

5. THAILAND

5.1 Water Resources Management Policies and Actions

In Thailand, the Office of Natural Resources and Environmental Policy and Planning issued the State of Environment Report 2004, which has highlighted specific environmental issues of 2004, including water resource, landslide hazard, wildlife resource, world heritage and environmental education.

Water resource is essential to all living things as well as an important input in economic sectors such as agriculture, industry and services. Water shortages and flooding are commonly reported in Thailand during the dry and raining seasons respectively. This fluctuating pattern of water availability together with increasing water demand over the years makes water resource management in Thailand an important issue. Past water resource management has been oriented towards supply-side management with an emphasis on construction of irrigation dams and water distribution systems. At present, most activities are still oriented towards supply-side management such as the integrated water resource management project or the water networking for agriculture project. However, some demand-side management has been recently introduced such as the hydroelectricity project, groundwater pricing or wastewater charge. These tools are added to help improve efficiency in water resources management.⁵¹

Integrated Water Resources Management Plan

The Integrated Water Resources Management (IWRM) is one of the perfect tools that should be applied in order to minimise the problems related to water resources. The IWRM approach of which is adopted in Thailand should be further applied in the 25 river basins in the country. Moreover, the Royal Thai Government's policies on water resource management and the solutions for development or rehabilitation will be verified and presented into three main categories based on area functions which are the upper (forest area), middle (agricultural area and community), and lower (downstream included coastal area) River Basin.

The Plan aims to:

- Prepare an inventory of all water bodies to support the National Water Information Center
- Modernise river basin development plan and water allocation plan
- Prepare river basin management plan covering decision support system, flood forecasting and warning system, etc.
- Implement aquifer storage recovery system in critical areas
- Implement conjunctive use of surface and groundwater resources in potential areas⁵²

⁵¹ Extracted from "Thailand State of Environment Report 2004",
http://www.onep.go.th/eng/download/soe2004_ex.pdf, page 1, 32

⁵² Extracted from "Integrated Water Resources Management in Thailand",
<http://www.dgr.go.th/tor/image/pdf/IWRMinTHAILAND.pdf>, Pages 1-2

The Ninth National Plan (2002-2006)

In the Ninth National Plan, priority on water resources management is given to the following issues:

- Shifting from the supply-side approach to the demand-side strategy. In Thailand, the supply-side approach has dominated the development and management of water resources for more than three decades. With new water-related problems arising, serious consideration should be given to the demand-side approach. Instead of focusing on investment for additional water supplies, the demand management option will concentrate on the organisational and institutional aspects in order to reduce costs while promoting sustainability and environmental conservation.
- A comprehensive overall basin water management strategy will be substituted to the project-by-project approach. This strategy will be formulated by integrating institutional, policy, legal and technical measures, and will seek to provide guidance for the systematic development, management and protection of a basin's water resources in order to meet the increasing demands of socio-economic and population growth in the basin area.
- Water should be recognised as a tradable commodity, since it has an economic value in all its competing uses. Therefore, incentives, regulations, permit restrictions, and penalties that will help guide and convince the people to use water efficiently and equitably will be established. Meanwhile, innovations in water-saving technology will also be encouraged.
- Economic instruments should be considered for the alleviation of protracted water crises. The regulations supporting these economic instruments should be clear and acceptable to all groups of water users. Effective and realistic cost-recovery mechanisms should be adopted and implemented. This would require considerable public awareness and education. Whether full cost recovery or recovery of operational cost is pursued should depend on water usage and local conditions.
- The government will try to set up the institutional framework of water administration with users' participation by transforming its strategy and operating style in order to give the opportunity to stakeholders, especially local people, to participate in water resources management, such as announcing to the public all the projects that affect people living in a given area and allowing representatives from the operating area to participate in the decisions that affect them.
- The private sector should be encouraged to play a more important role in water resources management, especially concerning wastewater in urban areas.⁵³

⁵³ Extracted from "Thailand's Water Vision: A Case Study - Sacha Sethaputra, Suwit Thanopanuwat, Ladawan Kumpa & Surapol Pattanee", <http://www.fao.org/docrep/004/AB776E/ab776e04.htm#TopOfPage>

5.2 Environmental Evaluation/SEA in Thailand

There is, to date, no mandatory SEA in Thailand. It is recognised that SEA is a tool to indicate the strengths and the weaknesses of an area or region in terms of its natural resources and environment. An analysis of this kind should be made available before a policy calls for the development of an area or region (Pantumsinchai et al., 2004). In June 2005 the Office of National Environmental Board (ONEP) published Interim Guidance Notes on piloting for the country Environmental Assessment system. The guidance covers CEA, SEA, etc. (Unkulvasapaul, 2005).⁵⁴

Under the sector 46, Enhancement and Conservation of the National Environmental Quality Act (EQA) (1992), any projects or activities published in the Government Gazette types and sizes of projects or activities likely to have environmental impact, which are required to prepare the Environmental Impact Assessment (EIA) report to the Office of Environmental Policy and Planning and the Expert Review Committee for review and make approval before further proceedings.⁵⁵

With the aim to facilitate the evolution of SEA in Thai society, the preliminary synthesis of SEA approaches that are evolving in Thai society is performed. Below shows the four SEA approaches in Thailand:

SEA - EIA School

This SEA approach is mainly expanded from the EIA concept to perform above the project level, such as programme, or sometimes, mega-project. The main aims are to minimise environmental impacts by identifying mitigation measures. The main process of this SEA approach follows the EIA process of Screening, Scoping, Impact Analysis, Reporting, and Monitoring. Generally, it tends to address the development direction, programme, or mega-project that is already decided or preliminary determined by the government or decision-makers.

SEA - Area Base

This approach focuses on an area as the basis for considering strategic issues. It is the analysis on various aspects of an area to provide the scope and detail data for initiating or planning any development. An area for this SEA can be community and district to province and region. The main analysis is on natural resources and environment, for example, forest area, conservative and other ecological sensitive area, water and ground water resources, pollution sources, etc. Moreover, the analysis may include other aspects, such as cultural heritage sites, ethnic group, health services, etc.

⁵⁴ Referenced to "Environmental Impact Assessment Regulations and Strategic Environmental Assessment Requirements - Practices and Lessons Learned in East and Southeast Asia" by the Environment and Social Development Unit (EASES), April 2006, <http://siteresources.worldbank.org/INTEAPREGTOPENVIRONMENT/Resources/EIA&SEA-regional-review.pdf>, Pages 62-65 - Annex 11 Thailand

⁵⁵ Referenced to "Enhancement and Conservation of National Environmental Quality Act B.E. 2535, NEQA 1992", http://www.pcd.go.th/info_serv/en_reg_envi.html

Therefore, SEA Area base will provide the context of the area on various aspects. It may be use for considering the overall development potential of the area and initiating development project, or for the more specific purpose, selecting the appropriate site for programme or project development.

SEA Policy Options

The main aims of the SEA Policy Options are to support and influence the public decision-making process by providing information and analysis on the impacts of various policy options as well as the trade-off in each option. It will identify various policy alternatives and options and analyse the impacts on various aspects for the comparison of each option.

SEA Development Direction

Lastly, the forth SEA approach is following the concept and tool of Strategic Environmental Analysis (SEAN). SEAN has been developed to integrate environmental issues into strategic planning. It is a systematic and comprehensive analysis of context, value, factors, problems, and opportunities to synthesise the best strategic direction and/or option.⁵⁶



Pa Sak dam ⁵⁷



Source of headwaters of Nan river branches ⁵⁸

⁵⁶ Referenced to the "Addressing Health in SEA for Healthy Public Policy: A contribution from SEA Development in Thailand" by the Health Systems Research Institute, Thailand, 2005,
http://www.iaia.org/non_members/conference/SEA%20Prague/Prague%203/D3_Nuntavorakarn_Sabrum_Sukkumnoed.pdf, Pages 2-3 to 2-6

⁵⁷ Source: http://www.rdpb.go.th/rdpb/EN/BRANDSITE/theproject_rdp07_1.aspx

⁵⁸ Source: <http://thailand-northern.blogspot.com/2007/09/mae-charim-national-park.html>

5.3 Environmental Evaluation/SEA on Water Resources Management in Thailand

In Thailand, there is no statutory requirement for SEA in Thailand but with guidelines for SEA application in Thailand which proposed that SEA be used above the project level. Besides, SEA approaches (e.g. SEA EIA School, SEA Area Base, SEA Policy Options and SEA Development Direction) have been evolved to facilitate the evolution of SEA in Thai society. Details of the requirements should refer to section 5.2.

A summary table for both the water resources management policies and actions and SEA status in Thailand is presented in **Exhibit TH-1**:

Exhibit TH-1 Summary of Water Resources Management (WRM) Policies and Actions and SEA status in Thailand	
(a) WRM Policies and Actions	
WRM Policies and Actions	Policies <ul style="list-style-type: none"> ● Integrated Water Resources Management Plan ● The Ninth National Plan Actions <ul style="list-style-type: none"> ● N/A
Guidance/Legislations in WRM	N/A
(b) Environmental Evaluations / SEA Status in WRM Policies and Actions	
Type of Assessment	SEA
Requirement Mechanisms	Administrative
Legislation for Environmental Evaluation / SEA	N/A
Applications	Policies, Plans and Programmes

5.4 Analysis and Conclusions

WRM Policies

In Thailand, most activities related to water resources management are oriented towards supply-side management such as the integrated water resource management project or the water networking for agriculture project. However, some demand-side management has been recently introduced such as the hydroelectricity project, groundwater pricing or waste-water charge. These tools are added to help improve efficiency in water resources management. Besides, the Integrated Water Resources Management is a tool to minimise the problems related to water resources. It aims to provide a concrete plan in protecting the river basin from flooding, prepare an inventory of all water bodies, implement both the aquifer storage recovery system and conjunctive use of surface and groundwater in some areas.

Compared to Thailand, Hong Kong's two main sources of water are from rainfall from natural catchment and supply from Guangdong. It is Water Supplies Department's (WSD) scope of work to cover the whole process from the collection of natural yield from rainfall, the reception of raw water from Guangdong to the provision of a supply with a quality of accepted international standards to the users' taps. WSD also supplies sea water for flushing purposes to over 80% of the population. For protection against flooding, sewage collection, treatment and disposal, it is under Drainage Services Department's (DSD) jurisdiction.

For the sustainable development of Hong Kong, WSD has initiated a *Total Water Management programme* comprising key elements of new water resources, water reclamation, water conservation and water resources protection and management was initiated for better utilization of the different water resources.

EE/SEA

Regarding to the SEA/EE system in Thailand, it is under development stage. There is no mandatory SEA in Thailand but with guidelines for SEA application in Thailand which proposed that SEA be used above the project level. Besides, SEA approaches (e.g. SEA EIA School, SEA Area Base, SEA Policy Options and SEA Development Direction) have been evolved to facilitate the evolution of SEA in Thai society.

While the SEA/EE system in Thailand is under development, there are both statutory and non-statutory systems for PPP projects in Hong Kong. Hong Kong's SEA/EE is under Environmental Protection Department's (EPD) jurisdiction. At present, there are both statutory and administrative systems for PPP projects. While the statutory requirements govern primarily large scale development projects (i.e. over 20 ha of area or population over 100,000), the administrative counterpart has been applied to land use planning, transportation and sectoral PPP.

5.5 Examples of Water Resources Management Policies / Actions or their Environmental Evaluation/SEA

Example TH-1 Vision and Management Plan of Water for Life and Health of Thai People in the Next Decade (2010) ⁵⁹	
Description of the Plan	<p>This Plan is organised by the World Health Organisation. The vision of this Plan is to make all Thais to enjoy clean and adequate water supply for good health with the participation of all stakeholders in efficient and sustainable manner by 2010.</p> <p>This plan has set up some goals, they are:</p> <ul style="list-style-type: none"> • To supply an adequate quantity of clean water for the consumption of all families • All local communities have efficient disposal management systems for avoiding the contamination in the water resources. • Encourage public awareness regarding consumption water, impacts of the polluted water problem, and efficient use of water
Outcome of the Plan	<p>In accordance with the above goals, different projects and activities were held in order to attain the achievements mentioned. Here are some examples of the projects and activities that have implemented:</p> <ul style="list-style-type: none"> • Survey and report the requirement of water for life and health in all its aspects • Improve storage efficiency of surface water sources • Evaluate the potential of groundwater • Launch the surface water quality monitoring and surveillance project • Follow up and evaluate wastewater discharge from health care facilities • Follow up and evaluate wastewater discharge from industries • Follow up and evaluate wastewater discharge in canals in Bangkok Metropolitan • Develop a network of groundwater quality monitoring • Develop wastewater treatment systems in major urban areas • Launch the public awareness and public participation campaign for community wastewater treatment • Launch the public awareness and public participation campaign on the prudent and rational use of water resources • Promote the public awareness and public participation campaign for wastewater treatment in Bangkok Metropolitan • Integrate water for life and health vision and strategy into formal and informal educational at all levels • Conduct study of proper organizational structures of water for life and health • Promote public participation in maintenance and conservation of water resources through clubs and volunteers • Promote the prudent and rational use of water • Develop guidelines and technology transfer relating to water for life and health.

⁵⁹ Extracted from “National Environment and Health Action Plan- Thailand”
http://www.searo.who.int/EN/Section23/Section1318/Section1797_7720.htm