was the result of HIA analysis. Therefore, the proposal was seen as credible and in a format consistent with other policy proposals. This made it difficult for the government to ignore the people's network's proposal, and ultimately forced the government to adopt it.

Good information and academic analysis presented to the public, fueled by extensive local communication, generated strong interest in resolving the problem. The network continued to advance the issue by operating health assemblies, ultimately causing a national television broadcaster (iTV) to host and broadcast a live forum, which led to an alternative policy solution. So together, these three streams opened the policy window.

### 8.3 The policy advocacy coalition

The driving force for policy change on concrete dam construction across the Ping River came from the strength of the People's Network for a System-wide Flood Solution.

This policy advocacy coalition was comprised of representatives from the academic sector, business sector, people sector and the local media. In general, each sector had different motivations and interests, but their commitment to cooperation was fueled by the recognition that the concrete dam was not the correct solution. They had a clear objective: to stop dam construction across the Ping River and to introduce a better solution. Important things that helped this network to come together were organizing efficiency, strong political analysis and a strategy to advance the people sector's role in influencing public policy.

The People's Network for a System-wide Flood Solution was both a driving mechanism for policy facilitation and a policy actor. Dr. Doungchan Charoenmuang, the network's main leader from the Institute of Social Research in Chiang Mai University, continuously addressed and aggressively pushed for a better flood problem solution. She was widely respected and trusted, working as much in the background as well as the foreground to take advantage of every opportunity to advance the issue.

### 8.4 The health assembly process

Public efforts to resolve Chiang Mai's flooding problem provided a learning process for participatory public policy decision making resulting from: organizing a powerful network, generating credible information and research by academics, offering a well-documented and publicly supported solution, and working with a commitment to collectively solve the problem. These efforts were aided by solid political analysis and strategic planning. Together they provided all the ingredients necessary for an effective health assembly process, which is summarized as follow:

- Establishing a public problem issue: Health assemblies were used as a tool to accommodate all stakeholders in the sharing of information and suggestions. Academics used HIA to evaluate the concrete dam proposal and to generate credible results suitable for public policy interventions. All information was communicated by local media and sufficient to raise questions as to the merits of the dam construction proposal. This led to many forums that ultimately yielded a cooperative solution being developed and supported.
- Developing a political proposal: This was an ongoing step inherent in the health assemblies where all information from the HIA was presented and all stakeholders



could share opinions. The government also presented their solution and views on the people's network proposal. The whole process was aimed at reaching a public policy compromise.

- Advancing the political proposal to public policy decision makers: This too was inherent in the health assembly process that allowed for an airing of opinions and different proposals, the results of which were broadcasted through the media. During these forums, extensive discussion and negotiations occurred with government representatives who had the authority to promote any collaborative proposal. The result was that the participatory process generated a public policy solution.

The health assembly process provided a new tool for the public sector, a powerful collaborative process for the people's network, as well as a learning tool. This process included public policy development, public communication, HIA and knowledge management as tools to support a healthy public policy process.

## 9. Learning synthesis: Development of the health assembly and health impact assessment

### 9.1 Developing the public problem issue

This flooding issue provided a valuable initiation for the public to come together to address a social problem, since everyone identified with it as something that directly affected them individually; it was very much their problem. The government's solution evolved from a top-down process devoid of any input from those who may be affected, nor did the government conduct an impact assessment. After the facts were exposed to the public, different views on the problem were shared, and the problem was restated as something that affects all Chiang Mai people.

### 9.2 Emphasis on objectives and targets

The people's network emphasized working with clear targets and expected results. They addressed all operational details for keeping the process on track and moving forward in a timely manner. In this case, the people sector's objective was stopping the concrete dam and proposing a natural dam solution.

### **9.3 Effective leader to advance policy and build social awareness**

The network's main leader played a critical role in influencing the health assembly process. She developed and shaped the public problem issue, designed the public process, articulated options, and networked with all stakeholders. The leader should be a policy facilitator with the knowledge and capacity to drive public participation in the policy making process. Dr. Doungchan Charoenmuang demonstrated these traits, therefore was a suitable leader for the Chiang Mai case.

The network should include participants from a variety of sectors to cooperate in health assembly process: government, politics, citizens' groups, networking organizations, business, academia, and public communications. Individuals and networks with strong public policy influence are of critical importance. The overall make-up of the network will likely differ from what formed around the Chiang Mai's flood problem case.

Cooperation and alliance building must be a commitment of all stakeholders. In this case, cooperation was emphasized in four areas: 1) unified objectives and targets, 2) a collective policy proposal, 3) coalesced public benefits, and 4) good management.

In this case, when the public was exposed to all the facts via the health assemblies and via the local media, social awareness became a main avenue for opposing dam construction.

### **9.4 Information and knowledge through health impact assessment**

The most important element in resolving Chiang Mai's flooding problem was the systematic application of HIA. The information and results from the HIA were the driving force in the health assemblies, helping to shape the problem and fueling policy discussions and policy formulation.

### **9.5 Policy process of the government sector**

The government's policy making process was thoroughly studied in terms of policy regulations, decision and enactment procedures, individuals influential in the policy decision making process, time constraints, and organizational culture. The benefit of this study included grouping influential policy actors, understanding decision making time constraints, identifying avenues and opportunities for advancing policy, and understanding reasons for a decision. In this case, this last issue was critical and should not be ignored.

## **9.6 Optimal opportunity to propose policy**

The network's solid academic analysis and powerful outreach was important, but its ability to swiftly react to opportunities must also be recognized. When iTV initiated its public forum, the people's network which had operated health assemblies on its own for some time, immediately joined iTV's effort as they recognized the potential value such a forum might offer.

## **9.7 Addressing external factors**

Factors contributing to the strength of the movement opposing dam construction were its main leader, the groups involved, its organization and its networking abilities. They were also systematic in their evaluation, and vocal in their articulation, of external factors that would exacerbate problems in Chiang Mai if unaddressed in the government's proposal. These problematic factors were one, the lack of any systematic plan for ongoing urban expansion leading to continued haphazard development, and two, an unregulated tourism promotion policy. Together these issues raised questions surrounding the government's proposal. More importantly, the evaluation of these external factors by the people's network reinforced to the public the need for them to consider supporting efforts to advance an alternative to the government's proposal.

## **9.8 Supported mechanism to advance policy**

The People's Network for a System-wide Flood Solution was an important mechanism that acted both as policy facilitator and policy actor. It was loosely organized with a horizontal decision making structure. Its participants came from a variety of sectors: government, community, business and media. They came together to oppose dam construction and worked strategically, systematically and continuously to achieve their objective.

## **9.9 Optimum planning to drive the process**

Optimum strategic planning was undertaken throughout the process, beginning with the systematic analysis of the problem and continuing on through policy adoption. Similarly, the network's influence combined with its understanding of the policy making process were used to advance a process by establishing the public problem issue, developing a political proposal, pushing the political proposal to become public policy, and finally, developing an evaluation policy.

## **9.10 Public communication**

Local media demonstrated their potential to stimulate public interest because they reported on all information collected and studied by the network. Such exposure enabled everyone to understand the facts as to the merits of opposing the government's plan for dam construction.

National media helped to stimulate more cooperative efforts toward developing a solution. Once the dam opponents' message had reached a significant level of public awareness, iTV organized a forum with the government and the people's network to be broadcasted live. This resulted in the government's commitment to the public that they would restrict dam construction to essential areas and the people sector's solution would be added to the provincial plan.

## 10. Summary

### **10.1 Participatory healthy public policy process (PHPPP) by HIA and HA**

Problems and solutions were introduced, a negotiation process to discuss alternatives was then developed that demonstrated how the public and the government should be operating within an equitable decision making structure, which then led to agreement on a collaborative solution.

### **10.2 Important compositions**

- (1) Mechanism - The People's Network for System-wide Flood Solutions had a multi-linked structure and acted as both policy facilitator and policy actor.
- (2) Policy process - HIA played the most important role in policy development, policy advancement and policy decision making stages. HIA and HA together were critical in the final stages.
- (3) Related factors - Supportive factors were the strength of the network's main leader, the groups involved, their organization and networking abilities, organization, academic credibility, and local and national media, while the threatening factors were non-directive growth of Chiang Mai Province and government's tourism promotion policy.
- (4) Public communication - via local and national media.
- (5) Alliance networking

### **10.3 Solution result**

After establishing such a process, the government limited the extent of concrete dam construction to only essential areas. The proposal from the people sector was integrated into the provincial flood solution plan.



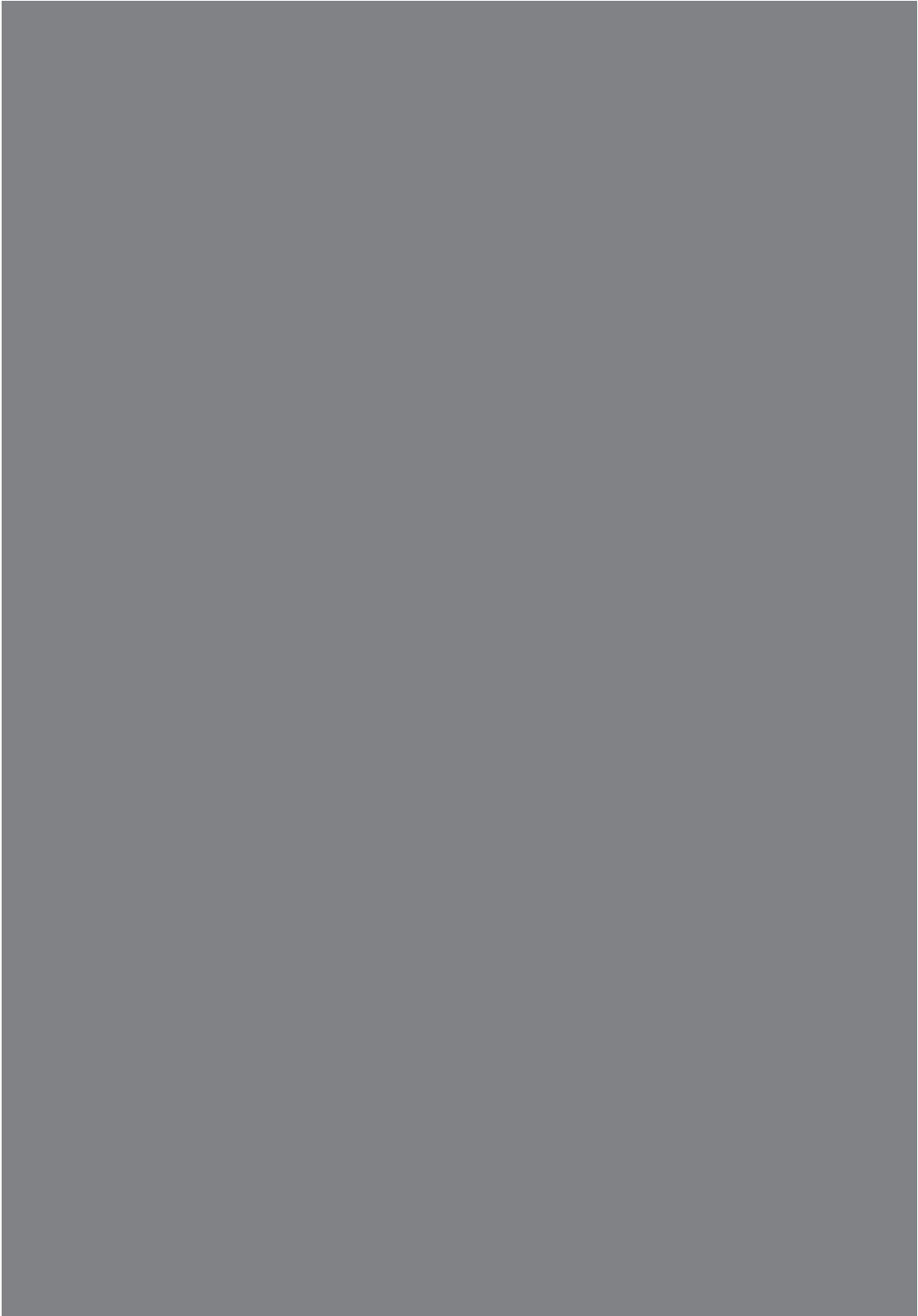
## 10.4 Strategy to develop HIA and HA as a PHPPP tool suited for Thai society

These should be considered as follows:

- (1) Framing the problem as a public problem issue.
- (2) Articulating a clear direction and policy goal.
- (3) Assembling, analyzing and synthesizing sufficient information.
- (4) An effective leader who is a well-connected policy actor, active in policy networks, and promotes social understanding.
- (5) Understanding official policy processes and policy conditions.
- (6) Patience to allow for the development of the optimal policy.
- (7) Studying external factors and related policies to identify those that may aid as well as those that may impede a policy proposal.
- (8) Strengthening functional mechanisms which act as policy facilitators.
- (9) Systematic planning for forums, processes and mechanisms to advance the public policy process.
- (10) Communicating to public through suitable channels.

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# 6

## HEALTH IMPACT ASSESSMENT OF KWAENOI DAM IN PHITSANULOK, THAILAND

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## 1. Introduction

Health Impact Assessment (HIA) is a structured method that usually follows a multidisciplinary approach, combines qualitative and quantitative data and draws extensively on literature reviews and consultation with different stakeholders (Scott-Samuel, 1998). HIA is an important core element of this public health strategy. It seeks to predict the health impacts of the project before it is implemented, so that:

- Potentially significant adverse effects can be avoided or reasonably mitigated,
- Potentially positive effects enhanced, and
- The probability of sustainable development increased.

Kwaenoi Dam in the Kunchong district of Phitsanulok Province is a large project designed to store irrigation water for farmers in a 769 million m<sup>3</sup> reservoir. Dam construction is well known to have a host of impacts on workers and residents in the surrounding community: communicable and non-communicable diseases, malnutrition, construction accidents and social problems (Birley, 2003). Hence, HIA was conducted to establish an understanding of the baseline health conditions in the project area and to evaluate the potential health impacts on individual populations and communities affected by the construction process. In conjunction with Kwaenoi Dam's construction schedule, HIA was implemented in the area including

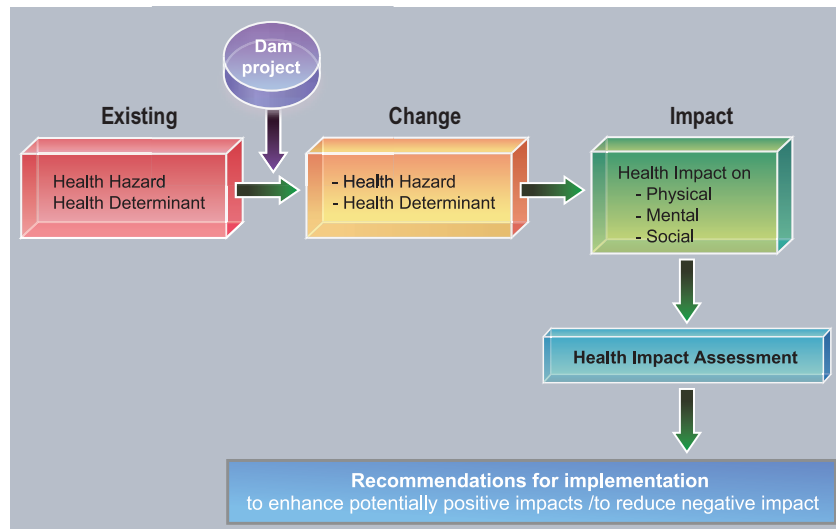
worker camps, villages and communities living near the dam site. Communicable and non-communicable diseases, injury and lifestyle were evaluated using questionnaire and specimen analysis.

## 2. Objective

The objective of this study was to establish the baseline health conditions in the project area and to evaluate the potential health impacts on individuals and communities affected by the project within six villages and among construction workers living near the dam site.

## 3. Conceptual framework

Existing health conditions in the project area to evaluate the potential health impacts (baseline data).



## 4. The Process

- 4.1 Established an HIA team to set up an HIA framework and procedures.
- 4.2 Systematic literature review including studies and research pertaining to health impacts of dam construction.

4.3 Scoping: identified the potential health impacts that need to be addressed and the stakeholders that need to be involved; publicized potential health hazard, community vulnerabilities, environmental factors and health risk associated with the Kwaenoi Dam project.

4.4 Developed tools for assessment of health impacts:

- Questionnaire
- Focus group
- Stool examination

4.5 Public review: reported recommendations to decision makers so that they may be able to collaborate with the public on the implementation of recommendations.

## Result

### Phase 1:




The baseline health conditions in the project area and the potential health impacts during project implementation are presented in Table 1.

**Table 1 Health-Related Issue during construction phase of the Kwaenoi Dam Project**

Health Hazard Health Risk	Vulnerable Group	Environmental factor	Baseline
1. Malaria	- workers - children - villagers working in the forest	- Water surface area increasing, water pathways changing communicable disease vector - Water related breeding habitats	- 18 malaria patients
2. Respiratory diseases	- workers - children - villagers live along the both side of road	- Construction of roads and increased truck traffic (one truck every 30 min) cause dust-induced respiratory tract problems	- road dust that can lead to increases the percentage of people contracting respiratory diseases (morbidity rate was 214.01 per 1,000 population)



Health Hazard Health Risk	Vulnerable Group	Environmental factor	Baseline
3. Diarrhea	- workers - children - villagers	<p data-bbox="667 485 992 562">- Poor sanitation such as toilet, water supply, waste</p>    <p data-bbox="667 1257 992 1318">- Poor food sanitation and hygiene are also critical issues</p> 	- diarrhea morbidity rate was 73.92 per 1,000 population
4. Parasites	- workers - children - villagers	<p data-bbox="667 1591 992 1623">- Poor sanitation, especially toilets</p> <p data-bbox="667 1629 992 1690">- The habit of eating raw or undercooked fish</p>	- parasites morbidity rate was 19.77 per 1,000 population (2005)

Health Hazard Health Risk	Vulnerable Group	Environmental factor	Baseline
5. Injuries and accident	- workers - villagers	- Construction of roads 	- traffic accidents and injuries (morbidity rate was 2.25 per 1000 population) - occupational accident 9%
6. Sexually Transmitted Disease (STDs)	- workers - villagers	- 70% of the 2,000 workers have no family in the workers' camp 	- spread of STDs, including genital ulcer disease, syphilis, gonorrhea chlamydia, HIV/AIDs due to increased interaction between high and low risk groups
7. Social well being	- villagers	- Road construction - Increased migration into the area - Increased infrastructure such as electricity and roads 	- stress and anxiety - rapid urban development change human being (restaurants, human behaviors, public service, etc.)

## Recommendations

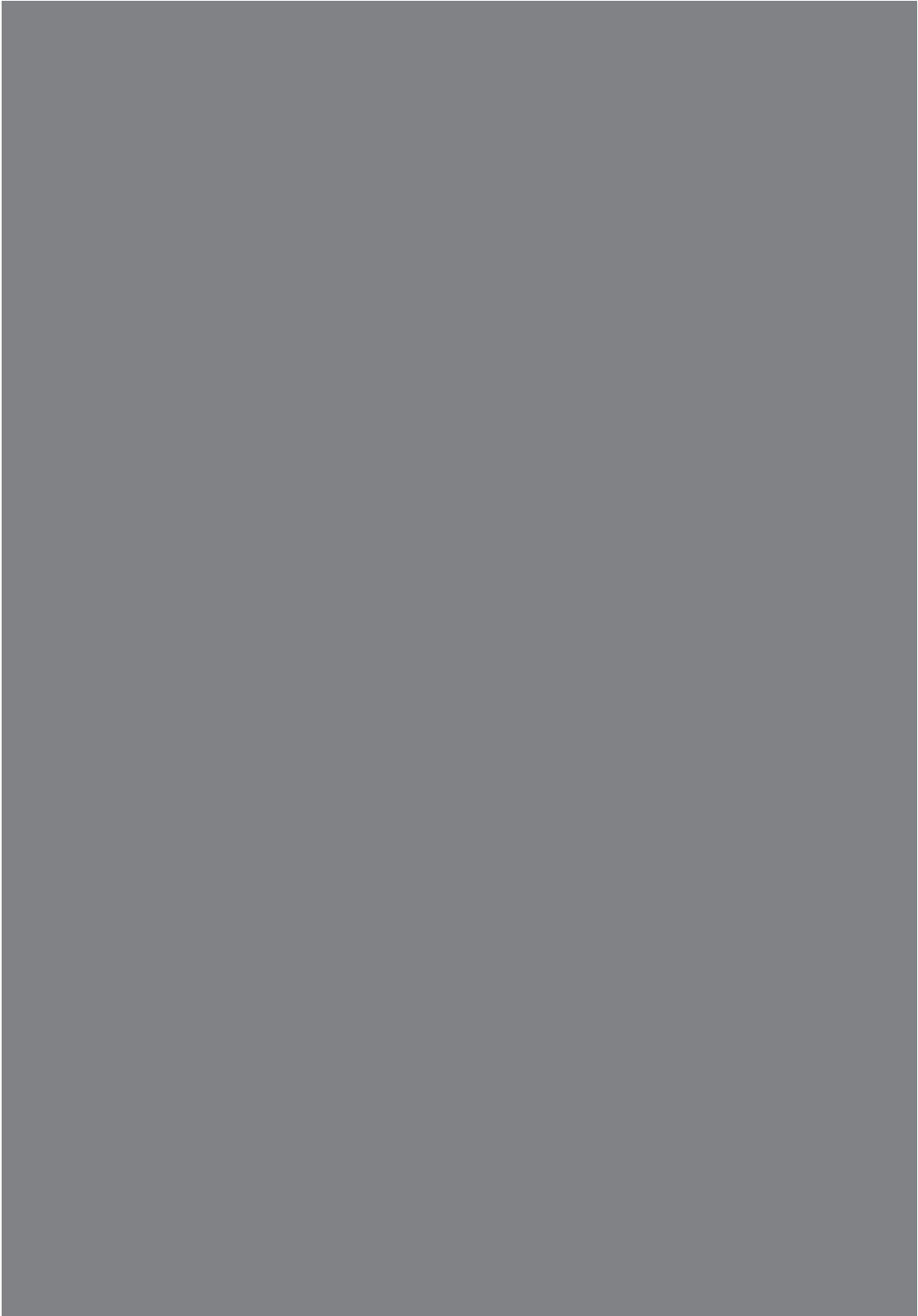
1. Access to clean water is very important during the construction of a dam therefore domestic water supplies should be protected from the contamination.
2. Providing construction camps and local restaurants with domestic water, latrines, waste receptacles and waste removal systems.
3. Raising awareness among communities regarding prevention of disease and health impacts, including support for health education, especially for local people.



4. Capacity building within the provincial health team to cooperate with the Ministry and the Kwaenoi Dam project officials.
5. Establish outbreak response teams with competent surveillance systems for communicable diseases and prevention and monitoring strategies.

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# 7

## REGIONAL COOPERATION ON HIA DEVELOPMENT FOR DEVELOPING COUNTRIES: THAILAND'S EXPERIENCE

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**A**lthough Health Impact Assessment (HIA) has been widely practiced in some parts of the world, the experience has mostly been confined to developed countries. Only recently has HIA been introduced to Southeast Asian countries, where the people are more vulnerable to adverse health effects from development. Even Thailand, which has had greater experience with HIA compared to other countries in the region, still has had difficulties in applying it. Why?

It is generally understood that most HIA models are developed by Western countries. Not surprisingly, the application of these HIA approaches in developing countries with their different socio-economic and political contexts may yield different outcomes.

Furthermore, international trade and communication may directly or indirectly stimulate transboundary consequences on health, which are not resolvable by one country acting alone. Therefore, developing countries are in great need of their own approaches and models for HIA development and HIA capacity building. This has led to the Cooperation on HIA Development for Developing Countries project, which was planned and carried out from 2005 to 2007 by the Healthy Public Policy Foundation and the Healthy Public Policy and Health Impact Assessment Program (HPP-HIA Program) of the Health Systems Research Institute, Thailand. The project received funding support from the Thai-health Global Linkage Initiative Program (TGLIP), so it was also frequently referenced as a TGLIP project.

**Objectives:**

1. To establish and improve the knowledge base on HIA and to build essential capacities for Thailand and neighboring countries.
2. To develop HIA training modules and manuals for developing countries.
3. To establish regional networking and cooperation mechanism on HIA development.

In pursuing these objectives, the HPP-HIA Program and the Healthy Public Policy Foundation have defined their roles as national-level supporting agencies for education about HIA, and how to use HIA and the development of Social Determinants of Health (SDH) as learning tools for healthy public policy within all Thai sectors. At the regional level, they see themselves as a coordinating body for the mutual development of impact assessment knowledge and sustainable health promotion techniques among different countries. Therefore, mutual gains among all participating regional organizations are anticipated, and each party is regarded as a strategic partner in HIA development.

To achieve these regional objectives, tasks were divided into three main components as follows:

Component I: HIA Knowledge Base Development and Communication

The core channel through which knowledge on HIA is developed and communicated in the International Association for Impact Assessment (IAIA) annual conference, which provides multiple sessions to share knowledge, experiences, and perspectives on impact assessment from various socio-economic, cultural, and political contexts of different countries. The diverse nature of the conference's content and participants has allowed Thailand to adjust its application of HIA in both local and national contexts.

The project has regularly supported and persuaded researchers, practitioners, and policymakers from Thailand and neighboring countries to disseminate their work and share their experience with others.

Component II: HIA Institutionalization in Southeast Asia

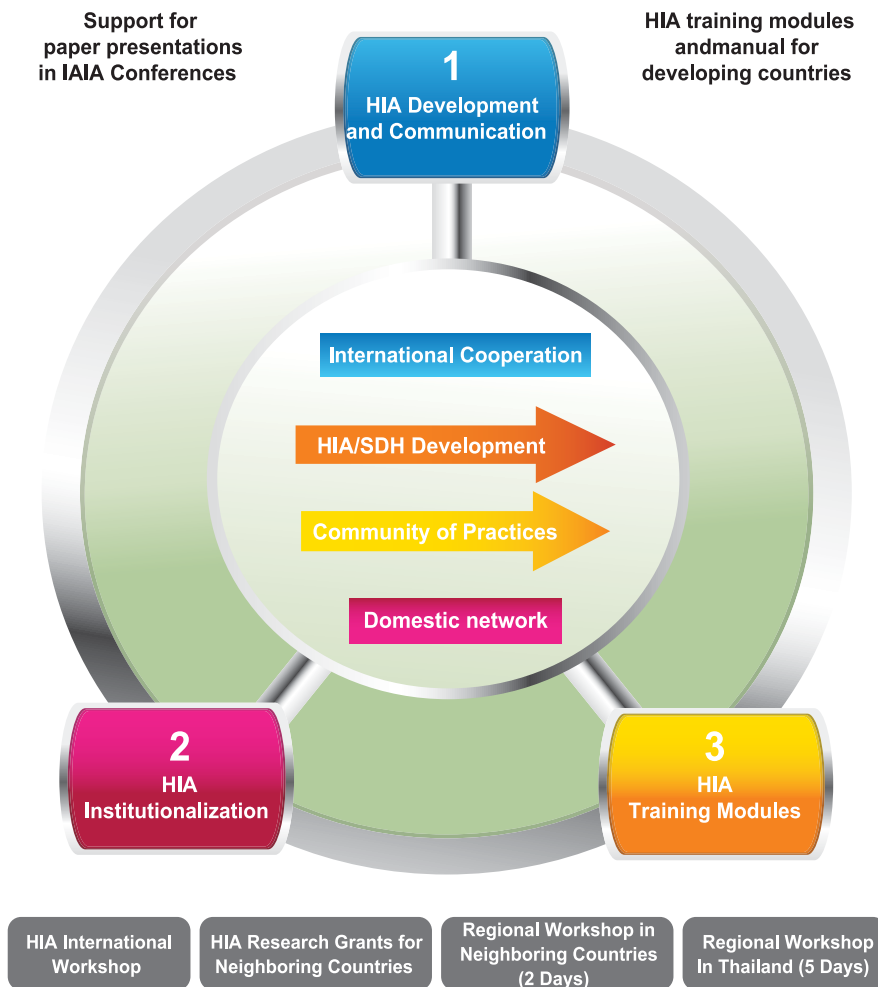
One of the most important prerequisites for success in establishing regional HIA networking and cooperation is the recognition of the benefits of HIA as a critical tool in bringing about healthy public policy and healthy societies within member countries.

For this reason, an international HIA workshop is held to provide a learning space on HIA principles and practices, as well as an entry point for formulating strategic partnerships for HIA development in Southeast Asia. In addition, a small number of grants are awarded to promote HIA research and case studies within the region.

**Component III: HIA Training Modules and Manuals**

To achieve the goals, some practical information and experience with HIA have been employed to develop training modules, which are appropriate to the needs and contexts of developing countries. Additionally, a regional HIA training course has been offered to strengthen HIA capacities in Thailand and neighboring countries so that they have the capacity to effectively design and apply HIA in their own countries.

**Figure 1: Conceptual framework of the regional cooperation on HIA development for developing countries.**



## HIA Development in Practice

### HIA publications

Academic publications have always been a core strategy employed by HPP-HIA Program/Healthy Public Policy Foundation for advancing understanding and sharing experiences on HIA and healthy public policy between Thailand and the international community. Some of these publications include:

#### ■ *Health Impact Assessment Training Manual*

- This manual offers a new approach to HIA based on the diversity of societal values, concepts, and analysis of policy alternatives. Its content is divided into six main parts.
- Introduction to HIA
- Analyzing Potential Health Impacts
- Analyzing Policy Alternatives
- Analyzing Policy Process
- Analyzing Evidence
- Public Participation in HIA Process



This manual was used in the HIA Interactive Training Course held in Khon Kaen, Thailand, in October 2006. It has also provided guidelines for subsequent trainings organized in Thailand and neighboring countries.

#### ■ *Global and Regional Challenges for a Healthy Society*

This is an anthology of the contributing papers from the 3rd HIA International Workshop organized in Nakhon Pathom, Thailand, in July 2006. It consists of academic papers written by foreign HIA experts, concepts and experiences of HIA in Thailand, and several healthy public policy cases. The international perspectives

have motivated an appropriate, collective response to the growing challenges to a healthy society both at the regional and global levels.

■ ***Toward Healthy Society: Healthy Public Policy and Health Impact Assessment in Thailand***

This is one of the first books conceptualizing the development of HIA and healthy public policy in Thailand. The book thoroughly explores the concepts and experiences of HIA development by various sectors in Thai society. It was first released at the 6th Global Conference on Health Promotion held in Bangkok in August 2005, and presented at several other venues since.

**HIA International Workshop**

The international HIA workshop on Global and Regional Challenges for Healthy Society was held in Thailand in July 2006. Its aims were to: 1) explore and define major challenges to healthy public policy and society in Southeast Asia, 2) develop conceptual frameworks and tools (especially HIA) to address the challenges, and 3) establish cooperation on HPP-HIA development in the region. The workshop was co-sponsored by the Health Systems Research Institute.

With 60 participants from Thailand and abroad, the workshop offered a wide range of methods such as discussions, brainstorming sessions, group work and presentation to address the following issues:

- Globalization and regional challenges for a healthy society.
- Healthy public policy: local to global movements.
- HIA and its contribution to healthy public policy movement: reflection from field visits.
- Opportunities for regional cooperation.
- The way forward.

Additionally, there were field visits to three areas to observe specific cases on how healthy public policy was being implemented:

- Agriculture public policy in Suphan Buri Province.
- Energy public policy in Ratcha Buri Province.





- Water management public policy in Tha Chin River Basin, Nakhon Pathom Province.

Poverty, along with the social and environmental impacts from development projects and policies, are seen as key pressures affecting people's health in Southeast Asia. Accordingly, regional challenges lie in creating balance and alternatives for development in order to reduce such pressures and promote better health opportunities.

### IAIA Annual Conferences

During the IAIA conferences in 2006 and 2007, the project provided funding for four to six Thai delegates each year to share experiences and knowledge on HIA and other fields of impact assessment with experts, researchers, and practitioners from around the world. The project also sought funds from other sources to support additional participants from developing countries, particularly in Southeast Asia.

The roles of the delegates included:

- Oral and/or poster presentations for different sessions (mostly relating to the health section).
- Coordination of and participation in sessions, practitioners' forum, etc.

Additionally, the project has supported publishing the delegates' contributing papers to the conferences. Therefore, not only were participants able to strengthen their HIA capacities but they also added to the international community's HIA knowledge base.

### HIA Research Grants for Southeast Asia

Three organizations submitted research proposals; each on a different topic as shown in the table below.

Table 1: Organizations and proposed research topics

Organization	Country	Research topic
National Institute for Occupational and Environmental Health	Vietnam	Industrialization and Urbanization in Vietnam
Environment Program, Mekong River Commission	Lao PDR	Aquatic Resources and Related Human Health in the Lower Mekong Basin
National Center for Environmental Health and Water Supply	Lao PDR	Water Supply and Sanitation and Community Health in the Lao PDR

Each research proposal was granted 50,000 Thai Baht to prepare a background paper on the topic. This was used to develop baseline data for further study and application of HIA in their countries. All background papers were then presented during the HIA Interactive Training Course. The participants discussed and gave valuable comments and suggestions on each topic.

Progress has been made in each case. For example, the Vietnamese team is currently applying HIA tools to study the impacts of urbanization and industrialization. The Environment Program of the Mekong River Commission is using HIA conceptual frameworks to develop "social indicators" for the study of Mekong River basin development impacts on local livelihoods. Meanwhile, the National Center for Environmental Health and Water Supply in Lao PDR is applying HIA to promote healthy public policy on water supply, sanitation and community health.

### **HIA Interactive Training Course**

In October 2006, Thailand hosted a regional HIA training course with two principal objectives: to strengthen HIA capacities and to devise a collective action plan on HIA development at the regional level. With 30 participants from different backgrounds and skills, multiple methods such as lectures, group work, discussion, brainstorming and field visits were arranged so that participants could explore various dimensions of HIA.

As the course is designed for the active participation of all, one of the most important outcomes materializing during the training is that participants from different countries with specific interests and experiences on various aspects of HIA can share their expertise with one another. This generates a very productive, mutual and ongoing learning process among countries in the region.

Thus, the HIA Interactive Training Course is a starting point for informal networking and cooperation on HIA in Southeast Asia.



## HIA Development Partners

Since its inception, regional cooperation on HIA development for developing countries has involved many active partners, both Thai and regional. Their contributions in terms of opinions, academic resources, and continued participation have been pivotal to the project's progress. The Thai partners are:

- National Health Commission Office (NHC)
- Health Systems Research Institute (HSRI)
- Thai Health Promotion Fund (ThaiHealth)
- Thailand Research Fund (TRF)
- Department of Health (DoH)
- Office of Natural Resources and Environmental Policy and Planning (ONEPP)
- World Health Organization-Thailand (WHO Thailand)
- Chiang Mai University
- Prince of Songkhla University
- Khon Kaen University

Partners outside Thailand are from various countries and sectors: governmental and non-governmental organizations, academic institutes, etc. A partial list includes:

- Center for Health Equity Training, Research and Evaluation, the University of New South Wales, Australia
- HIA Capacity Building Program in the Mekong Basin by WHO, In Went, and DBL
- National Center for Environmental Health and Water Supply, Lao PDR
- National Institute of Occupational and Environmental Health, Vietnam
- Ministry of Health, Cambodia
- Ministry of Health, Malaysia
- PAN Asia-Pacific
- Mekong River Commission
- International Association for Impact Assessment

## Lessons Learned

Over the years, the project has received valuable feedback from its partners and other participating agencies. It has faced many difficulties as well as responded to many opportunities. Similarly, it has realized both its strengths and weaknesses which can be summed up as follows:

- Although the IAIA Conferences provide a good opportunity for capacity building and knowledge development, they remain inaccessible or unaffordable for participants from many developing countries. Therefore, some regional forums and conferences are needed. These would likely generate greater participation and increased awareness of HIA and healthy public policy within developing countries and respond more effectively to their specific needs and contexts. Additionally, less formal activities such as visits from scholars and exchanges should be undertaken more frequently to help fill the gaps and better track the progress of HIA development in each country.
- Since HIA remains a new concept in several developing countries, domestic funding sources for HIA research and planning are often limited. However, developments in several countries like Lao PDR and Vietnam have shown that specific policy development opportunities combined with the capabilities of key policy actors who comprehend and communicate the concepts play an important part in determining the progress of HIA development in their countries.
- Although HIA principles and processes are offered, on-the-job trainings can provide more hands-on experience and better understanding of HIA and the healthy public policy process.

As outlined below, such lessons help shape the direction and approaches for ongoing HIA development for developing countries.

## The Way Forward

In the near future, it is hoped that support will continue for existing activities such as HIA development and capacity building in IAIA conferences. Moreover, with additional resources to facilitate the following activities, a greater number of stakeholders/partners could become involved.

1. Collaborative HIA case studies with topics on transboundary health impacts and/or common issues affecting health such as health impacts of Mekong river management strategies; palm oil plantation in Thailand, Cambodia, and Malaysia, and sustainable energy development in Southeast Asia.
2. Regional events such as workshops, conferences, and seminars, etc., to discuss specific HIA development concerns within the region and to seek appropriate ways to address them. The 2007 Southeast Asian and Oceania Regional Health Impact Assessment Conference is an outstanding example of such an approach.

3. Training course on HIA methodology to put HIA into practice. As stated above, the best way to understand HIA is to do it. However, some practical implementation guidelines and methods need to be provided in addition to concepts so that HIA can be applied to specific issues.
4. Development of networking facilities through the development of multiple channels of communication such as a website, journal, and newsletter to link all available sources of information and resources on HIA. Currently, the National Health Commission Office of Thailand is developing an HIA website that provides links to academic papers, other research, case studies and news on HIA in Thailand. Plans call for expanding the website's content to include sources from outside Thailand, particularly those in Southeast Asia and nearby regions.

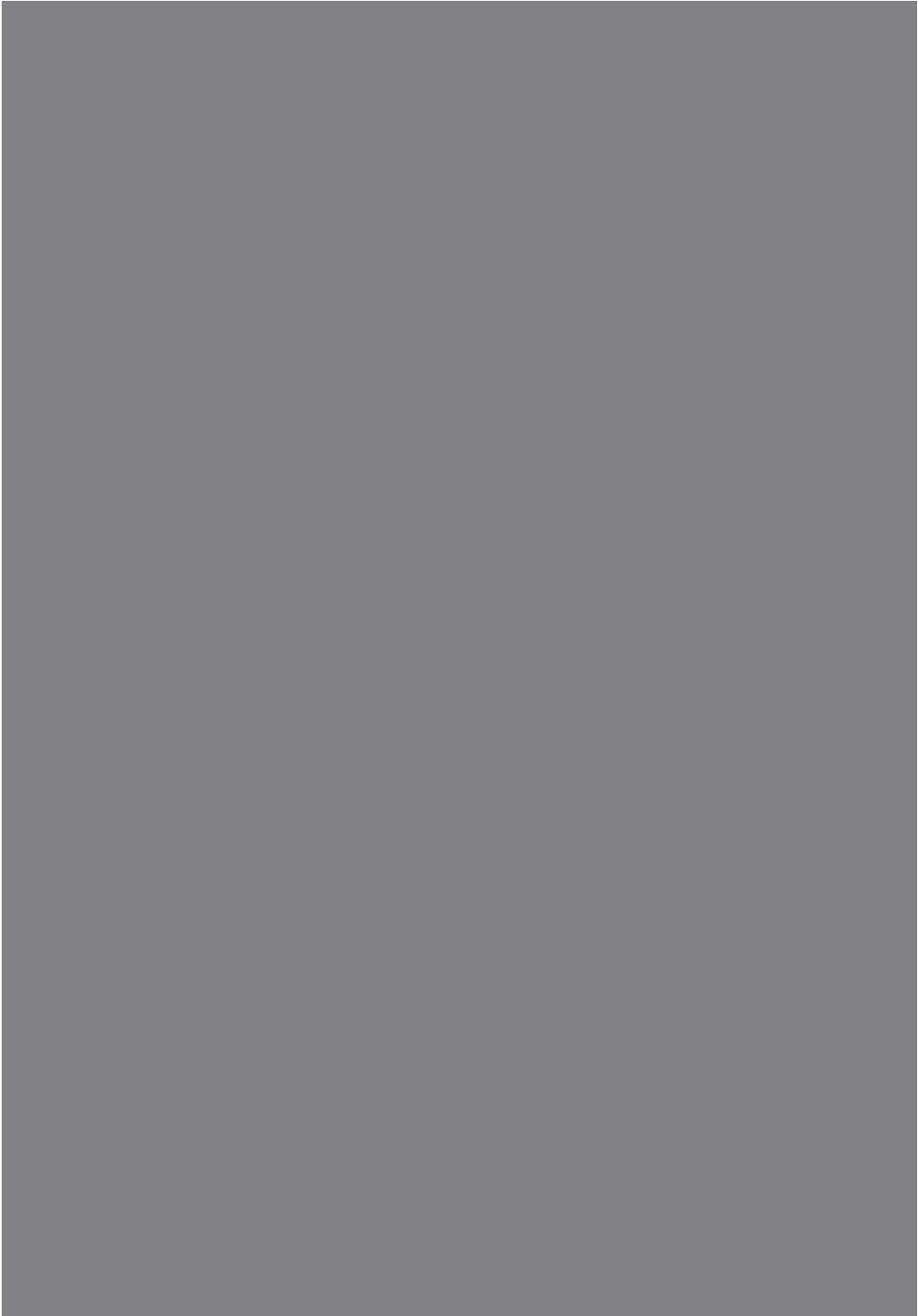
These proposed activities are the result of intensive brainstorming and the sharing of experiences among diverse parties. Through such participatory processes, it is hoped that the project can continue its productive development.

## Conclusion

Health is now seen as the total well-being of an individual and that of his or her society. The concept of health has evolved beyond merely the absence of illness or disease and now includes other aspects such as mental, spiritual, and social health. Consequently, health promotion requires an understanding of the complexities relating to the interconnectedness between different societal factors, and experience in addressing them. However, in some parts of society such knowledge and experience is lacking and educational programs are necessary to help reduce these gaps, both within and between countries. It may take a long time to achieve the goal of a globally healthy society, as health itself has become very dynamic. However, HIA is one useful tool among many to properly understand and address this evolving phenomenon. Additionally, what is consistently needed is vision and cooperation for promoting healthy living for all.

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# 8

## OUTCOME MAPPING AND MONITORING HIA PROGRESS IN THAILAND

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## 1. The Forces Driving Health Impact Assessment (HIA) in Thailand

The year 2007 was a special year for HIA development in Thailand as several institutional changes were seen. First, HIA was recommended in the 10<sup>th</sup> National Economic and Social Development Plan (2007-2011). The Plan's biodiversity and national resources security strategy reflected the development of HIA and social impact assessment in environmental impact assessments for pollution control activities.

Second, the Thai National Health Act B.E. 2550 (2007) was approved and entered into force on 19 March 2007. This was the first law to specifically outline requirements for HIA application. This ambitious legislation included several sections on HIA, which cover the right for Thai people to demand an HIA be conducted and to participate in HIA processes, as well as requiring the development of guidelines and procedures for HIA to be developed by the newly established National Health Committee.

Moreover, Thailand's new constitution was passed following the country's first referendum held on 19 August 2007 and entered into force five days later. Section 67 of the constitution states:



*"... Any projects or activities, which may cause serious impacts on the environment, natural resources, and health, cannot proceed without an impact assessment on environment quality and the health of the population in the local community nor proceed without organizing a public hearing process for affected people and stakeholders. ... People have the right to sue any governmental organization which fails to comply with the previous principle."*

While these driving forces have created powerful momentum for HIA development, they only provide fundamental principles for HIA in public decision making. The major challenge is how to put these principles into practice in the real world. This paper aims to provide operational concepts for designing and monitoring HIA progress in 2008. The main objective is to systematically translate these principles into operational strategies and practices.

## 2. Six Main HIA Development Areas

In 2007, HIA development in Thai society grew out of its introductory and experimental period (2000-2006), to play a more established role in policy and development processes. HIA has become a more practical approach to health promotion, human rights protection, and public policy development. In 2007, several HIA related organizations in Thailand jointly created an HIA Development Strategy for 2007-2011 to be implemented in six main areas:

- **HIA development in Environmental Impact Assessment** (EIA-based HIA), impact assessment at the project level.
- **HIA application at the community and local level** (community-based HIA), either by a community itself or by a local governmental organization.
- **HIA development for healthy public policy** (HIA for HPP) in various policy areas such as agriculture, energy, transportation, waste management, water management, etc.
- **HIA application for trans-boundary health impact management and international policy development** (HIA beyond the border), includes infrastructure development, and international agreements and negotiations.
- **HIA applications in the National Health Act** including the articulation of people's right to HIA and healthy public policy, the implementation of HIA, and the application of HIA by national, issue-based and area-based health assemblies.
- **Strengthening the knowledge base for HIA development** and to develop long-term training and capacity building plans for HIA.

### 3. Monitoring Questions

With Thailand's HIA development now underway in six distinct policy making areas, the main question remaining was:

*"How can we monitor HIA progress in these six areas?"*

As discussed earlier, to maintain momentum for HIA's development in Thailand, this question is quite relevant for HIA implementation in 2008. If we cannot adequately put these principles, i.e. HIA legal frameworks, into practices they are much less meaningful to policy making processes. Consequently, they may no longer be recognized as driving forces within Thailand's fast changing society.

To answer this question, the Healthy Public Policy Foundation applied the concept of outcome mapping developed by The International Development Research Center, Canada and presented in detail by Sarah Earl, Fred Carden, and Terry Smutylo in their 2001 book, "Outcome Mapping: Building Learning and Reflection into Development Programs".

Below we will review the concept behind outcome mapping, then how it will be applied in monitoring the progress of HIA development in Thailand.

### 4. The Concept of Outcome Mapping

According to Earl *et.al.*, outcome mapping recognizes that development is essentially about people relating to each other and their environment. The uniqueness of this approach lies in its shift away from assessing the products of a program, to instead focus on the changes in behavior, relationships, actions, and activities of the entities involved in the process, be they people, groups or organizations. In doing so, outcome mapping debunks many of the myths about measuring result. It helps a program be specific about the actors it targets, the changes it expects to see, and the strategies it employs and, as a result, is more effective in terms of the results it achieves. In other words, instead of focusing on the results which often depend on many uncontrollable factors (both positive and negative contributions), outcome mapping emphasizes shifts in "the directions and capacities" of those involved to achieve the results in a dynamic world.

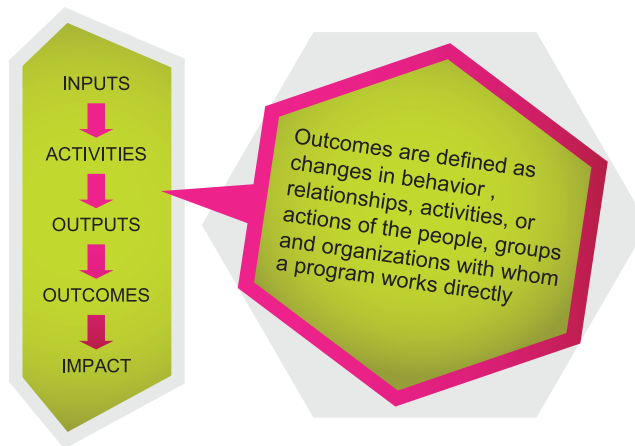
The main concept of outcome mapping in its application to HIA progress monitoring can be broken down into three components and summarized as follows.

## 1) Focusing on Outcomes

As introduced earlier, outcome mapping focuses on outcomes of development programs, not outputs nor impacts. In this concept "outcomes are defined as changes in behavior, relationships, activities, or actions of the people, groups and organizations with whom a program works directly".<sup>2</sup> (Figure 1). The main reason to focus on the outcomes rather than the results (or impacts) is to avoid:

- a) **The myth of linear cause and effect thinking**, which contradicts the understanding of development (including HIA development) as a complex process that occurs within an open system.
- b) Replacing of agreements and partnerships based on shared values with **bureaucratic programming** based on plans, budgets, and accounts.
- c) Overlooking multiple endogenous contributions and their interactions within development processes.
- d) **Reject new initiatives and actions**, which result from attempts to achieve the predetermined measurable or actionable results.

Figure 1 The Focus of the Outcome Mapping



Source: Sarah Earl, Fred Carden, and Terry Smutylo, 2001.

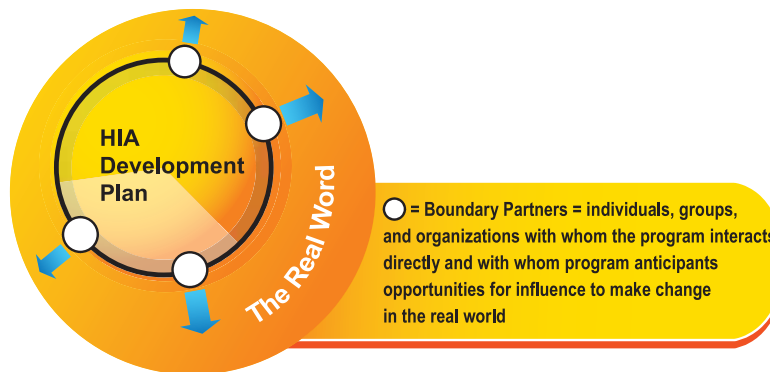
## 2) Focus on Strategic Partners: Boundary Partners

The second main characteristic of outcome mapping involves focusing on the strategic partners or, in outcome mapping terms, boundary partners, defined as:

*individuals, groups, and organizations with whom the program interacts directly and with whom the program can anticipate opportunities for influence<sup>3</sup>.*

The boundary partner is very important, since desirable changes in the real world normally occur not because of the program itself, but because of the multiple contributions of different partners. The word "boundary" is used to highlight the concept that although the program may work directly with these partners, the program cannot and should not control them. The main aim of the program is therefore to equip the boundary partners with the essential tools, techniques, resources, and arguments to contribute to the development process in the real world.

Figure 2 The Focus on Boundary Partners



Source: Sarah Earl, Fred Carden, and Terry Smutylo, 2001.

### 3) Focus on Strategic Relationships

Obviously, the different partners operate with different logic and responsibility systems, as well as within different environments and with different constraints. Therefore, it is very important to recognize these differences and find appropriate approaches for working with each boundary partner. Outcome mapping emphasizes the relationships between a program and each of its boundary partners. Outcome mapping defines three distinct but highly interrelated sets of activities and changes, and offers tools for monitoring each one. They are:

- **The organizational practices** of the facilitators or change agent of the program.
- **The strategies and activities**, which the program initiates to work with the boundary partner.
- **The outcome challenges and progress markers** for each boundary partner in working for changes in the real world.



These three sets of activities are connected by:

- **An outcome challenge**, which describes how the behavior, relationships, activities, or actions of a boundary partner will change if the program is perfectly successful.
- A set of **progress markers** to represent a change model for the boundary partners that illuminates the depth and complexity of the change being sought. Thus, progress markers are intended as a way for the program to understand and react to the change process in which the boundary partner is engaged.
- **Strategies and activities**, which are normally present in the form of a strategic map, represent the ways for the program to work with the boundary partners in order to contribute to the achievement of an outcome challenge.
- **Organizational practices**, which describe a well-performing organization that has the potential to sustain change interventions over time. The organization practices will support the program facilitator (or change agent) to work more effectively with the boundary partner through the well-defined strategies and activities.

Figure 3 Spheres for Monitoring



Source: Sarah Earl, Fred Carden, and Terry Smutylo, 2001.

## 4. Outcome Mapping Design for HIA Progress Monitoring

To apply this concept, outcome mapping suggests each program identify its intentional design. This is done by addressing the following questions:

- Why undertake the development program? Or what is the vision to which the program wants to contribute?
- Who are the program's boundary partners?
- What are the changes sought? This question leads to the identification of outcome challenges and progress markers.
- How will the program contribute to the change process? This question will help in defining strategy maps and organizational practices.

Applying these outcome mapping intentional design questions to the HIA Development Strategy contained in the 10th National Economic and Social Development Plan (2007-2011) reveals the following:

### 1) Why?

The HIA development Strategy for the 10<sup>th</sup> National Economic and Social Development Plan aims to develop HIA "to be a social learning process for healthy public policy development in various sectors and at various levels". This matches the six main areas of HIA development outlined above, including:

- HIA in EIA
- HIA for local government and community
- HIA for healthy public policy
- HIA in the National Health Act
- HIA across the border
- Knowledge base for HIA

### 2) Who?

In the HIA Development Strategy, the strategic partners in each HIA development area are clearly identified. Therefore, they can be directly referenced as "HIA boundary partners" for outcome mapping purposes, as shown in Table 1.



**Table 1 The HIA Boundary Partners for HIA Development Program**

HIA Development Area	HIA Boundary Partners
HIA in EIA	- Office of Natural Resources and Environmental Policy and Planning - Department of Disease Control
HIA for local government and community	- Department of Health - Selected local governments
HIA for HPP	- Health Public Policy Foundation - Policy stakeholders
HIA in National Health Act	- National Health Commission - National and local Health Assembly
HIA Across the Borders	- National Health Commission - World Health Organization
Knowledge base for HIA	- Various universities - HPP academicians and researchers

**3) What?**

Based on these six areas of development and their associated boundary partners, the outcome challenges are identified. However, the outcome challenges are quite abstract and their results depend on various factors. The progress markers of each outcome challenge, thus, must be developed to reflect and, consequently, to understand the complexity of changes in the real world. The classification of progress as either "expect to see", "like to see" or "love to see", will help to prioritize and to develop the practical working plan and, later, to monitor the desired changes. Moreover, these classifications will also indicate what changes or opportunities for changes are needed and being sought. Table 2 provides the outcome challenges and progress markers in each area of HIA development.

Table 2 The Progress Markers for HIA Development in Six Areas

Outcome Challenge	Progress Markers
<b>1. To integrate HIA in the EIA system and to develop EIA system to fit with the constitutional norms.</b>	
Expect to see	<ol style="list-style-type: none"> <li>1. Development of recommendations for improvements to public participation in the EIA system.</li> <li>2. Publication of a people's handbook on their rights as outlined in the new constitution and National Health Act.</li> <li>3. Development of HIA guidelines in specific sectors, such as energy or mining.</li> <li>4. Organizing public forums for EIA improvements and integrating HIA into EIA.</li> </ol>
Like to see	<ol style="list-style-type: none"> <li>1. Case studies in applying HIA in EIA systems, based on the guidelines.</li> <li>2. Development of comprehensive HIA guidelines for all EIA projects.</li> <li>3. Establishing the working group for developing HIA and EIA.</li> <li>4. Developing the governance assessment for EIA systems and projects.</li> </ol>
Love to see	<ol style="list-style-type: none"> <li>1. Complete reform of the EIA process.</li> <li>2. Application of community rights consistent with Section 67 of Thailand's new constitution.</li> </ol>
<b>2. The development of HIA to be one of the main tools for local governments and communities in developing healthy public policy and health protection.</b>	
Expect to see	<ol style="list-style-type: none"> <li>1. Development of HIA guidelines for local governments and communities.</li> <li>2. Training workshops for local governments and communities in various parts of Thailand.</li> <li>3. Several HIA case studies conducted by local governments and communities.</li> </ol>
Like to see	<ol style="list-style-type: none"> <li>1. Amendment of the Public Health Act to integrate HIA into the legal procedures of local governments.</li> <li>2. Strengthen regional and local leaders to help build the capacities for new local government and community administrations.</li> <li>3. Synthesizing the experiences and knowledge gained from HIA case studies for application at the local level.</li> <li>4. Presenting the experiences and knowledge of HIA at the local level in both national and international forums.</li> </ol>



Love to see	<ol style="list-style-type: none"> <li>1. Local governments investing in HIA for the sake of their own people.</li> <li>2. Organizing a forum with the Ministry of Interior for integrating HIA into local governments' general practices.</li> </ol>
<b>3. The development of HIA for healthy public policy and integration of HIA into some policy processes in Thailand</b>	
Expect to see	<ol style="list-style-type: none"> <li>1. Development of an HIA database for policy-based HIA (or SEA) in two main areas.</li> <li>2. Development of two comprehensive policy options and conducting strategic HIAs.</li> <li>3. Organizing a public forum and communication plan in developing healthy public policy.</li> </ol>
Like to see	<ol style="list-style-type: none"> <li>1. Providing recommendations for implementing SEA as mentioned in the 10<sup>th</sup> National Development Plan.</li> <li>2. Supporting thematic health assemblies to actively advocate for healthy public policy.</li> <li>3. Analyzing the lessons learned and knowledge from applying HIA in healthy public policy processes.</li> <li>4. Presenting lessons learned and knowledge from applying HIA in healthy public policy processes in both national and international forums.</li> </ol>
Love to see	<ol style="list-style-type: none"> <li>1. Several policy institutions become interested in healthier policy options.</li> </ol>
<b>4. To develop guidelines and applications procedures for HIA in the National Health Act</b>	
Expect to see	<ol style="list-style-type: none"> <li>1. Publication of a people's handbook for developing healthy public policy according to the constitution and the National Health Act.</li> <li>2. Supporting area-based and issue-based health assemblies in applying HIA to their health assembly processes.</li> <li>3. Developing the guidelines and procedures for upholding the individual and community rights guaranteed by the National Health Act.</li> </ol>
Like to see	<ol style="list-style-type: none"> <li>1. HIA case studies have been applied in area-based and issue-based health assemblies for developing healthy public policy.</li> <li>2. Establishing a public advisory unit to assist people and communities in exercising their rights with respect to the public policy processes.</li> <li>3. Developing governance principle and guidelines for HIA application in the National Health Act.</li> <li>4. Analyzing the lessons learned and knowledge gained from applying HIA in the National Health Act.</li> </ol>

Love to see	1. Supporting health assemblies' policy recommendations into well-recognized public policy options.
<b>5. To introduce the application of HIA for cross-border impacts and international relation policy</b>	
Expect to see	<ol style="list-style-type: none"> <li>1. The presentation and publication of more than five HIA articles in the annual HIA conference and forum.</li> <li>2. Involvement with the HIA 2008 Southeast Asian and Oceania HIA conference.</li> <li>3. The continuous development of HIA training courses and materials.</li> </ol>
Like to see	<ol style="list-style-type: none"> <li>1. Strengthening the HIA Southeast Asian and Oceania network.</li> <li>2. Hosting the HIA 2008 Southeast Asian and Oceania HIA conference.</li> <li>3. Publication of a comprehensive HIA document synthesizing the experiences and lessons learned from Thailand.</li> </ol>
Love to see	<ol style="list-style-type: none"> <li>1. Conducting collaborative HIA case studies between countries within the region.</li> <li>2. Setting up an effective mechanism for working together across the region.</li> </ol>
<b>6. To strengthen the knowledge base for HIA development and to develop long-term education and capacity building for HIA</b>	
Expect to see	<ol style="list-style-type: none"> <li>1. Development of HIA courses in various universities.</li> <li>2. Developments of a clear knowledge base for HIA within the holistic health (or ecosystem health) approach.</li> </ol>
Like to see	<ol style="list-style-type: none"> <li>1. Developing connections between the health dimension and other development dimensions for HIA application.</li> <li>2. Core HIA courses offered in university education.</li> <li>3. Developing the long-term human development plan for HIA.</li> <li>4. Publication of HIA textbooks for graduate education.</li> </ol>
Love to see	<ol style="list-style-type: none"> <li>1. Long-term education plan for HIA supported by several funding agencies.</li> <li>2. Organizing the national HIA academic conference.</li> </ol>

#### 4) How: The Strategy Map

From the outcome challenges and progress markers, the next step is to develop the strategy map. In fact, the strategy map should be developed from each boundary partner, but due to space limits here, Table 3 presents a summary of each HIA development area (outcome challenge). In this strategy map, three sets of strategies and activities are identified. The first set, causal relationships, is the direct intervention and interaction between programs and boundary partners. The second set, the persuasive component, contains elements aimed to persuade the boundary partners to exercise greater efforts and initiative to achieve the desirable changes. Last, the supportive component contains activities that the program should support with each boundary partners to achieve the outcome challenges.

**Table 3 The Strategy Map of Each HIA Development Area**

Strategy	Casual	Persuasive	Supportive
HIA in EIA	constitutional norms working group	people forum governance assessment	guidelines workshop
HIA for local government and community	guidelines training	case studies forum	training website consulting
HIA for HPP	case studies SEA norms	policy documents and forum	training workshop activities
HIA in National Health Act HIA Across the Borders	legal rules (Section 11) HIA 2007	health assembly SEA-Oceania	Health Assembly Academy case studies
Knowledge base for HIA	HIA2008 HIA courses HIA textbooks	Network thesis on HIA applications	workshops fund, advisers, materials

#### 5) How: Eight Organizational Practices

Last, the organizational practices of well-performing organization will be described. All these organizational practices will be offered for use in self-assessments and later self-improvement of the HIA facilitator. Thus, these organizational practices will be used as the main criteria for HIA facilitator's improvement.

- Prospecting for new ideas, opportunities, and resources.
- Seeking feedback from key informants.
- Obtaining the support of your superiors.
- Assessing and (re)designing products, services, systems and procedures.
- Checking up on those already served to add value.
- Sharing your best wisdom with the world.
- Experimenting to remain innovative.
- Engaging in organizational reflection.

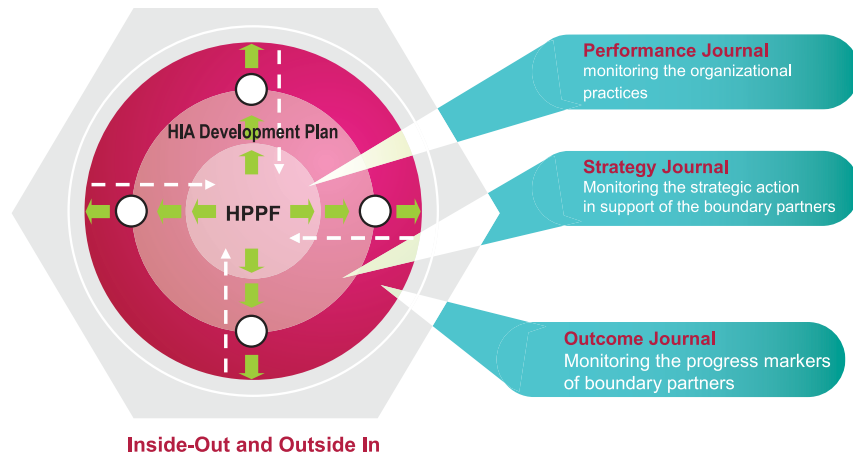
## 6. Monitoring Three Parallel Processes

Identifying the boundary partners, the outcome challenges, the progress markers, the strategy map and organizational practices, is critical to effective planning for outcome mapping. At the same time, these planning frameworks can also be used to monitor the progress of the program. Outcome mapping suggests three types of information that can be monitored on an ongoing basis, both to demonstrate the results and to help improve performance. These are referred to as the "three parallel journals", and include:

- An Outcome Journal - monitoring the boundary partners' achievement of progress markers.
- o A Strategy Journal - monitoring a program's (or facilitator's) actions in support of the boundary partners.
- o A Performance Journal - monitoring the organizational practices being employed by the program (or facilitator).

Therefore, in 2008, Thailand's HIA development program will apply these three journals within the outcome mapping process to monitor our progress. This monitoring will provide feedback information from the outcome challenges and progress markers, the implementation strategy map, and organizational improvement practices. In other words, the outcome mapping monitoring focuses on the whole chain of HIA development and strategic interactions with different boundary partners, as presented in Figure 4.

Figure 4 Monitoring Mapping in the Outcome Mapping Concept



## 7. Conclusion

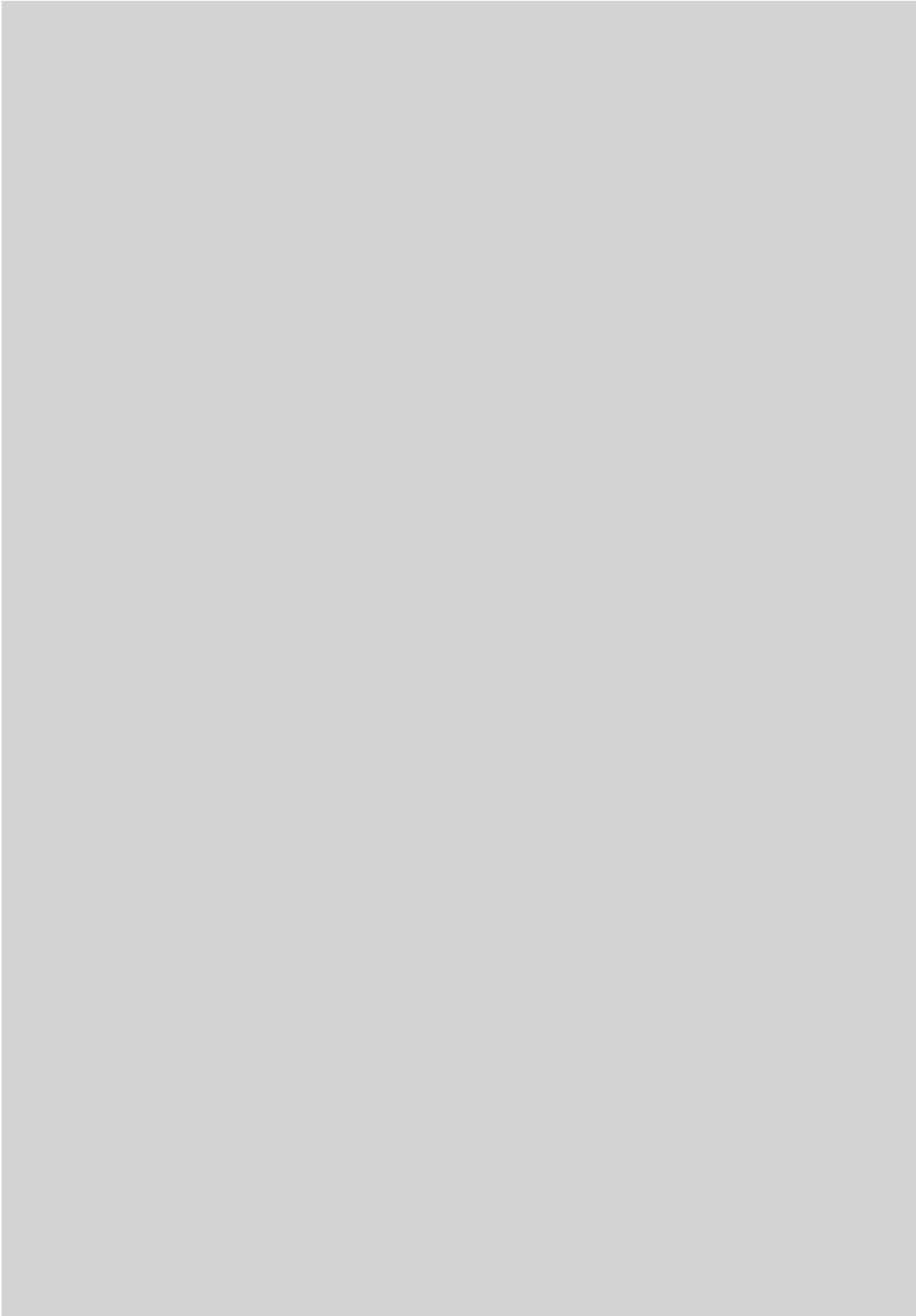
To monitor and reflect on HIA development progress in different areas, Thailand's HIA development program will apply the concept of outcome mapping. Based on this concept, Thailand's HIA development program will not focus on the end results, but we will mainly focus on the interconnection of outcomes, strategy maps, and organizational practices. Based on this monitoring process, we will focus equally on both inside-out and outside-in perspectives. Hopefully, this outcome mapping monitoring will help us to understand the changes and improve our performance in the complex world.

However, it is still too early to evaluate the usefulness of this attempt. During 2008, these three sets of monitoring information will be collected and analyzed. Consequently, based on the monitoring information, adjustments and improvements to the HIA development strategy and organizational practices are expected. The results of this outcome mapping will be analyzed, summarized, and presented at the HIA 2008 conference.

<sup>1</sup> Sarah Earl, Fred Carden, and Terry Smutylo, 2001. **Outcome Mapping: Building Learning and Reflection into Development Programs**, The International Development Research Centre, Canada.

<sup>2</sup> Sarah Earl, Fred Carden, and Terry Smutylo, 2001. (Op. Cit.)

<sup>3</sup> Sarah Earl, Fred Carden, and Terry Smutylo, 2001. (Op. Cit.)







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