

# HEALTH IMPACT ASSESSMENT

*Empowering People Ensuring Health*



## THAILAND'S HIA DEVELOPMENT REPORT 2007-2008

PREPARED BY

THE ACADEMIC WORKING GROUP ON HIA 2008:

ASIA AND PACIFIC REGIONAL CONFERENCE ON HEALTH IMPACT ASSESSMENT

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DEVELOPMENT  
REPORT  
2007-2008**

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## List of Acronyms and Abbreviation

<b>AIT</b>	Asian Institute of Technology
<b>CHIA</b>	Community Health Impact Assessment
<b>EIA</b>	Environmental Impact Assessment
<b>HIA</b>	Health Impact Assessment
<b>HPP</b>	Healthy Public Policy
<b>HPP-HIA Program</b>	Research and Development Program on Healthy Public Policy and Health Impact Assessment
<b>NEF</b>	Noise Exposure Forecast
<b>OKMD</b>	The Office of Knowledge Management and Development
<b>SEA</b>	Strategic Environmental Assessment
<b>SIA</b>	Social Impact Assessment
<b>T-GLIP</b>	Thai-health Global Linkage Initiative Program
<b>EC</b>	Expert Committee
<b>NHSRC</b>	National Health System Reform Committee
<b>NHC</b>	National Health Commission
<b>AOT</b>	Airport of Thailand Public Co., Ltd
<b>NBIA</b>	New Bangkok International Airport Co., Ltd
<b>CMU</b>	Chiang Mai University
<b>HPPF</b>	Healthy Public Policy Foundation
<b>NRC</b>	National Research Council
<b>NHSRC</b>	National Health System Reform Committee
<b>ONEP</b>	Office of the Natural Resources and Environmental Policy and Planning
<b>HSRI</b>	Health Systems Research Institute
<b>HPPDP</b>	Health Promotion for People with Disability Program
<b>Thai Health</b>	Thai Health Promotion Foundation
<b>LAO</b>	Local Administrative Organization

Part I  
Development  
of HIA System  
in Thailand



# 1 Background of HIA System Development in Thailand

The development of Health Impact Assessment (HIA) in the Thai society was initiated in 2000 under the conceptual framework of National Health System Reform. Designed as a social learning process, the concept of HIA system development was aimed toward Healthy Public Policy (HPP) and healthy society. The research and development program on HIA was set up in 2001 under the Health Systems Research Institute with the focus on health impact from policies, plans, and projects from non- health sectors.

When there was the Public Administration System Reform in 2002, the Ministry of Public Health set up the Sanitation and Health Impact Assessment Division under Department of Health, to develop health impact assessment system in order to support the enforcement of Public Health Act, as well as research and development of the surveillance system on health impact in local communities.

Through out these years, various sectors in the Thai society have applied the HIA in many areas and at all levels, from small projects in the communities to the Mega projects with severe impacts to society, such as Contract Farming system, industrial development, and mining. The National Economic and Social Advisory Council (NESAC) subsequently proposed the Government to continuously develop the HIA system. The Ministerial Cabinet's Resolution on May 31<sup>st</sup> 2005 approved the NESAC Recommendation on HIA and requiring the Ministry of Public Health to report the progress of HIA system development to the cabinet and NESAC.

Under the 10<sup>th</sup> National Economic and Social Development Plan (2007-2011), the strategy of national development on biodiversity protection and integrity of natural resources and environment has required to the development of efficient management aimed at reducing emissions and controlling activities that probably cause an impact on the quality of life. This led to the formation of system, mechanism, and environmental and health impact assessment indicators, and the development of social impact assessment (SIA) and health impact assessment systems in the Environmental Impact Assessment (EIA) report. In addition, the Environmental Quality Management Plan (2007-2011) also gives importance to the health impact assessment.

Moreover, the National Health Act B.E. 2550 (2007), which came into force on March 19<sup>th</sup> 2007, is the first law of its kind that has a clear provision on HIA system, so does the Constitution of the Kingdom of Thailand B.E. 2550.

At present, agencies and organizations from various sectors have paid more attention to HIA, i.e. state agencies, local administrative organizations, community-based organizations, academics, non-governmental organizations, and private sectors. Consequently, HIA has been applied at various levels from project-based to policy-based levels. This includes implementation of HIA system in the legal mechanism, HIA in Environmental Impact Assessment, HIA for local administrative organizations and community-based organizations, HIA for Healthy Public Policy, as well as HIA for the National Health Assembly.

Thailand's HIA Development Report (2007-2008), as a result, is an overview of the progress of HIA system development from the annual report of the year 2006. It summarizes the implementation of concerned agencies that actively contribute developing HIA system through existing channels. Those agencies include Department of Health, Department of Disease Control, Office of the Natural Resources and Environmental Policy and Planning, Office of the National Health Commission, health assemblies, as well as community-based organizations and civil society that have applied HIA to develop and push forward Health Public Policies towards the sustainable healthy society.

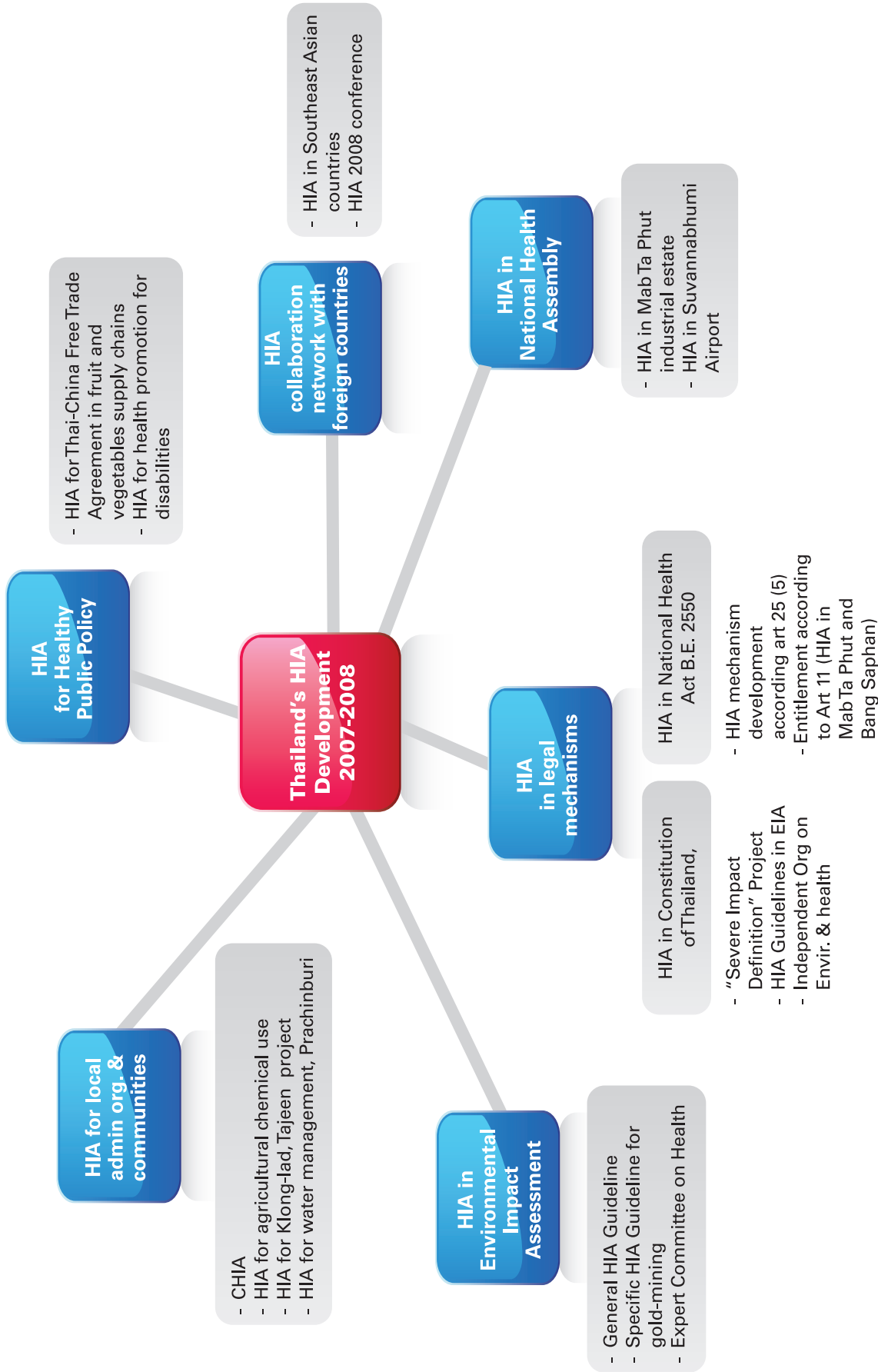
# 2 An Overview of HIA System Development in Thailand During 2007-2008

The development of HIA system in the past two years (2007-2008) was undertaken by various sectors and at all levels from project to policy level. HIA were developed and applied according to missions, duty and roles of each organization. Thus, the development of HIA system in Thailand has not been limited to one particular approach.

Based on Thailand's HIA Development Report 2006, HIA development has been categorized into four approaches, which are as follows;

- HIA application in environmental impact assessment (called EIA-based HIA)
- HIA application at the community and local levels (called community-based HIA)
- HIA application for healthy public policy (called HIA for HPP) in different fields such as policies for agriculture, energy, transportation, waste management, and water management.
- HIA application for transboundary health impact management and public policy development (called HIA beyond the border). This includes infrastructure development and international agreements and negotiation

Nevertheless, at present there are also other approaches in applying HIA system, such as HIA system development in the legal mechanism which refers to HIA in the Constitution of the Kingdom of Thailand B.E. 2550, HIA in the National Health Act B.E. 2550 (2007), as well as HIA in the health assembly, an important mechanism that helps developing a healthy public policy in Thailand. The overview of Thailand's HIA system development in the past two years is summarized in a following diagram;



**Diagram 1** An Overview of HIA System Development in Thailand During 2007-2008

# 3 Health Impact Assessment Network

## 3.1 National Network

### ■ Department of Health

Since the reform of the bureaucracy in 2002, the Ministry of Public Health has established the Sanitation and Health Impact Assessment Division under the Department of Health, in order that this division was responsible for conducting the health impact assessment in line with the health law provisions, and undertaking research and development of surveillance system on health impact assessment in the local communities. At present the Department of Health puts HIA as part of the Department's development strategies during 2008-2011 under three objectives; 1) Developing HIA system, 2) Building capacity of local communities for HIA implementation and 3) Setting up a community-based environmental and health surveillance system.

### ■ Department of Disease Control

The Occupational and Environmental Health Bureau under Department of Disease Control, as an academic institution for the surveillance, prevention and control of disease or other environmental health impacts, has initiated guidelines on health impact assessment for all project types that require EIA, and pushed forwards these HIA guidelines and health indexes to be incorporated into the EIA report in accordance with the National Environmental Quality Promotion and Preservation Act B.E. 2535 (1992). In doing so, the Bureau in 2006 drafted the HIA guidelines for airport and cement plant projects by applying the health risk assessment principles. In 2008, the Bureau developed the HIA guidelines for the overview EIA report, including those for gold mining projects.

### ■ Office of the Natural Resources and Environmental Policy and Planning

Since the 10th National Economic and Social Development Plan (2007-2011), the Constitution of the Kingdom of Thailand B.E. 2550, and the Environmental Quality Management Plan (2007-2011) have given importance to the incorporation of HIA development in the EIA report, the Office of the Natural Resources and Environmental Policy and Planning which is the key responsible agency in this area has developed and incorporated HIA in the EIA report.

During the 2007 fiscal year, the Office was approved to develop social and health impact assessment methodologies, to strive a goal of developing HIA guidelines and incorporating them into EIA report for the interest of relevant agencies.

### ■ National Economic and Social Advisory Council

The National Economic and Social Advisory Council (NESAC) has paid attention to and submitted a proposal of HIA development for the Cabinet's consideration in January 2005. On May 31st in the same year, the Cabinet approved the proposal for its principles, processes, organizations and mechanisms, and required the Ministry of Public Health to report the progress of HIA system development before the cabinet and NESAC. Following the Cabinet Resolution, the NESAC set up a working group on quality of life and public health development, and consumers' protection to consistently monitor and provide support on Thailand's HIA development.

### ■ National Health Commission Office

The National Health Commission Office (NHCO) allocates funding to support the generation of knowledge, and to drive the implementation of policies, enhancement of networks and development of potential to improve health. The NHCO emphasises "the inspiring and expediting of change" to promote, support and develop a health situation that is sustainable for the Thai public and society at large.

Since the National Health Act was just enacted in 2007, NHCO has speeded up its performance in several HIA related issues, both directly and indirectly. For example, it developed a national health system constitution, criteria and methodology in undertaking the HIA, the people's entitlement in living in an enabling environment, entitlement to access to information provided by the state agency on negative social impact attributed by a public policy, and the public request to conduct HIA, etc.

### ■ Health Systems Research Institute

The Health Systems Research Institute co-ordinates and supports research for developing the health system. It also compiles and disseminates knowledge on health and the health system in Thailand and abroad. The HSRI works in three ways – by developing the network of health system research institutes (system base), the public health alliance institutes (locations base), and the network of health system research (issue base).

In the year 2000, the HSRI supported research into the development of a health impact assessment system as technical support for the National Health Act at that time. The outcome evolved into a network for health system research, namely the plan for research and development of the health impact assessment system in 2001. Two years later, the plan was renamed "Program for research and development of a Health Public Policy and Health Impact Assessment system (HPP-HIA)." The HPP-HIA program determined that research be conducted largely into the health impacts of policy, planning and projects resulting from policy directives beyond public health.

### ■ Thai Health Promotion Foundation

The Thai Health Promotion Foundation (called Thai Health) is a funding institute aimed at supporting and building knowledge base, driving policies, establishing network and building capacity for health promotion development by focusing "sparkling and mobilizing changes" in order to support, promote and develop the health promotion process towards the sustainable healthy society for Thai people.

In 2006, under the Thai-health Global Linkage Initiative Programme (T-GLIP), Thai Health allocated a budget to implement a project for developing the potential and competence of

developing countries to assess health impacts. The budget went to HPP-HIA, HSRI and the Healthy Public Policy Foundation (HPPF). Work on the project was important to developing the knowledge and potential of HIA personnel in Thailand on the international stage. The project was also a way of expanding the network of co-operation in the field of HIA in various countries in Southeast Asia.

### ■ National Research Council

The National Research Council has organised projects to inspect the status of biological science and health research, and to build a related knowledge base. The projects focus on research into health systems and policies with the aims of:

- 1) developing the survey system and surveying the status of basic research;
- 2) disseminating data on research units, researchers and research Sections.

The NRC has compiled the data base of research units and researchers who specialise in HIA and interested parties can search such information on the NRC's website.

### ■ Institutes of Higher Education

Several institutions of higher education offer courses on HIA as compulsory or optional subjects. At the same time, several institutions give instruction in HIA in courses on public health and the environment. Such institutions include:

- Udonthani Rajabhat University, where HIA is a compulsory subject for students pursuing a degree in Public Health Science, and an optional subject for students in other branches who are interested;
- Chiang Mai University, where HIA is an optional subject for graduate students pursuing a Master's Degree in Public Health Science;
- Higher education institutions which offer courses on HIA in subjects related to public health and the environment such as Khon Kaen University, Prince of Songkhla University, Mahidol University, Mahasarakham University, Naresuan University and Srinakharinwirot University.

### ■ Healthy Public Policy Foundation

The Healthy Public Policy Foundation (HPPF) is a private, non-profit development organisation that was born of a small group of people who saw the importance of applying technical knowledge to drive society towards a state of healthiness that is sustainable. The HPPF gives technical advice on HIA for the development of public health policies to community organisations, grass roots organisations and agencies or organisations that need technical help. This includes training courses and the provision of knowledge on HIA to agencies or organisations interested in applying the outcomes of HIA's.

### ■ Grass roots organizations

The development of HIA in Thailand is not only limited to research and assessment of health impacts by experts and technicians. This stems from the fact that HIA in Thai society has evolved from the basis of thinking that HIA instruments should be adapted as part of an exchange of knowledge that will lead to public policies that are benign and conducive to good health.

Therefore every sector of society, especially the grass roots, can also adapt HIA for proposing health impacts in the various respects they regard as important to respective communities. The outcome is called "the grass roots version of health impact assessment." Examples of such work include:

- HIA on the development of Map Ta Phut settlement and nearby area;
- HIA by the grass roots on the hydro-electricity plant using water from the Pak Moon dam;
- HIA on the potash mining in Udorn Thani Province;
- HIA on orange plantations in Chiang Mai Province;
- HIA on water management in Prachin Buri Province;
- HIA by the people of the Tachin Basin on self-help in water management.

## 3.2 International Network

### ■ Public Health Advisory Committee (PHAC), New Zealand

This is a committee sanctioned by the law establishing the National Health Committee (NHC) that dispenses advice on public health to the public health ministry in New Zealand.

### ■ Centre for Health Impact Assessment (CHIA), U.K.

A new HIA agency recently set up by the Institute of Occupational Medicine (IOM), it focuses on analysing health risks.

### ■ Health Canada

A central government agency, it looks after the health of Canadians with emphasis on reducing risks and dangers to health. It focuses on research and development of the process of assessing impacts on health and the environment.

### ■ The Institute of Public Health in Ireland

This institute emphasises management of problems deriving from health injustices all over the island of Ireland. The institute aims to develop the potential for assessing health impacts across the country.

### ■ International Association for Impact Assessment (IAIA), USA

An international organisation which co-ordinates and organises international conferences and seminars on health assessments on a yearly basis. Each year, an estimated 2,500 specialists, and technicians working on every respect of assessment, including concerned state officials and interested parties, come together in IAIA conferences.

### ■ International Health Impact Assessment Consortium (IMPACT), U.K.

Born of co-operation from several agencies, IMPACT brings together a team of experts highly knowledgeable and experienced in health assessment. IMPACT offers research and development services, dispenses advice and gives technical support. It also organises educational and training courses related to HIA. The Department of Public Health, University of Liverpool initiated this co-operation.

### ■ Centre for Health Equity Training, Research and Evaluation (CHETRE), Australia

This is an agency of the Centre for Primary Health Care and Equity, University of New South Wales. It concentrates on justice and equality in health, and development and assessment of policies, planning and other activities. This includes the development and assessment of health and public health policies in New South Wales.



### ■ Department of Epidemiology & Public Health, University College London, U.K.

This department aims to improve understanding in matters of health and to prevent illnesses by intense research. It also develops research regulations and methods and lends importance to improving knowledge on social factors that determine health. The research group that does HIA work is the Health and Social Surveys Research Group (HSSRG).

### ■ Ben Cave Associates, U.K.

A leading consultancy firm that works on health issues, sustainability and planning. The firm is experienced in managing health problems from field planning and in assessing impacts on health and society.

### ■ Birley HIA, U.K.

Composed of independent HIA consultants, this group specialises in energy development projects and organise HIA training courses.

### ■ International HIA Blog

The blog presents news on latest updates, and a variety of views on HIA. It also discusses and exchanges views on international policies and practices.

### ■ HIA Community Wiki

This website aims to give up-to-date data on HIA, including related theoretical knowledge on policies and practices all over the world. Easy to use, convenient and quick to access data, the website provides for everyone to take part in discussing and learning HIA issues all the time.

# 4 Health Impact Assessment According to Legal Mechanisms

Even though, the HIA system in Thailand has been developed as a tool for developing Healthy Public Policy, with the aim of institutionalization of HIA in Thai society rather than aiming for a formal, legal structure. This approach will not have the sole authority and enforcement to make decisions or approve any projects by law, as in the case of Environmental Impact Assessment.

However, HIA currently has been legislated in two laws that are the Constitution of the Kingdom of Thailand B.E 2550 (2007) and the National Health Act B.E. 2550 (2007). Both laws lend importance to HIA as a tool for building a healthy society together.

The parallel development in both respects will be an important basis for further HIA development that leads to public policies conducive to good health and to build a benign society in Thailand.

## 4.1 Health Impact Assessment in the Constitution B.E 2550

Enforced on August 24th, 2007, the constitution is the highest law that makes important provisions for health impact assessment in Section 67:

**Section 67:** The right of a person to participate with State and communities in the preservation and exploitation of natural resources and biological diversity and in the protection, promotion and conservation of the quality of the environment for usual and consistent survival in the environment which is not hazardous to his health and sanitary condition, welfare or quality of life, shall be protected appropriately.

Any project or activity which may seriously affect the quality of the environment, natural resources and biological diversity shall not be permitted, unless its impacts on the quality of the environment and on health of the people in the communities have been studied and evaluated and consultation with the public and interested parties have been organised, and opinions of an independent organisation, consisting of representatives from private environmental and health organisations and from higher education institutions providing studies in the field of environment, natural resources or health, have been obtained prior to the operation of such project or activity.

The right of a community to sue a government agency, State agency, State enterprise, local government organisation or other State authority which is a juristic person to perform the duties under this section shall be protected.



Therefore, under Section 67, it is clear that three points have to be finished before implementing any project or activity that might seriously affect the community:

1. An assessment of the impacts on health and the environment.
2. A process of hearing of the opinions of local people and stakeholders.
3. An appreciation of the opinions of Independent Organization on Environment and Health.

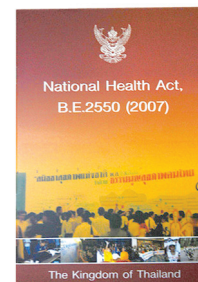
### Progress in developing HIA according to the Constitution B.E 2550

In developing HIA under Section 67 of the 2007 Constitution, works have been done with agencies in the Ministry of Natural Resources and Environment - such as the Office of Natural Resources and Environmental Policy and Planning, and the Department of Environmental Quality Promotion - and those in the Public Health Ministry - such as Department of Health and Disease Control Department. In summary, these works include:

Substance/driving force	Progress of implementation	Agencies responsible
Define projects and activities that may seriously affect communities	- Drafts have been drawn up on the types and sizes of projects or activities that may seriously affect communities. Initially there are 19 types which are in the process of being presented for approval to the National Environmental Committee for consideration	Office of Natural Resources and Environmental Policy and Planning
Assessment of impacts on the environment and health	- A general guideline has been drawn up for assessing social and health impacts, and included into projects that have to undergo EIA. - A draft guideline has been drawn up for Strategic Environmental Assessment (SEA) and is in the process of being presented for approval to the National Environmental Committee.	Office of Natural Resources and Environmental Policy Planning
	- A guideline for HIA in the EIA has been drawn. It delves into details of health impacts more clearly. It also stipulates the method for assessing risk in terms of quality and procedure while assessing health impacts. - A specific guideline for assessing health impacts from gold mine project in EIA has been drawn.	Disease Control Department
Setting up Independent Organisation on Environment and Health.	A process has been set for drafting the Act on Independent Organisation on Environment and Health which has a duty to give view on projects under Section 67.	Department of Environmental Quality Promotion.

## 4.2 Health Impact Assessment in the National Health Act B.E 2550

March 3<sup>rd</sup>, 2007 was a very important date for Thai people and those engaged in the health sector because that was when His Majesty the King endorsed the promulgation of National Health Act. This is one of a few laws that gave ordinary people a chance of participating in the drafting process. The Act contains three sections related to the rights and HIA:



**Section 5:** A person shall enjoy the right to live in the healthy environment and environmental conditions.

A person shall have the duties in cooperation with State agency in generating the environment and environmental conditions under paragraph one.

**Section 10:** In the case where there exists an incident affecting health of the public, a State agency having information related to such incident shall expeditiously provide and disclose such information and the protection thereof to the public.

The disclosure under paragraph one shall not be done in such a manner as to infringe personal right of any specific person

**Section 11:** An individual or a group of people has the right to request for an assessment and participating in the assessment of health impact resulting from a public policy.

An individual or a group of people shall have the right to acquire information, explanation and underlying reasons from state agency prior to a permission or performance of a programme or activity which may affect his or her health or the health of a community, and shall have the right to express his or her opinion on such matter.

**Section 25 (5):** to prescribe rules and procedure on monitoring and evaluation in respect of national health system and the impact on health resulting from public policies, both in the level of policy making and implementation.

In addition, Section 3 of the National Health Act defines “health” as the state of human being which is perfect in physical, mental, spiritual and social aspects, all of which are holistic in balance.

Therefore health impact assessment under the National Health Act emphasises comprehensive impacts on health and encourages a learning process in society. It gives ordinary people opportunities to take part in the assessment of health impacts, which is crucial to the development of public health policies.

Since this law was enforced, two grass roots groups have applied to use their rights under Section 11:

1. The Eastern Region People’s Network Group, whose members have been adversely affected by the Map Ta Phut industrial estate in Rayong Province.
2. The Group for the Conservation of Mae Rampueng, whose members have moved against the setting up of the Sahaviriya Iron Smelter in the forest of Pa Phru, in Tambon Mae Rampueng, Bang Saphan District of Prachuab Khiri Khan Province.



## On the path of thorns and flowers and seven years of waiting for the National Health Act

2000	Establish the Health System Reform Office and the National Health Reform Committee to draft the National Health Act
3 May 2000	Seminar on “Sparking health reform, a desirable health system for Thais” and six other discussions in six regions
31 July 2000	The government declares progress in health reform, promoting the thinking “Build before Cure”
Jan 2001	Guidelines for health system reform drawn up
June-Aug 2001	Forums for hearing public opinion
Sept 2001	Summary of the outcome and points of views on the path to reform the health system at the First National Health Assembly and drafting the National Health Act
2001-2002	Brainstorming sessions to compile opinions on the Draft National Health Act
8-9 Aug 2002	Draft National Health Act is presented to National Health Assembly, and submitted to the Prime Minister for consideration in Parliament
June 2003	Arrange the National Health Assembly as if the National Health Act has been promulgated, although there has been no advance in the process of considering the law
Nov 2004	123,416 signatures are submitted to the Parliament President to push for consideration of the Draft National Health Act
Dec 14, 2005	House of Representatives considers Draft National Health Act
March 19, 2007	National Health Act is formally promulgated

### Progress in developing the HIA system and mechanism according to the National Health Act B.E 2550

At present, there are at least three laws related to HIA – Section 67 of the Constitution, Sections 10,11 and 25 (5) of the National Health Act, and the Act for the Promotion and Conservation of Environment Quality B.E 2535 (1992). To ensure that HIA's are systematic and that compliance with laws is harmonious, the National Health Commission Office, as the secretariat of the National Health Commission, has set up a working group to draft a system, mechanism, criteria and methods for assessing health impacts from the public policies. Dr Wiput Phoolcharoen chairs the working group. Initially the working group has reviewed documents and organised consultations with concerned individuals to lay down a framework of thinking on the system and mechanism for assessing health impacts in Thai society as follows:

1. **Principles:** Right-based approach according to the principles of human rights specified in the 2007 Constitution and the 2007 National Health Act and committed to the principles of good governance. Refrain from setting up a new organization for HIA. Instead, encourage existing structure and organizations to use HIA as a tool for conducting their own tasks more efficiency, and strengthening capacity of these organizations to support the implementation of the right-based approach specified by the law.
2. **Thai HIA system should consist of three modes of operation:**
  - 2.1 The integration of HIA into EIA which is a process that leads to decisions, approval and permission for proceeding with various types of project, with a supporting legal basis in Section 67 of the 2007 Constitution and the 1992 Environment Promotion and Conservation Act. There are two areas of works which are developing an EIA guideline that follow the health definition in the National Health Act. Develop and strengthen a group of HIA Readers to work with the Expert Committee in commenting draft EIA report with regard to HIA.

2.2 HIA for local communities should aim to support, strengthen, and push for HIA as a tool for developing Healthy Public Policy.

There are two ways of proceeding with this:

- The community themselves conducts the HIA for the consideration of a project or activity in the community; or to prepare data for participating in a public policy or development project that affects the community.
- A local administration organisation conducts the HIA for local policy or planning process; or HIA for preventing hazards to health according to the 1992 Public Health Act; or for use in making decisions in matters other than the Public Health Act – such as the projects or activities according to Section 67 of the Constitution, Section 11 of the National Health Act.

2.3 The use of HIA in the Health Assembly. Given that this assembly is part of the process for developing Healthy Public Policy with the participation of three main sectors of society – i.e. the grass roots/civil society, academics/professionals, and the bureaucracy/political sector. The National Health Act also mentioned about the Health Assembly in Section 40 - 45.

**3. There should be an HIA Commission under the National Health Committee**, with an HIA Core Team as co-ordinator, and an HIA Co-ordinating Unit as secretariat. The HIA Commission supports the work of HIA networks, the development of the system, criteria and methods for assessing health impacts on a continuous basis. It also supports the building of a knowledge base, the management of knowledge, the development of potentials and the HIA data system. Moreover, it encourages the use of HIA as a tool in the development of Healthy Public Policy – through the National Health Assembly and other channels. Furthermore, it advocates the implementation of Healthy Public Policy through various channels and co-ordinates work to development HIA appropriately.

However, the framework for developing the HIA, its system and mechanism remain in a conceptual stage. They are yet to receive views from various social sectors as it has been included on the agenda of the 2008 National Health Assembly due to take place on December 11<sup>th</sup> - 13<sup>th</sup> at the United Nations Conventional Hall in Bangkok.

If consensus is reached at the Assembly, the working group will turn the document into a proper draft for presentation to the National Health Commission for endorsement.

### The use of people's rights in assessing health under Section 67 and Section 11

Point	Section 67 (Constitution)	Section 11 (National Health Act)
<b>1. Application of HIA</b>	For project or activity that may have serious, adverse repercussions.	For public policy (more extensive than activity or project)
<b>2. People's Rights</b>	<ul style="list-style-type: none"> <li>- Can express views regarding activity or project as a stakeholder and as a citizen.</li> <li>- Community is entitled to sue government agency, state or state enterprise agency, local government agency or other juristic state agency in case of failure to carry out duty specified in Section 67.</li> </ul>	<ul style="list-style-type: none"> <li>- Entitled to ask for a health impact assessment from public policy.</li> <li>- Can take part in the process of health impact assessment.</li> <li>- Entitled to receive data, explanation and reason from state agency before permission is given for a project or activity, or before a project or activity is implemented that may affect the health of the individual or community.</li> </ul>
<b>3. Related organisations</b>	Independent health and environment organisations	Office of the National Health Commission

# 5 Health Impact Assessment in EIA

## Background

The system for assessing environmental impacts is a legal mechanism used to protect the environment and public health from the adverse impacts of various projects. However, Thailand's Environmental Impact Assessment (EIA) system has been criticised by many social sectors as incomplete, failing to cover important aspects and issues of impacts, and lacking in meaningful participation by the people in its study. Critics also have pointed to failure to enforce and efficiently monitor the mitigation measures. This led to the efforts of many parties to reform the EIA system in 2003 but still there has been slow progress on the matter to this day.

The 10th National Economic and Social Development Plan (2007- 2011) calls for the EIA to include HIA and social impact assessment. The objective is to help make the EIA more complete, its coverage comprehensive. Moreover the 2007 Constitution attaches importance to assessing health impacts, especially from the operation of projects or activities that may affect communities seriously. At the same time, the 2001-2011 Environment Quality Management Plan also gives priority to assessing health impacts.

For these reasons, concerned agencies in the fields of environment and health have developed and integrated HIA in the EIA so that the environment and the people's well-being is least adversely affected by projects or activities.

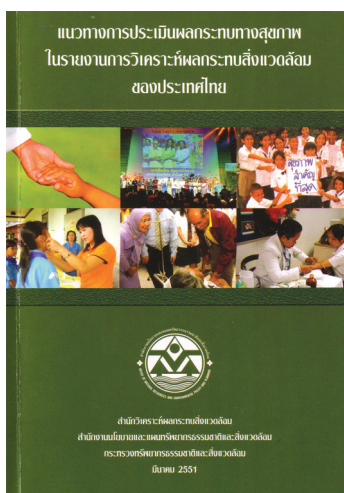
## Progress in developing HIA in the assessment of environmental impacts

### 1. Setting guidelines for assessing health impacts in EIA

Two agencies are working on developing HIA guidelines – Office of Natural Resources and Environment Policy and Planning, Ministry of Natural Resources and Environment, and the Department of Disease Control Department, Ministry of Public Health.

#### ● Office of Natural Resources and Environment Policy and Planning

In 2007, the Bureau of Environmental Impact Analysis, Office of Natural Resources and Environment Policy and Planning started to develop a guideline on HIA in EIA. They held consultations on developing the guideline, with concerned agencies from the Public Health Ministry, academics and environment consultants. They also compiled related data in Thailand and abroad. They also analyzed a case study of EIA in Thailand, especially on the



matter of assessing health impacts in EIA. This led to the drafting of guidelines for assessing social and health impacts, a task that has now been completed.

Moreover, the Office of Natural Resources and Environment Policy and Planning has stipulated that development projects having to undergo EIA must also undergo SIA and HIA. These looked into questions of quality of life, well-being, physical and mental health of the risk group, who might be adversely affected by the project directly or indirectly. The approach for assessing health impacts in EIA<sup>1</sup> may include:

### 1) Principles for assessing health impacts:

- 1.1 Identify health hazards of people living close to the project
- 1.2 Determine health risk to people according to 1.1
- 1.3 Focus on people's quality of life that might be affected by the project
- 1.4 Mitigation measures on health and life of people

### 2) Scoping of the study

Consider the following:

- 2.1 Size and type of the project
- 2.2 The past environmental impact on people's quality of life, future trends and chances of accumulated impact
- 2.3 Existing environment and health information
- 2.4 The surrounding environment of project's location
- 2.5 Possibility of health impact by considering the following
  - 2.5.1 Project threats, e.g. pollution threat, and psychological and social threat to people
  - 2.5.2 Threat of health impact, e.g. illness, stress, social way of life changed, disease, and accumulated health impact
  - 2.5.3 Possibility of changes of health management system in the area, e.g. will the project make a higher cost of health care? Will project change a public health service?

### 3) Assessing health impact in the health risks areas is to consider the following:

- 3.1 Usual case; project proceeded as usual
- 3.2 Unusual case; pollution treatment system is down, electricity or work equipment are out of order
- 3.3 Emergency case; fire, explosions, chemical leakage and spills due to broken pipelines and oil leakage.

### 4) Assessing health risks

Specify which group of people is affected, and how seriously. Set up a clear index for measuring health impacts.

### 5) Risk management and reduction of impacts

Consider the following:

- Can that risk be avoided or prevented?
- Is there a better option?
- The community's acceptance of risk.
- Can costs and benefits be negotiated?
- Social equality in terms of health.
- How to manage impacts after launching of project?
- Reduce the project's emission of pollutants.
- Take special care of the focused group's quality of life.
- See to the ensurance of a sustainable community by generating jobs and income for the focused group.

### 6) Monitoring of impacts on health.

- Does the project comply with conditions or measures for reducing impacts in the environmental impact assessment?
- Who monitors health, where, when and how?

<sup>1</sup> Sondhi Kotchawat, Office of the Natural Resources and Environmental Policy and Planning, Ministry of Natural Resources and Environment, 2008.



And because there are many sectors of project development in EIA report, it is proposed that specific HIA be conducted for each sector, such as industry, transportation, mining, residences and public services, and energy.

- **Department of Disease Control**

In the fiscal year B.E 2551 (2008), the Disease Control Department, through the Office of Occupational and Environmental Diseases, laid down two sets of guidelines for assessing health impacts in EIA. These included a set of guidelines that conformed with the one drawn up in March 2008 by the Office of Natural Resources and Environment Policy and Planning, Ministry of Natural Resources and Environment. These guidelines contain clearer details on health impacts, methods for assessing risks, and a procedure for assessing health impacts. Another specific guideline assesses health impacts in the EIA of gold mining project type.

Both sets of guidelines will be presented to users, including individuals and government agencies, for their suggestions which should lead to a more comprehensive approach.

The plan for 2009 is for the department to draw up guidelines for three types of projects in the sectors of communications, energy and industry. The approach is to consider in detail the activities of each type – including the location, geographical aspects, size, raw materials, work procedure, and the danger prevention system. Then the impacts on workers in the sector and people living in the vicinity will be considered. Subsequently, there will be an analysis of all the data through the process of health risk assessment in order to establish whether the project concerned has provided sufficient measures to contain and prevent risks. The data also can be used in considering the extent of impact, and whether an increase in preventive measures is desirable and in what specific area.

## 2 Definition and categorisation of projects and activities that may seriously affect the community

Section 67 of the 2007 Constitution states: “Any project or activity which may seriously affect to the community in quality of the environment, natural resources, and health shall not be permitted, unless...”

However, it is not yet clear which projects or activities seriously affect the community, and to what extent under Section 67. The Office of Natural Resources and Environment Policy and Planning, as the agency responsible for EIA, therefore has drawn up a draft of the categories and sizes of projects or activities that may have adverse impacts. Initially, 19 categories have been identified and the draft is being presented to the National Environment Commission for consideration.

## 3 Setting up an Independent Organization on the Environment and Health

Besides requiring HIA and EIA as well as a hearing of stakeholders before projects are launched, Section 67 also calls for views from an Independent Organization on Environment and Health. This independent agency comprises representatives from concerned private organisations and higher education institutions.

The Act for the establishment of the Independent Organization has been drafted through the coordination and support by the Environmental Quality Promotion Department, Ministry of Natural Resources and Environment. The Draft Act currently is being tabled to the Government. At the same time, the environmental networks in Thailand has collected 10,000 signatures, as required by the Constitution, to petition for the Draft Act.

#### 4 Setting up a commission of public health experts

Amid a higher profile for health impacts, including the 2008 Constitution, and the 2008 National Health Act. But the health experts are not included in the expert panel on approving EIA. The Office of Natural Resources and Environment Policy and Planning therefore has cooperated with the Public Health Ministry to nominate representatives to serve as health experts on all 11 committees so that there is comprehensive consideration of EIA, with more coverage of the health aspect.

Apart from such effort in developing and incorporating health impact assessment in the EIA report, the Health Department of Public Health Ministry, among other state agencies, has tried to develop HIA in EIA in other approaches. For example, it conducted a research and development of HIA in projects required to do EIA report. (i.e. Khwae Noi Dam project, Pitsanulok Province), developed a HIA database on health impacts, such as projects of dam construction, mining, and power plants. Capacity building and networking are also important to enhance the learning and understanding of principals, approaches and processes of assessing health impact in the EIA report system.

# 6 Health Impact Assessment for Healthy Public Policy

Assessing health impacts is one of several tools vital to the development of public health policies. The intention of health system reform is to use HIA as part of the process of communal learning in society. The communal process is designed for all sides to take part in considering the health impacts that are anticipated in future as well as those that already have come to a certain group due to the implementation of a development policy or activity. The objective is to support the selection of the best option to enhance and protect everyone's health in society.

The 6th World Health Congress in Thailand issued a Bangkok Charter which stipulated that all state agencies were duty-bound to promote health. The charter made clear that health considerations must be factored in to any determination of policies or planning by using HIA as a tool. Moreover, Thailand's 10<sup>th</sup> National Economic and Social Development Plan has created a mechanism and process for public policy-making that is conducive to health, in tandem with HIA of policies and planning.

However, the determination of public health policies requires several aspects of knowledge and understanding. Besides HIA, it is crucial to have the wherewithal to analyse the policy-making process, the capacity for alternative development at the policy level, and the capacity for organising the discussion and declaration of policies.

Previously, agencies and organisations have proceeded in various ways towards assessing health for the determination of public health policies. In summary, they include:

- Developing a conceptual framework and approach for analysing the process of forming public policies that will help in monitoring of respective branches at each step; in searching policy opportunities and understanding the different policy meanings and proposals. Health research institutes did this work under HPP-HIA in conjunction with the Healthy Public Policy Foundation. They produced documents, approaches and perspectives for analysing the policy-making process. They also tried analysing some policy branches, such as energy and agricultural policies.
- Adapting HIA in analysing policy options conducive to health in the HIA of the Power Development Plan. This involved comparison of impacts stemming from state PDP and PDP that emphasised use of rotating energy and other alternative energy sources which had been proposed

at various academic forums. This included advocacy of the policy process, for example by holding a joint press conference with Green Peace during the meeting of ASEAN's energy ministers.

- Completion of a draft for conducting a strategic environmental assessment (SEA) by the Office of Natural Resources and Environmental Policy and Planning. The draft currently is being presented to the National Environmental Commission for consideration. After approval by the commission, the draft will be sent up to the Cabinet for stipulation as policy for development agencies to follow in practice. The approach taken was to assess the potential or level of local infrastructure able to withstand the policies in various aspects, including those concerning health and social matters.
- Linking the health perspective found in HIA to assessments in other areas, for instance that of social equality as in the case of adapting HIA to promote the well-being of disabled people.
- Adaptation of HIA in the Health Assembly as an assembly included in the process of developing public health policies. Three sectors take part in this: grass roots/civil society; academics/ professionals; bureaucracy/politicians. The use of HIA in the Health Congress therefore forms part of HIA, with provisions for duties and powers specified by the National Health Act. Examples of HIA for HPP include HIA in the Map Ta Phut case, and HIA in the case of Suvarnabhumi Airport.

In addition, HIA has been adapted for advocacy of public health policies in various respects, for example in the energy policies, and in appealing for the use of people's rights under Section 67 of the Constitution and Section 11 of the National Health Act. Examples include calls for HIA in the cases of Map Ta Phut and the Sahaviriya Steel Plant.

# 7 Health Impact Assessment at Community Level

## 7.1 Health Impact Assessment for local administrative organisations

Since the decentralisation of power to communities, local administrative organisations have played an important role in developing public policies at the grass roots. This is because they have direct powers, duties and responsibilities to look after the well-being of local people and develop the area they inhabit. By law, a local administrative organisation is empowered to issue local regulations and to adapt laws for enforcement. Moreover, as a small administrative unit that is closest to the people, the organisation has the potential to initiate a process of seeking knowledge, co-operation and an approach for optimising the communal use of resources.

Health impact assessment therefore is a tool for the local administrative organisation to apply in building a communal learning process on the quality of health, in presenting an option to protect and promote health, in advancing public health policies, and in encouraging local people to use their rights.

Local administrative organisations in several areas have conducted HIA. These include, for example, the organisation at Bang Rakam sub-district, Nakhon Pathom Province which conducted HIA on the management of canals and ditches, and those at Thung Thong in Kampaengpetch Province, Bo Ngoen in PathumThani which assessed the reduction of chemical pesticides. In addition, the Local Administration Promotion Department has interested to apply HIA for local communities. This includes the work of the Disease Control Department on HIV/AIDS.

There are three channels for local administrative organisations in applying HIA in local areas.

1. Application of HIA for developing local policy and plan, e.g. promoting occupations, reducing use of chemical pesticides, managing waste and preventing diseases.
2. Application of HIA for preventing health hazards under the 1991 Public Health Act. HIA can be applied in the process and stipulation of activities that are hazardous to health. It can also be applied in setting criteria and conditions for engaging in activities, in considering licenses, and irritants.
3. Application of HIA for support decisions of local authorities on other matters, such as Sections 67 and 287 of the Constitution or Section 11 of the National Health Act.

## 7.2 Health Impact Assessment by Local Communities

When local communities conduct HIA, the aim may be to support their own consideration of projects or activities, or to prepare data for participating in the development of public policies or in development projects that may affect the communities. Examples of communities that had applied HIA for promoting healthy public policy in their communities such as water management in Prachin Buri Province, management of the Tha Chin River and the digging of a short-cut canal in the Tha Chin area in Nakhon Pathom.

Besides applying HIA by local communities themselves, The National Health Commission Office also has implemented a pilot project on Community HIA – or CHIA – as a tool for empowering local communities in the public policy process.

### Community Health Impact Assessment (CHIA):

Villagers have been conducting HIA for a long time. The process is linked to customs, traditions, and the ways of life and beliefs of local communities. Take for examples, the beliefs in ancestral spirits, the spirit of the river, and the North East people’s belief in khalam - or the inauspiciousness of doing certain things. Moreover, members of a community for some time have tended to engage in consultations or reached conclusions before starting any activity.

Hence, when Thailand began developing in an age that applies more complicated technology, resulting in more extensive repercussions, the EIA replaced local communities’ consulting process, and the traditional customs and beliefs became sidelined. It was thought that these were not the result of academic research and could not be scientifically proved. The spiritual aspects of the communities’ beliefs in particular were considered in these lights.

The CHIA was born of the National Health Commission’s attempt to revive local communities’ traditional HIA processes and integrate them into the national HIA. The objective is to develop the communities’ thinking and approach to health assessment, and the communities’ potential to apply respective assessments as tools for creating healthy environments. The Commission also expects the communities to use the outcomes of assessments in the prevention and solution of problems deriving from public policies.

The target groups are communities already adversely affected by development projects, and those expected to be affected in future because they stand in the vicinity of large projects. These are communities deemed interested in learning the know-how to assess health impacts in order to adapt them for their own uses.

#### Plan for conducting CHIA project

Time	Activity
7-9 April, 2008	First workshop at Cholapruek Resort, Nakhon Nayok Province to improve understanding about health perspective, determinants of health, public policy and to set objectives for developing CHIA.
22-25 July, 2008	Second workshop at Ban Thip Suan Thong, Samut Songkhram Province in order to review work and support additional related data. This includes learning about cultural ecology, policy options, gathering of basic data, and lessons learnt from Ban Lom Thuan , Praek Nam Daeng, Samut Songkhram Province, and Ban Ba Kham, Khon Kaen Province.
August-December, 2008	Accumulating specific knowledge for field work
December, 2008	Exchanging knowledge and information with other networks in 2008 HIA Forum and 2008 National Health Assembly
February, 2009	Annual Review
April, 2009	Developing lessons learned
August, 2009	Public forum on Thailand’s CHIA concepts and approach

# 8

## Health Impact Assessment in Health Assembly

Health assembly is a social mechanism for knowledge and idea sharing leading to the development of a healthy public policy. It has continuously been organized since 2001 in area-based, issue-based, and national levels. HIA has been applied to support several health assembly processes, for example, a case of Tha Chin River, Nakhon Pathom province; a case of potash mining, Udon Thani province; a case of agricultural chemical use problems; and in HIA concurrent sessions in national health assemblies; etc.

Having been enacted since March 2007, the National Health Act, B.E.2550 defines a health assembly as a process in which the public and related State agencies exchange their knowledge and cordially learn from each other through an organized systematic forum with public participation, leading to suggestion of healthy public policy or public healthiness. It also provides that NHC shall organize a national health assembly at least once a year, and in the case where the national health assembly proposes a suggestion for a State agency to implement or to supplement the consideration in making public policy on health, such proposal shall be submitted to NHC for consideration of accomplishment in case it deems appropriate.

A case of problems related to industrial development in Mab Ta Phut area, Rayong province was the first to demand the exercise of rights according to the Act. As a result, an issue-based health assembly was organized in parallel with a health impact assessment through a series of analyses and brainstorming on the environmental, resources, economic, and social impacts and development directions of Rayong. This led to the first health assembly on "Rayong Paradox".

Subsequently, various development alternatives of Rayong were analyzed in the second assembly to address existing development problems. An HIA which analytically compared between the possible impacts of government's development plan and those of other development alternatives was conducted, and several recommendations and further actions were presented and discussed during the third assembly. Finally, a health assembly had been held to discuss policy recommendations before they were presented to the National Health Commission (NHC). The Commission approved all the recommendations and submitted them to the ministerial cabinet for further consideration. A working group has been additionally set up to follow up and advance these recommendations

Furthermore, a case of iron smelting plant in Bang Sapaan district, Prachuab Kirikhan province is observing several HIAs. Likewise, a health assembly process is being applied in a case of Suvarnabhumi Airport to reflect on social impacts, particularly those on the traditional way of life of the surrounding communities, which are likely to turn worse due to the enlargement of the airport and the construction of a new runway.

With regard to the capacity building of health assembly core group, the Health Assembly Development Initiative (HADI) supported by National Health Commission Office (NHCO) has organized a series of training workshops on HIA and Health Assembly for core groups in 16 areas, which are the main target in 2008. In these workshops, HIA is considered a tool for a health assembly to analyze and assess available options for the development of healthy public policy. Some of these groups already used HIA while some have planned to use it in their respective health assembly process which include, among others, Nakhon Pathom, Prachinburi, Trat, Loei, and Ubon Ratchathanee.

In terms of HIA system development according to the National Health Act, NHC is designated to specify criteria and methods of HIA. Therefore, NHCO has set up a working group and run several processes to analyze, brainstorm, discuss, and develop a draft of HIA criteria and methods, which will be included in an agenda for consideration during the national health assembly in December 2008. The outcome will be presented to NHC later on.



# 9 Health Impact Assessment in Higher Education Institutes

The roles of higher education institutes in HIA development has begun since Health Systems Research Institute established HPP-HIA Program, which in 2002 expanded its operational network to the regions. Its northern network is based in Chiang Mai University; the northeastern is in Khon Kaen University; the central is in Mahidol University; and the southern is in Prince Songkla University.

As the expected roles of higher education institutes are generally on academic dimension, for example, curriculum development, researches for knowledge enhancement, and academic services, higher education institutes are very important allies of Thailand's HIA development network, particularly in regard to their roles in developing analytical frameworks and building human resource capacity for the promotion of healthy public policy and health impact assessment.

All member institutes firstly developed appropriate analytical frameworks by coordinating with other network members who work on different policy issues to promote research and development on HIA and to seek collective approach to HIA through academic forum organization. Some researches have helped enhance the knowledge on health impacts from project development, including the case of Mab Ta Phut Industrial Estate in Rayong province, the case of high-rise buildings in Chiang Mai province, the case of chemical use for agriculture in Northeastern region and in Lamphun province, and the case of Yala Municipality Park.

Subsequently, there was an idea to create new generations of academics and researchers with adequate capacity to mobilize impact assessment issues in higher education institutes. Chiang Mai University was the first to initiate capacity building project for healthy public policy researchers in graduate level. This has been carried out since 2003 through the facilitation of learning process among academic advisors and graduate students, the preparation for proposal development of thesis and independent study. Another activity is the development of HIA curriculum as a selective course for the graduate program in Public Health.

The significant contribution of encouraging students to apply HIA in their independent studies was changing of public policy at local community. The case study of HIA of the quarry mining and the grinding plant in Mae Hong Son province, northern Thailand was seen as a success case of the HIA to support the public decision making process in order to protect the health of

the local people. Finally the mine has been stopped until present. Currently, graduate students in Public Health Sciences and Nursing at Chiang Mai University show interest in adapting HIA in their independent studies.

In addition, several other higher education institutes offer courses related to HIA, some as compulsory others as optional subjects. At the Udonthani Rajabhat University for example, HIA is a compulsory subject for students pursuing a degree in public health sciences and an optional subject for students pursuing other fields who are interested. At Chiang Mai University, HIA is an optional subject in the Masters' Degree Course in Public Health. Other higher education institutes offer courses in HIA in fields related to public health and the environment. These include Khon Kaen University, Prince of Songkhla University, Mahidol University, Maharakham University, Naresuan University and Srinakarinwirot University.

The details of these courses include:

- Prince of Songkhla University which runs courses on health impact assessment in studies related to health promotion and environment management for students in the faculties of Medicine, Nursing, and in the Environmental Management group.
- Khon Kaen University offers courses and runs research on health impact assessment in studies related to health promotion and environmental management in the faculties of Medicine, Pharmaceutical Science, and Public Health Science.
- Chiang Mai University which runs a course on health impact assessment as an optional subject for graduate students in Public Health Science.
- Udonthani Rajabhat University offers a course on HIA in Public Health Policy that is compulsory for students pursuing a degree in this, and optional for other interested students.
- Mahidol University offers health impact assessment as part of a course on Public Health Policy for graduate students in Nursing.
- Maharakham University runs courses and conducts research on HIA for students in the faculties of Environment and Natural Resources Sciences, and of Pharmaceutical Science.
- Naresuan University offers courses and conducts research on HIA for students in the Public Health Faculty.
- Srinakarinwirot University offers courses and conducts research on HIA and the process of policy making in health for students in the faculty of Nursing Science.
- Ubon Ratchanani University runs courses and conducts research on HIA for students in the faculty of Pharmaceutical Science.
- Chalermphrakiat University runs courses and conducts research on HIA for students in the faculty of Public Health Science.

# 10 Development of Regional Cooperation Network on Health Impact Assessment

## Development of HIA Co-operation Network between Thailand and Southeast Asian Countries

At present, the health impact goes beyond the borders in the form of international policies and agreements as well as in mega-projects, thus enabling the formation of transboundary healthy public policy and health impact assessment.

Therefore, in developing HIA system in Thailand so as to cope with the transboundary health impact, it is necessary to cooperate and establish a network of concerned agencies of neighboring countries. The network should develop the HIA system and healthy public policy in Southeast Asian region, for example, enable policy-advocacy practitioners from various sectors to participate in international forums or developing case studies of health impact assessment on transboundary issues.

As for the HIA development in Thailand, there has been a continuous collaboration with foreign countries since the beginning. The HIA International Workshops were organised three times, the first two workshops held in 2001 and 2003 respectively. The workshops were aimed at promoting the joint learning between Thai participants and those from developed countries who had HIA experiences. In the third workshop in 2005, there was an initiative of exchanging knowledge between Thais and counterparts from Laos, Vietnam, Cambodia and Malaysia, and a close cooperation with the University of New South Wales, Australia. It was sponsored by Thailand-Global Linkages Initiative Program (T-GLIP) under the Thai Health Promotion Foundation.

In the third workshop, participants exchanged views on critical points, such as urban and industrial development, use of pesticide in the agricultural sector, the Mekong River management, as well as recommendations from many countries on regional cooperation for HIA development.

## Continuous Learning Process

In 2006, Thailand hosted the HIA Interactive Training Course whereby participants from those four neighboring countries and Australia also attended with Thai participants. The Course provided the opportunity to exchange knowledge and experiences on the holistic health approach, analysis of policy alternatives and public policy process, evidence, and public participation in HIA process.

Furthermore, there were networking activities, such as visiting the National Institute of Occupational and Environmental Health in Vietnam, for the purpose of exchange information on HIA and strengthening cooperations on HIA development. In addition, HIA researcher from HPPF was invited to present and share experiences on HIA and public policy process on air pollution and industrial development in a regional workshop in Malaysia.

In November 2007, relevant Australian agencies co-hosted the HIA 2007 Southeast Asia and Oceania Regional Conference on HIA in Sydney. Thai representatives attending the conference included those from National Health Commission Office, Department of Health, and Healthy Public Policy Foundation. There were various presentations and papers from Thailand, for instances, HIA in Law, HIA on industrial development, HIA on healthy agriculture, and Experiences on Regional Cooperation. This had leading to the decision of Thai HIA organizations to host the HIA 2008 Asia and Pacific Regional Conference on HIA in December 2008 in Chiang Mai.

# 11 A Summary of Recent Development of Health Impact Assessment in Thailand

The development of HIA during the last two years (2007 – 2008) was a critical step towards HIA institutionalization in Thailand. The provision concerning HIA is stated in two laws namely, the Constitution of the Royal Kingdom of Thailand B.E.2550 and the National Health Act B.E.2550, which clearly recognize the rights to HIA. Moreover, any project or activity which may causes severe impacts on a community is required to do HIA before it can proceed.

In addition, the National Health Act designates NHC as a decision making mechanism for determining the country's healthy public policy and direction, and NHCO as a unit for developing HIA mechanisms and approaches according to the Act. Similarly, the Constitution prescribes the establishment of an independent environmental and health organization to provide opinions on any project which may seriously affect a community.

Apart from these, the 10th National Economic and Social Development Plan (2007-2011) is also aware of the importance of HIA and prescribes the creation of system, mechanism, and indicator of environmental health impacts and the development of social and health impact assessment system in environmental impact assessment (EIA) report.

Therefore, a number of relevant organizations from various sectors have been jointly developing HIA in EIA. Of this process, the Office of Natural Resources and Environmental Policy and Planning (ONEP) is responsible for the general guideline of HIA in EIA, which assigns HIA to an EIA-required project. Meanwhile, the Department of Disease Control is also developing a guideline for HIA in EIA with a focus on Health Risk Assessment and a guideline of HIA in EIA for gold mining project (Specific Guideline). Additionally, the Ministry of Public Health through the Department of Health plays a role in recruiting representatives from the Ministry of Public Health to be public health expert committee.

Furthermore, ONEP has already drafted the types and sizes of projects and activities which may seriously affect a community, while the Department of Environmental Quality Promotion and its academic and civil society networks have drafted the Independent Environmental Organization Bill which would function in providing opinions on a project according to Section 67 in the Constitution.

Regarding HIA for the development of healthy public policy, many organizations have been playing active roles in varying approaches. For instance, Healthy

Public Policy and Health Impact Assessment (HPP-HIA) Program, in collaboration with Healthy Public Policy Foundation, have developed conceptual framework and guideline for the analysis of public policy process in energy and agriculture sectors. Energy network has applied HIA in analyzing policy alternatives for an alternative electricity generation capacity development plan. ONEP has drafted a guideline of strategic environmental assessment (SEA). Aside from these, HIA has been applied in health assembly processes such as in the cases of impacts of industrial development in Mab Ta Phut, Rayong and impacts of iron smelting plant in Bang Sapaan, Prachuab Kirikhan. Recently, HIA has also been introduced to new issues e.g. an equity-focused HIA for the health promotion of the disabled.

At community and local levels, today a lot of local administrative organizations are interested in HIA application for local public policy development. This can be practically applied through three channels: (1) local administrative organizations' policy and planning; (2) risk prevention according to the Public Health Act B.E.2535; (3) local decision making on a variety of issues. Some examples of HIA applications by local administrative organizations are Bang Rakam Sub-district Administrative Organization (SAO)'s watercourse management and Bo Ngoen SAO's management of chemical pesticide use.

Moreover, a number of HIAs have been conducted by communities themselves e.g. HIA by Bang Lane community to support their decision making regarding a power plant project in the area; HIA for the review of Tha Chin River Basin development, Nakhon Pathom province; and HIA for Saraphee Canal management, Prachinburi province. Beyond these efforts, NHCO is developing a guideline for community HIA (CHIA) to be a tool for people empowerment in public policy process.

Despite a considerable progress of HIA development in various aspects, there are many future challenges of HIA development in Thailand, namely, system and mechanism development for the exerting of rights; capacity building of organizations working on HIA; new application arena both in terms of issue and area; teaching and learning development; expanding and strengthening of international networks.



# Part II

## Case studies of HIA



# 12 Case Study: Health Impact Assessment of Policy Alternatives for Future Rayong Development



## Status of the problem and the appeal for use of people's rights under the National Health Act

In the old days, Rayong was a province rich in resources deriving from agriculture, fishery, natural resources and traditional wisdom. Then during the late 1970's the government set the plan for developing the Eastern Seaboard – Phase 1 (1982-1994), Phase II (1995-2005) – that called for large-scale industrial development as the path for Rayong. This meant oil and natural gas refineries, petrochemical and steel plants, and large power plants.

Such large-scale industrial development brought several problems to local residents – air and water pollution, hazardous waste – so much so that Map Ta Phut Punwittaya School had to relocate. There were also chemical hazards, incidents of coastal erosion and problems stemming from migrant workers.

The social and economic changes that came to Rayong also could not be ignored although there was scant interest in them. A study on children and young people from 2004-2005 by Child Watch came up with critical findings:

- 802.71 minors per 100,000 people applied for drug rehabilitation, or the biggest proportion in the country;
- attempted suicides by people aged 19-25 ranked third in the country (254.71 per 100,000);
- delivery of babies by girls aged 10-14 ranked fourth in the country and first in the Eastern Region ( 340.57 per 100,000).



Moreover, the Child Watch report noted that Rayong Province ranked first in the country in terms of risks areas – or Karaoke bars, cocktail lounges, pubs, tea houses, snooker rooms, coffee shops, and short-time hotels (340.33 places per 100,000 people). These findings supported those of the 2007 Human Development Report compiled by the United Nations Development Programme which said Rayong ranked among the first in the country in terms of new cases of HIV/Aids and drug addiction.

The issue that has been discussed at various forums is the Gross Domestic Product of Rayong Province – amounting to almost 800,000 baht per person per year. Several residents of Rayong said this did not reflect the reality as the wealth was concentrated in a small group of people. Many households remained in debt and poor, they added.

That's why many people in Map Ta Phut and Rayong applied to use their rights under the 2007 National Health Act. This led to a specific health assembly that attached importance to assessing the social, economic and health impacts on Rayong and the options for developing the province.

## Health Assembly and Health Impact Assessment

The health assembly process specific to Rayong Province consisted of research and assessment of impacts on health. In the process, there were field surveys of focus groups, forums with focus groups, public opinion surveys, and use of various mass media and channels. The objective was to hold three health assemblies on specific issues, with consultants expressing opinions and suggestions at each stage. The process found:

- Health for the people of Rayong was linked to the environment, natural resources, social and economic factors. The development path adopted up to the present has seriously affected adversely all four factors important to health, including

Health Determinants of Rayong People	Problems of impacts
Environmental factor	Industrial pollution, chemical hazards, illness and health risks derived from pollution
Resources factor	Competition of water utilization, sea landfill, coastal erosion, and loss of fishery resources
Social factor	Problems stemming from migrant workers, lack of safety in life and properties, sexual contagious disease, child and youth problems, and conflicts stemming from an expansion of large-scale industries into communities.
Economic factor	Risks of dependency on imported industries, slow economic growth of agriculture and fishery sectors, uneven redistribution of income, and problem of tax system and low ranking of social investment.

- Public opinion Survey was conducted throughout Rayong province, and found that people wanted that path of future's development be 1) free from industrial pollution 2) developing agriculture according to sufficiency economy context 3) cultivating social relationship 4) developing eco-tourism based on natural resources preservation and 5) adopting local wisdoms for the future's development. All of this was regarded as options for development according to Rayong residents' visions. This also indicates that Rayong is still rich of social capitals to turn into alternative developments that fit with local people's visions and bring positive health impacts.
- As for health impact assessment of Rayong's alternative development in the future, it is found that the more state-centric development is continued, the more health negative impact would be. This is because the continuously released pollutions causes risks of hazards, tensions in utilizing resources, persistent social problems, and widening gap between the rich and the poor. Although the government has taken some actions in protecting natural resources and environments, it is partially effective. There also have been little efforts by the government on social and economic fronts, so serious effects are expected to come.

Rather, the option for developing Rayong laid down by Rayong residents are believed to be more positive towards those four health factors, better than the government's development approach. This is because by mitigating industrial pollution, stopping the expansion of petrochemical and power plants as well as preserving natural resources, there will be less pressure on exploiting natural resources and environments. Cultivating social relationship will strengthen the society, and developing agriculture in sufficiency economy context is expected to help minimize the social and economic gap.

Therefore taking health perspective into consideration, adopting the option of development envisioned by Rayong people should bring positive outcome on health more than the current approach taken by the government.

# 13 Case Study: HIA of Suvarnabhumi Airport and 39 Process of Health Assembly Resolutions

## Background of the Problems

In modern countries, there have been lessons learned from the development of big international airports, whereby people suffer from illness and filed lawsuits subsequently. The airport authorities therefore have to compensate a huge amount of money for damages, cost of people's relocation as well as constructing new airports in remote areas far from communities. But the phenomenon in Thailand indicates that there is still a lack of understanding among the Thai government and the public, including a lack of mechanisms and effective measures in tackling the problems and minimize the impacts.

The Thai government has initiated the second international airport project in Nong Ngu Hao farm, Bang Plee District of Samutprakarn Province since 1961. However, in developing the Suvarnabhumi Airport, the government failed to enforce the City Planning Law in order to control and manage the land use in areas where there was a noise pollution. In addition, there was no warning system on the impact of airport's operation, no relocation of people from places where there was a serious noise pollution.

The World Health Organization (WHO) reports that noise pollution exposure is a critical factor for health deterioration, sleeping disturbing, and loss of children and adults' productivity. There are also researches related to other health risk factors, for example, noise pollution exposure can partially contribute to unfavorable social and health conditions as a result of use of Paracetamol, sleeping pills, drinking alcohol, having aggressive behavior, committing crimes and violence. It also causes problems of inadequate rest, poverty, family problem, unemployment problem, problem of inefficient work, and mental problem.

The operation of the Suvarnabhumi Airport without resolving the noise pollution problems have caused people living nearby suffer from feeling tension and stress. Taking other pollutions into account, airplane fuel fume spreading over houses and communities adjacent to the airport also becomes the causes of respiratory syndrome and allergy to people who used to live peacefully before the airport was opened. Additionally, education institutes, government agencies, religion institutes and private companies that are located nearby have also been affected by the airport's operation.

Due to the serious health impact, in combination of the incessant noise through days and nights and slow progress in tackling the mentioned problems, people have gradually decided to stand up collectively to protest and demand for justice in resolving the problems. The network has expanded from 16 to 32 communities in making demands later on.

### Environmental impact assessment and pollution problem remedies after the opening of the Suvarnabhumi Airport.

The New Bangkok International Airport Co., Ltd (NBIA) hired a private company to conduct the “The completion version of the Environmental Impact Assessment of the Suvarnabhumi Airport project”; under which EIA was conducted while the airport construction was going on. The National Environment Board conditionally endorsed the report on 10th March 2005.

As for the noise pollution issue in the EIA report, they created a noise contour map by using the Noise Exposure Forecast system, or NEF, in order to forecast the noise level from airline activities. The EIA report requires that NBIA purchase both lands and buildings that were constructed before the year 2001 and located in any areas with exceeding 40 NEF level. In cases where owners of those lands and buildings did not want to make them on sale, NBIA was required to support and improve or install noise effect reduction equipment, and this should have been done five months prior to the operation of the airport. But the Thai Government and the Airport of Thailand Public Co.,Ltd (AOT), that had already made an acquisition of NBIA at that time, were ignorant to the requirement of EIA measurements. The Suvarnabhumi Airport was opened on September 28<sup>th</sup>, 2003 under the policy of making Thailand as an air-transportation hub in Southeast Asia.



Later, AOT requested the Pollution Control Department under the Ministry of Natural Resources and Environment to measure the noise level in the nearby communities, and developed a new noise contour map to be used as a base for negotiations between AOT and adversely affected people later on. Nevertheless, there was no concrete outcome partly because AOT frequently changed noise contour maps and exerted efforts to minimize the affected areas. Such negative impact caused the communities living near the airport to suffer alone, become disunited, and did not receive any sympathy from the society. Concerned agencies also ignored to outreach to them and seriously resolve the problems.

At present, the Thai Government and AOT have agreed to construct the airport’s 3<sup>rd</sup> runway as fast as possible without implementation of the community-based health impact assessment. The nearby communities affected by the airport construction continue to protest against the project.

### Health Assembly of Keha Nakorn 2 and Lang Suan communities, Ladkrabang District

The suffering of residents living nearby the Suvarnabhumi Airport led to the standing up of Keha Nakorn 2 and Lang Suan communities to collectively sought resolutions through the so-called “Health Assembly Project for the Enhancement of Public Health and Mitigation of Noise Pollutions in Keha Nakorn 2 and Lang Suan Communities”; which was set up in accordance to the National Health Act B.E. 2550.

The objective of the project was aimed to enhance public participation and to reduce any limitations in problem-solving process. This was done through the study of local community’s history, searching for existing capability of community, assessing initial health impact physically, mentally and socially, and





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opening for access to the health assembly for a joint learning among local residents and experts so as to make policy-based recommendations. It was publicly communicated throughout the process, and the recommendations were brought to the National Health Commission (NHC) for consideration and further propose to the government. It was expected that the process of making a sound policy on noise pollution remedy caused by the Suvarnabhumi Airport would lead to a serious and effective action taken against noise pollution problems derived from other airports nation-wide. It would also enhance strengthening, sympathy and collaboration in solving the overall health impact problems in the Thai society.

Although the process of health assembly has not been accomplished, resolutions have not yet been made, and the impacts appear to be more serious, it is important to be aware that, on grounds of civil rights and duty, all people are entitled to collectively fight against the problem with knowledge and wisdom.

# 14 Case Study: Health Impact Assessment and Healthy Public Policy for the Disable People

For the HIA implementation during 2001-2006 under the research and development program of healthy public policy and health impact assessment (called HPP-HIA Program), the Health System Research Institute (HSRI) began its work by studying and developing knowledge bases with particular focus on the negative health impact caused by many public policies. The platform was designed to drive the health impact assessment by means of building the social learning process in stead of laws enforcement.

During 2006-2008, having implemented the health impact assessment in the same approach, the Healthy Public Policy Foundation (HPPF) which is the same teamwork of HSRI expanded the HIA public scope to cover HIA analysis and draft report, and initial public review. The first project was the "Eastern Sea Board Development Project" which was undertaken after the civil society had exercise their rights in mid 2007 in accordance with the National Health Act enacted in the same year.

In 2008, HPPF participated in the Independent Living session of the "Meeting on the Synthesis of Lessons Learned and Next Steps" organised by the Health Promotion for People with Disability Program (HPPDP), on 20th June 2008. It was uncovered that practical problems encountered by disabled people were attributed by two factors; lack of self-confidence and a prejudice against the disabled people in the Thai society. This made the disabled have no opportunity to access to public services as equally as ordinary people.

At present, several groups of disabled people, for example, those in Chonburi, Nonthaburi and Nakorn Pathom provinces have applied the independent living concept. In implementing this by taking health impact assessment into consideration, it is initially found that the disabled people have better life skills, better self-confidence, are able to talk and share sorrow with friends, and live with a will. The disabled are also able to socialize and develop their leadership skills. The most important thing is the disabled and surrounding people become to accept and respect each other's value and dignity as a human-being.



Nevertheless, the poor public understanding and prejudice remain an obstacle to promoting public health of disabled people. As a result, working on the issue of people with disability needs to create a knowledge base at least in three areas as follows;

- 1) Developing a public health database of disabled people.
- 2) Developing a knowledge base on health equity and health impact assessment
- 3) Developing a healthy public policy for disabled people.

Thus, in 2009, HPPDP, HPPF, and Thammasart University's Faculty of Social Administration have laid down goals of collaborating and implementing a healthy public policy and health impact assessment for disabled people. The goals, under which HPPDP and disabled groups play a core working group, were to accomplish three areas as follows;

- 1) Developing a policy-based recommendation on the promotion of economic security and independent living for the disabled people, at national, provincial and community levels.
- 2) Developing a tool for public health and health impact assessment for disabled people, so as to promote a social equal treatment to everyone in the society, at both operational and provincial levels.
- 3) Developing system-based proposals on state welfares and community welfares.

As for the first year of implementation (2009), HPPF and HPPDP will review the development concept and relevant working experiences concerning with disabled people both in Thailand and abroad, especially Australia. They have also planned to collect information and develop a

public health database of disabled people in four provinces, including districts and sub-districts where pilot projects are located. This will proceed to data analysis taken from the survey in comparison with that from the National Statistics Bureau, formation of recommendation on health public policy for the disabled people, and further mobilizing through the National Health Assembly. In addition, they will also study and apply the Health Equity Focus concept while working with the disabled. Thammasart University will be in charge of studying the state and community welfare systems.



# 15 Case Study: Health Impact Assessment as a Learning Process of Organic Agricultural Practice in Bo Ngoen Sub-district, Prathumthani province

## Background and rationale of the case study

Thai farmers in the olden days earned their lives from self-sustaining agriculture. Later in 1961, however, the Thai government held a campaign for promoting modern agriculture following the green revolution approach. They turned to focus on monoculture, seed improvement, the use of machine instead of animal and human labor, and the use of chemical to increase the yield. But it was soon realized that such chemical-oriented practice brought about various impacts to farmers' health, the environment and ecosystem, and the whole Thai society.

Pathumthani province is located in central Thailand and adjacent to Bangkok, but most of the area is agriculture-based and the majority of its residents grow cash crops such as rice and vegetables. Pathumthani is one of the provinces with intensive modern cultivation, particularly with regard to commercialized rice farming. The province was among the first irrigated lands in the country and was the first to use motor tractors in farming. Having won the national awards in 1998 and 2000, it is a home of finest rice seeds and a location of the largest seed research center in Thailand today.

Bo Ngoen sub-district is only 14 kilometers away from the down town. At present, 90 per cent of its population is farmers, 70 per cent of which do intensive rice farming. Previously, it was a traditional farming community, where rice was seasonally grown only once a year. But after the introduction of chemical use in 1973, the community's agricultural practice has dramatically changed. Chemicals become another important factor of production for Bo Ngoen farmers. And as the community fully adopted a modern agricultural approach, the paddy fields that were once rich with aquatic animals and the folk's relaxing, simple way of life have all become a rare picture. Nowadays, the villagers have to buy fish and vegetables from a market. They cannot bathe in the canals and get ill due to their exposure to chemical. Moreover, almost all households in the community go indebted.

A health risk assessment of chemical pesticide use in 2007 shows blood test results of Bo Ngoen farmers, 25.81 per cent of which are found at a risky level while 3.76 per cent are severe. This will be a health threat and problem both in short and long run as there has been no effective solution to the problem until now.





Being concerned with this pressing issue, Regional Health Center 1, Ministry of Public Health, in collaboration with Healthy Public Policy Foundation and Bo Ngoen Sub-district Administrative Organization (SAO), organized a project on “Health Impact Assessment of the chemical pesticide use in rice fields” in Bo Ngoen sub-district, which was aimed at studying the health impacts from using chemical pesticides in the rice paddies and developing a format of HIA that focuses on learning process and the participation of community members in order to lead towards collective decision-making process for healthy agricultural policies. The research’s approach was participatory workshops which were held during April 2007 – September 2008.

### The application of HIA in building a learning process for an agricultural community

HIA was applied to creating a learning process for Bo Ngoen community. The activities were as follows:

- **Data survey on the environmental, health, and socio-economic aspects of the community** These include an overall situation of the community’s cultivation, agricultural chemical use and different dimensions of the impacts, and the farmers’ attitudes and knowledge on the use of agricultural chemicals.
- **Capacity strengthening and building a communal learning process** which consists of four workshops: 1) core group training on HIA and the impacts of chemical-oriented agriculture; 2) building an understanding on biological diversity and its implications for the farmers’ way of production; 3) risk assessment of agricultural chemicals and health impacts; 4) analysis of the interconnection between environmental, health, and socio-economic impacts of chemical use.
- **Field trips on a variety of alternative agricultural practices** that lead towards the reducing, refraining, and quitting of the use of chemicals to inspire Bo Ngoen farmers who are interested in changing their way of production to a more sustainable and safe practice. The sites include a farmers’ school in Chainat province and Bang Plama Organic Network in Suphanburi province.
- **Brainstorming to draft a community plan** to analyze and consider the current situation and lessons learnt from the past, and to brainstorm on future goal and direction of a desirable community development by employing the information gained through previous activities as an input.
- **Community assembly for community plan and public policy formulation** to present opinions, concerns, and suggestions, and to consider and review a draft of the community plan to bring about the participatory development of a thorough plan. Due to the participation of over 200 people, there is the proposal of several interesting activities and projects to be further carried out such as to set up a team of local trainers and young farmers for organic agriculture, to establish a demonstrative organic rice field, and to culture *Beauveria bassiana* fungus for the control of aphids.

After the learning process, Bo Ngoen farmers became more alert and aware of the impacts of chemical use, particularly a group of farmers who made a living from chemical spraying service. A number of farmers are eager to alter their ways of production to a healthier agricultural system. Therefore, capacity building activities for a group of farmers who are interested in organic agricultural practice have been organized throughout 2008. For example, a group of more than 30 farmers attended a five-day training on organic rice farming at Kao Kwan Foundation, Suphanburi province.

### From the learning process to the concrete practice

As a consequence of the implementation of the project on “health impact assessment of the use of chemicals in rice fields” in Bo Ngoen sub-district and continuous community learning process, a concrete change of the community’s public policy towards a healthier agricultural system is being witnessed through the following activities:

- **Young Buddhist Farmers and demonstration vegetable plot** During the project, apart from the farmers, a group of students from Bo Ngoen School called “Young Buddhist Farmers” under the supervision of Acharn (Master) Prathueng Hangkaeo has participated throughout this learning process. The lessons learnt from this are turned into such activities as the creation of chemical-free vegetable plots and herb plots for communal learning, with the support from Bo Ngoen Temple in providing a piece of land for the cultivation.

Moreover, through the sponsorships from Bo Ngoen SAO and Social Development Center 27, the Young Buddhist Farmers and interested farmers have been jointly organizing a series of training on the culture of *Beauveria bassiana* to eliminate aphids in rice paddies, the culture of *Trichoderma* fungi to heal fungal diseases of plants, and the production of leavening from forest soil for the fermentation of rice straw to be used in producing organic fertilizer. These are distributed to the farmers to reduce and replace the use of chemicals.



- **The setup of “Delightful Farming Group”** This is the gathering of Bo Ngoen farmers who are interested to reduce, refrain from, and quit using chemicals. The group leaders allocate a part of their rice fields to make demonstration organic plots for mutual learning and also discuss the benefits of organic farming e.g. cost reduction, healthier rice grasses, better soil quality, the increase of earth worms, better health of farmers, and less indication of dizziness, etc. In addition, a traditional harvest culture and rice offering rite are revived bringing about better community relationship and a new life to some social capitals that remain in the community.
- **The formulation of Bo Ngoen SAO’s Community Development Plan 2009** Due to the growing concern of citizens and other stakeholders in the area about the importance of developing a healthier agricultural system, a development plan and budget allocation for healthy agriculture in Bo Ngoen administrative area for the year 2009 have been set up.

It can be concluded that the application of HIA in this case has focused on building a community learning process about the impacts of chemical use in an interdisciplinary manner by linking the social, economic, environmental, and health aspects together and proposing practical alternatives in reducing the use of chemicals in farming. It also employed the method of learning-by-doing. Such learning process is a critical starting point towards future development of sustainable, healthy public policies for the community.

# 16 Case Study: Health Impact Assessment and Review of Thachin Basin Development Project 2008

## Background to the Thachin Basin Development Project 2008

In August 2008, it rained very heavily in areas close to the Chao Phraya River Basin, and the water the river's tributaries rose to levels that made storage impossible. Hence a great deal of the excess water was released to these areas. In order to save Bangkok, the country's economic centre, from crisis, excess water was released into the Thachin river, heavily damaging the provinces of Suphan Buri and Nakhon Pathom. The people of Nakhon Pathom called this flood a "policy flood."

On Feb 11, 2008 the Irrigation Department, Thammasat University and the Asian Institute of Technology signed an agreement to research solutions for the floods at the Thachin river Basin. The Irrigation Department funded the research, Thammasat looked into social and environmental questions while AIT looked into engineering techniques. The researchers came up with many proposals: deepen and widen natural water reservoirs such as creeks, swamps, ditches, canals or marshes so they can accommodate seasonal floods; dredge the entire Thachin river; regulate the river's waterways. But the main point of the commission and research was the digging of canals that would be shortcuts for taking excess water to the sea. The model was Klonglat Po in Samut Prakarn Province, which is located a long way from the Thachin river Basin. The short-cut canals to be dug were: 1) Klonglat Ngiewrai-Thaiyawas 2) Klonglat Thomkret-Tha Talat. The plan distressed local villagers who expected to suffer from the relocation.



## Status of problems in the Thachin Basin

The Thachin river is shallow because authorities have failed to develop or look after it appropriately. This has caused sand banks and other obstructions to the water flow, such as bridges, large cargo ships, water weeds, and food floes. Moreover the water was polluted by waste releases from industry, agriculture and people's houses. The river had become a rubbish dump. Hence the water's flow to the sea had slowed down, with most of the ditches and canals clogged with silt, the water gates tending to be narrower than the canals, and Java water weeds spreading everywhere. When there are flash floods, the water cannot flow.

## Health impact assessment, a tool for the grass roots to learn and find a way out.

Data used in HIA as a rule come from: 1) knowledge and ability to learn of stakeholders and those who make the assessment; 2) existing data and evidence – namely data of those who conducted the review of the Tachin Basin Development; 3) experience – knowledge gleaned from similar situations such as the Paklat water gate at the Mae Klong River, and the cutting of the Kuchiro River on Hokkaido in Japan. Several approaches and tools were applied in this assessment: data from the management of the flooding problem in Nakhon Pathom in 2006; the reduction of water and charting of an environmental map of the community; and maps for land and water communications. In addition, the National Health Commission funded a health assembly process specific to Nakhon Pathom. Moreover there was a brainstorming session that brought together academics, professionals, the regional environmental director, and five people qualified in applying the traditional wisdom of water reduction. On nine occasions, local people joined research teams in the process of learning.

The assessment found that two locations set for digging short-cut canals were prime areas of enormous value where people earned their living. Researchers also found a strong network of family relationships throughout the river basin that was of historical value to the old city of Nakhon Chaisri and the new market (Tha Thalot) at Sampran. In addition, they discovered a residential system special to the river basin, a healthy fish colony and silt, an agricultural system, a tourism site that was important culturally, historically, agriculturally and in terms of health.

In all nine research projects at Nakhon Pathom, researchers identified as the first priority the digging of short-cut canals at Ngiew Rai-Thayawas and Hom Kret-Thalot, and as the second priority the dredging of the Thachin river from Pophraya to the mouth of the river. 700 villagers disagreed and opposed the digging of new short-cut canals, saying the project's approach was not clear, especially the concept for solving the problem. (For whom do the people of Nakhon Pathom have to make sacrifices?) . They asked if the project would solve the problem effectively. What are the project's responsibilities when there are repercussions? Who would supervise and bear responsibilities if the project had adverse impacts on health, and the education process. Too few villagers participated in the project. Those who stood to be adversely affected found out about the project too soon before the closing of the research. They did not trust the academics who conducted the research by using data in 2002. Those linked to the problem played a minor role in forging the solutions.

Because the Thachin river Basin bends and turns in the shape of a pig's belly, and is rich in resources, any fast release of water will change its residential system, causing environmental problems . This has been the case of the Bang Pakong River, the Paklat Water Gate at the Mae Klong River, and most clearly, at the Kuchiro River on Hokkaido Island in Japan which is facing serious problems, its recovery and rehabilitation demanding a huge budget allocation.

Most widely discussed are the social impacts. The Thachin river Basin possesses a strong network of kinship relationships and linkages. If people have to uproot from places they have lived in since they were born, the community will breakdown and kinship relationships scattered. They will have to change occupations and communal ways of life. There will be conflicts of water use between the community and those engaged in agriculture and tourism. There also will be conflicts between the state and the community in water management. Problems of land loss will kick in as well as those arising from the project's adverse impacts.

Psychological impacts: the stresses that have to be suffered by people adversely affected, their worries about losing land to earn a living as a result of the project, about relocating, and about change in the way of life. The side effects of stress will grow more serious.

**Economic impacts:** The project will have adverse impacts on the floating markets all along the Thachin river extending across three districts. Together with the value of five types of tourism to be affected, the extent of loss is estimated at 1,000 million baht. Because the original river has shored up silt, or died, the value of agricultural processing industries, estimated at 1,000 million baht, has dropped. This has brought down the quality and quantity of products produced, and blocked the flow of financing and the economy in general.



**Intellectual impacts:** Adversely affected is the value of Suvarnabhumi, the civilisation of the Tharavati Kingdom which previously was linked by waterways. This has impacts culturally and historically on 40 temples, 11 floating markets, and three rice mills which have existed since the Ayudhya Period . Flooding of the Thachin river Basin has occurred periodically. The local community has a natural system of orchard ditches and monkey-cheek canals. If there are flash floods, the water subsides and the dredging of the waterways help to drain off the water.



**The people's conclusions:** All 700 villagers disagree with the proposal to dig new short-circuit canals because this brings down flooding by 20 days from a total of 92 days (2006) but does not solve the problem of floods. From HIA presented on July 7 and Aug 6, 2008, researchers gladly dropped the digging of these two short-circuit canals from the project because, saying it brings small benefits but serious adverse repercussions. They have reported their views to the Irrigation Department, which employed them to conduct the study.

# 17 Case Study:

## Health Impact Assessment of Saraphee Canal management: A common tragedy in the Bang Pakong-Prachinburi river basin

### The situation of water management in Saraphee Canal

Saraphee Canal is a small canal which receives water from a nearby plain during flooding seasons. It consists of several tiny ditches and swamps. Being completely constructed in 1980, the canal is connected with Prachinburi River at Bang Pluang sub-district, Baan Sang district, Prachinburi province. According to the collected data during 2004 – 2007, the area around Saraphee Canal is a small irrigated area which is, believed not to be a complex ecosystem. Of this land, 105,000 rai (equal to 16,800 hectares) is low-lying and seasonally flooded. It can contain the water of approximately 30 million cubic meters. This seems to be manageable through advanced engineering science, but the real problem is not technological. Rather, it requires relationship management: a paradigm shift for a more integrated environmental and natural resources management.

In 2004, hundreds of thousands of fish were found dead in the river causing serious economic loss to the Somnams family and other families in Baan Sang sub-district since they had earned their lives mainly from fish cage farming due to a previous drop in their crops. When this phenomenon occurred, the farmers made a complaint to the provincial authority and had the news reported in newspapers. However, the only solution by the authority was a no more than 20,000 Thai Baht compensation for each family, without any further analysis concerning the real cause of the local pollution or any motivation for the long-term problem solving. The story then began to fade.

Later, an affected group of citizens, led by the Somnams and local fishermen, gathered to survey and assess the impacts on the environment, natural resources, and health. They also studied geographical attributes of their community and results of the monitoring by villagers who lived by the river and Saraphee Canal. The findings led to the conclusion of some main causes and relevant factors which made the soluble oxygen value rapidly decreased till a vast number of fish died quickly all at once; their assumptions include 1) there were a considerable quantity of sediments in front of a lock in Saraphee Canal; when this was lifted, the sediments fluxed into the main watercourse immediately; 2) a paper factory in this area involved the daily production of recycled paper and a major by product of this process was the precipitate which, when lacking appropriate management and treatment, became an important factor of poor water quality in Saraphee Canal's irrigational area once the lock was opened.

In terms of crop farming, it was found that villagers used only a small amount of chemical fertilizers and pesticides. Besides, according to the observation and data collection by a network of people who lived downstream of Prachinburi River, the water qualities of Saraphee Canal from the upstream to the downstream, where the lock was located, were good but would turn very poor before the very opening time of the lock.

The group presented their assumptions to Prachinburi's provincial irrigation office in September 2005, but the Province did not pay much attention to following the group's recommendations to solving this problem, which include: to release the water from above the lock using railroad ties as a sediment enclosure; to suction sediments in front of the lock and in the watercourse; to impose continuous monitoring of water quality in both the irrigated area and the factories located on it.

The implementation in 2005 following the group's proposal faced many difficulties because the action arose without the recognition that the most essential factor in solving the problem was the participatory, integrated knowledge and experience sharing. Although the same phenomenon did not reoccur in that year as the irrigation officer agreed to take an action according to proposal. However, the problem took place again in 2006 and got increasingly worse because, in an attempt to solve it, the authority released the water from Khun Daan Prakarnchol dam in Nakhon Nayok province to force the polluted water out to the sea at a rate of almost five million cubic meters per day, but this resulted in even a larger number of dead fish in a greater area, reaching to as far as the mouth of Bang Pakong River, Chachoengsao province. The event rendered the ecosystem totally devastated.

In 2007, a group of citizens from Prachinburi submitted a letter to Prime Minister General Surayudh Chulanont and Minister of Natural Resources and the Environment Mr. Kasem Sanithwong Na Ayudhaya demanding their active participation in solving the water pollution problem. Thus, the cooperation between the network of local people who lived downstream and the governmental authorities related to water administration and management began with finding causes of the problem, seeking information and knowledge, deliberating and negotiating.

### The appropriate timing



Despite an effort to reach common agreements, particularly those that had been developed through the exchange of information and negotiation between all groups of end users both in the irrigated area and in downstream area in the hope of reducing the pollution in Prachinburi River during the opening period of Saraphee Canal's lock, while these were being implemented, some farmers who lived in the irrigated area and benefit from seasonal floods still complained that the water level might not decrease in time to the harvest season and that the irrigation office sided with NGOs and fish cage farmers, for example.



During the implementation period, the irrigation officers and the working group had to keep an eye on the quality of water till they successfully got over the crisis. What remained were the knowledge derived from the participatory process in solving the facing problem and questions about future development and deliberation, e.g. "is a lock a sufficient measure to control the whole irrigated area?"; "is it necessary for an irrigation officer to be equipped with knowledge not only in the field of hydrology relating to ecosystem and eco-subsystem but also in that of political and social sciences?"; "should there be further management to improve the effectiveness of small and medium scale local irrigation systems?"

## The trend of water demand in industrial sector and the role of end users with higher bargaining power

Although the industrial sector is not an only polluter of water since there is still the waste from residential and agricultural sectors, most of the industries located in the area have been found to be highly polluting such as paper industry and textile bleaching and dyeing industry. Therefore, the role of industrial sector in Prachinburi province as a polluter should be taken into consideration. In addition, some certain types of industries are given permission by the central authority and exempted from EIA study. The two paper factories in Saraphee Canal's irrigated area are a good illustration of this.



By considering water demands in Prachinburi province in 2007, that of industrial sector is expected to be three times higher than in 2005 while the consumer sector's is likely to grow more than twice. It is also evident that the trend is highest in terms of the industrial sector whereas the agricultural sector will see a decline. Furthermore, the industries are expanding into an inner region, specifically the upper part of the province, which nowadays serves three large real estates consisting of 1,000 factories. This means the required containment of water before it flows to the river, which inevitably causes a sharp drop in water quantity and the impacts on the upstream environment such as polluted water and hazardous waste.

## Not only polluted water and dead fish...but also the decline of local ways of life

With regard to the pollution problem that took place in Saraphee Canal, the most obvious consequences are the changes in its physical attributes such as color and odor and the effects on aquatic animals and plants. Nevertheless, an insight into the problem shows a more complex aspect of the impacts over many lives. For instance, despite satisfactory oxygen value which helps the fish to survive, cage farmers are currently suffering from a recession in their occupation as it takes longer for the fish to grow (from previously 3 months to now 6 months), resulting in an increase in their production cost. They believe that the river is contaminated with chemicals of high electrical conductivity value impeding the fish's growth. Moreover, as the media report this situation, the middlemen tend to lower the price claiming the poorer quality of fish due to chemical contamination.

As seen from the above-stated problem and the successful solution by the cooperation of all sectors, it is important to stop blaming each other and better seek to address the most pressing issues to further improve the regulating system and mechanism of water management, both in macro and micro level, as well as to strengthen the social capacity in determining and monitoring water consumption by different production sectors and their accountability and responsibility for it.



# 18 Case Study: Health Impact Assessment of Baan Koum Dam Project

## A case of the memorandum of understanding (MOU) on Baan Koum Dam

Baan Koum Dam is one of the several dam projects which have been planned over Mekong River. This dam will directly block off the Mekong, not its branches. Before the signing of MOU in 2007, the Department of Alternative Energy Development and Efficiency had engaged Panya Consultant Co. Ltd and Macro Consultant Co. Ltd to conduct an initial environmental impact assessment of the project, which by the time was still called “a weir across Mekong River”. The report was completed in March 2008.

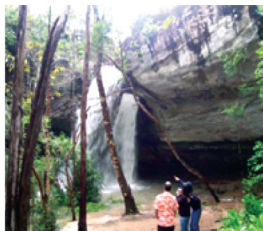
Only a month after being appointed the Foreign Affairs minister, Mr Noppadon Pattama submitted a “most urgent matter” dated March 10, 2008 to get an approval for the signing of an MOU on the Thai - Lao Electricity Development Cooperation. The MOU entailed the engagement of Italian -Thai Development Public Co. Ltd and its co-investor, Asiacorps Holding Co. Ltd, to study the feasibility and prospect of Baan Koum Dam Hydropower Project referring to “the private sector’s capital promptness and liquidity”.

A day later, the cabinet approved the proposal but requested to modify the terms from “Italian -Thai Development Public Co. Ltd and its co-investor, Asiacorps Holding Co. Ltd” to a more general “Private Sector”. This action was supposedly intended not to draw too much public attention.

Two weeks later, on March 25, 2008, Mr. Noppadon Pattama signed an MOU with the Lao PDR Government in Vientiane. The study is to be carried out in a 15-month period. In brief, it took only two weeks for this MOU signing, without any information provided to the public. Besides, although the names of the companies are not stated in the memorandum, a recent field study in Kongchiem district, Ubon Ratchathanee province shows that Italian -Thai Development Public Co. Ltd has been operating in the area since April 2008 to conduct a feasibility study as proposed ear.



**Left:** A view of Mekong River during seasonal flooding at Kan Tha Kwian village, Kongchiem district.



**Right:** Saeng Chan Waterfall (locally known as hoiing waterfall) is expected to be affected by the dam project

## Baan Koum Dam project.

Baan Koum Dam is a dam built across Mekong River and allows the flow of water throughout the year (also called a run-of-river hydropower dam), which is of a similar type to Pak Mun Dam’s. Baan Koum Dam is located in Don Koum

(Koum Isle) between Tha Lang village, Huay Pai sub-district, Kongchiem district, Ubon Ratchathane province and Koum Noi village, Champasak province, Lao PDR.

The installed capacity of Baan Koum Dam is 1,872 megawatts, while its dependable capacity is only 375.7 megawatts. The construction duration is 10 years, and the project's net value is 95,348.44 million Thai Baht or 120,390 million THB with inflation and interest rates included.

That the dam's dependable capacity is much less than the installed one (approximately only 20 per cent of the installed capacity) is because it allows the year-round flow of water and does not have a large reservoir. Consequently, the quantity of water available for electricity generation is variable according to seasons. For example, during dry season when the water in the Mekong decreases, the electricity volume also diminishes.

However, during the same period (from March to May), Thailand also witnesses a peak demand of electricity due to the hottest climate. But this type of dam (i.e. Pak Mun Dam) is usually far from meeting such demand.

### Cost-effectiveness of the investment

The fact that Baan Koum Dam's dependable capacity is only 375.7 megawatts despite its installed capacity of 1,872 megawatts means that although we already have to pay 100,000 million THB for the dam construction, we still have to build more power plants to regain the missing 1,500 megawatts. The cost-effectiveness of the dam is inevitably subject to question.

By comparing the construction of Baan Koum Dam with natural gas and biomass power stations, the result shows that in order to equally gain the dependable capacity of 375.7 mega watts; it requires much higher installed capacity in the case of Baan Koum than in the other two cases, which results in higher cost of building. In comparison, the cost per megawatt of Baan Koum Dam is 253.8 million THB, while that of biomass and natural gas power stations is only 29.4 and 74.0 million THB respectively.

**Table: Comparison of electricity generation costs in the three options**

Points	Baan Koum Dam	Natural gas	Biomass
Installed capacity (MW)	1,872.0	442.0	500.9
Dependable capacity (MW)	375.7	375.7	375.7
Investment fund (million THB)	95,348.0	11,049.4	27,800.3
Investment fund per megawatt of dependable capacity (million THB/MW)	253.8	29.4	74.0

### Impacts of the project

According to initial studies by the Department of Energy Development and Efficiency and Mr. Montree Chantawong from Ecological Recovery in Indochina and Myanmar Project and the recent field study, it is evident that Baan Koum Dam will cause several negative impacts as follows:

- **Inundation of four villages, consisting of 239 households** Out of the four villages, one is located on Thai side and is expected to have impacts over 29 households. However, according to the field study and by observing an overflow depth at 115 meters above medium sea level, more households are likely to be affected, as well as some schools and temples.

- **Inundation of 13,858 Rai (equal to 2217.28 hectares) of cultivation areas along Mekong River banks**, 5,490 Rai (or 878.4 hectares) of which is on Thai side and usually survives seasonal floods and benefits from the natural minerals in Mekong River.
- **Inundation of 480 Rai (or 76.8 hectares) of Pha Taem National Park area** This truly fertile forest is likely to be withdrawn of its national park status once the dam is operated.
- **A barrier to the fish's natural migratory route** Just like what happened in Pak Mun dam, this time the impacts may be greater since the dam directly blocks off the river.
- **Impacts on the ways of life of 14 fishermen's villages on Thai side and 6 villages on Lao side** Again, this has been experienced by the villagers who live by Pak Mun dam.
- **Loss of touristic sites and ecosystems** These places include Chan Precipice, Sam Pan Bok Islet, Salae Kon, DonYai (the Great Isle), Salueng Beach, Baan Pak Saeng Beach, Fish Cove, A thousand-year-old giant vine, and Saeng Chan Waterfall. Besides, the villagers are concerned with the possible impact on the Naga Fireball (an unproven natural phenomenon annually occurs in Mekong River in the full moon night of the 11th month according to Thai lunar calendar and is linked to traditional beliefs of the local), which happens each year at Baan Ta Mui village, downstream of the dam.
- **Changes of flow rate in Mekong River**, particularly the level of water below the dam and the direction of the flow, which may affect the national boundaries of both countries later on.

The implementation of this project without taking into consideration the provision under Section 67 of the national constitution, which states that any project which may seriously affect the quality of the environment, natural resources and biological diversity shall not be permitted, unless its impacts on the quality of the environment and on health of the people in the communities have been studied and evaluated and consultation with the public and interested parties have been organised, and opinions of an independent organisation, consisting of representatives from private environmental and health organisations and from higher education institutions providing studies in the field of environment, natural resources or health, have been obtained prior to the operation of such project, may repeat the mistakes Thai government has previously done in the case of Preah Vihear Temple.

For this reason, before the mistakes are repeated, the review of the project in terms of its soundness should be allowed to Thai society and the cautious implementation should be done in accordant with the intention of the constitution.

# 19 Case Study: Health Impact Assessment on Changes of Fruits and Vegetables Supply Chains after Thai-Chinese Free Trade Agreement

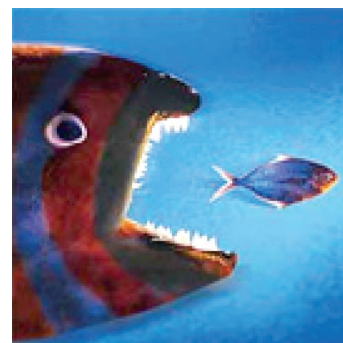
Thailand entered into the Thai-Chinese Free Trade Agreement in 2003 (under the ASEAN-China Framework). The Agreement, under which import tariffs of some goods traded between the two countries be reduced to 0%, made fruits and vegetables be among goods that were exempted from both import and export tariffs. This is because the Thai government wanted to boost the export of agricultural products such as Longan, Durian, and to ensure that consumers benefit from imports of cheap non-tropical fruits from China.

However, such free trade agreement was regarded as a catalyst to change the structure of Thai fruits and vegetables business supply chains, thus academics, policy makers, government officials, politicians and civil society were concerned of the impact of Thai-Chinese Free Trade Agreement, especially on the public health.

The Office of Knowledge Management and Development, in collaboration with the Applied Economics Research Center of Kasetsart University, Healthy Public Policy Foundation and FTA Watch conducted a study and assessment of changes and impact that happened to concerned parties in fruits and vegetables business supply chains after the Agreement became effective. The study was aimed at providing an opportunity of changing views and concerns towards more comprehensive and dimensional foreign and economics development policies, especially in health aspects. It was expected to open channels for recommendations on policies and alternatives that would have been more flexible and immune to the handling of trade negotiations in the future.

The approach of HIA study was divided into three aspects as follows;

1. Impact on and adjustment of farmers in light of Thai-Chinese Free Trade Agreement. Has their quality of life been improved?
2. Was consumer behavior better than it was before the Agreement?
3. Changes in business supply chains. How did the trade of agricultural products attribute to health dimension?



In order to address those questions, the researchers team used the trade structures in fruits and vegetable supply chains to determine target group for the study. There are four groups of stakeholders identified as follows;

- Importers and exporters
- Wholesale traders and retailers in conventional trade and modern trade
- Farmers of Longan and Durian who had competitive advantages and those of Garlic, Onion and Potato Onion who had not.
- Consumers

As for data-collecting methodologies, the researcher team conducted in-depth interviews, focus-group interviews and distributed questionnaires.

According to the study, the farmers' quality of life has not been improved. Rather, it was worsen, particularly Garlic, Onion and Carrot farmers were more suffered after both countries signed the Agreement. This stemmed from the fact that imports of same agricultural commodities from

China partially made local products hit the "price ceiling," a situation whereby product prices are prevented from attaining a certain high level. This likely made farmers get lower prices than what they used to receive. Meanwhile, the way farmers were adjusted themselves by using agrochemicals to cope with and survive in the deteriorating situations put pressure on farmers not only to be at risk of business loss, but also to agrochemical exposure.



For farmers who had competitive advantage in Longan and Durian, they were not under impression that the market trends had a better sign, neither price was on the rise, nor volume of commodity sales were increased. Moreover, they faced difficulties in the strict commodity grading system which made them unable to forecast a positive export benefit.



**Agricultural commodities that have been affected from Thai-Chinese Free Trade Agreement**

Although consumers had more choices of agricultural commodities and imported non-tropical fruits and vegetables from China became cheaper, the Food and Drugs Organization's statistics in 2002 showed that the average daily consumption of vegetables for Thai people was 103.03 grams per person, and supposed to be decreased to 86.37 grams per person during 2002-2005. Fruit consumption was marginally increased during the same period of time. Furthermore, the consuming behavior was also changed as Thai people appeared to preferred imported fruits and vegetables. This resulted in direct impact on Thai farmers who had to lose market share to imported agricultural commodities whereas the domestic markets were not grown up as expected.

The obvious structural market change was a severe price competition in agricultural commodities. Some traders thus resolved to lower product standards by, for example, adulterating those commodities, failing to provide place of origin labels nutrition facts on the products, and failing to pay attention to the quality of products due to a loose system of food safety testing at the import checkpoints, etc.

The lessons learned from the health impact study as mentioned above led to the development of policy recommendations for next round of making a free trade agreement as follows;

- 1) Cost and benefit assessment at the macro economics level is not sufficient in addressing the health impact, especially on farmers.
- 2) Cost and benefit assessment prior to the free-trade trade agreement should not base solely upon the border trade's volume. Rather, it should take into consideration the structural domestic economic change of each product item.

- 3) Impact assessment should take into account the imbalance of power in market structures, and the real capability of farmers when developing management strategies for those challenges. This is to ensure that impact assessment is conducted on the real situation basis, and as a “real-life assessment”
- 4) In the process of free trade agreement negotiations, public participation should be given importance so that concerns of stakeholders are taken into account and impact assessment are framed, reflecting reality and covering all dimensional aspects.



Imported agricultural commodities from China

