

Transboundary Cooperation for River Basin Management between Lao PDR and Thailand in Xe Bang Hieng Basin-Lao PDR and Nam Kam Basin-Thailand

Duration: December 2013 – June 2018

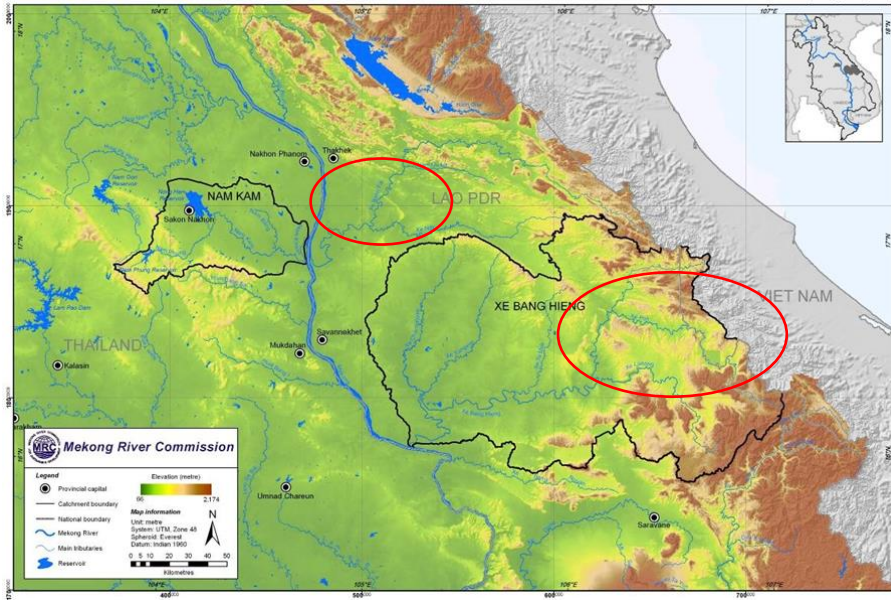
Budget: US\$ 354,000

Description: The project aimed to strengthen bilateral dialogue for knowledge sharing to improve wetland management in Lao PDR's Xe Bang Hieng and Thailand's Nam Kam river basins. Both basins provide a haven for important biodiversity and ecosystems, and offer generous sources of food, thus supporting the livelihoods of local populations. Wetlands also provide important ecosystem services, for example by storing water during the dry season or buffering against floodwaters during heavy rains. To improve how these wetlands were management the project set out to exchange of knowledge and sharing experiences on water resources management between the Xe Ban Hieng basin and the Nam Kam basin. The project promoted peer-to-peer learning at the national and community levels through meetings and exchange visits, and enhanced IWRM-based management practices to build skills and find solutions that supported river basin planning, flood management, and sustainable irrigation development. It also focused on supporting pro-poor development and sustainable livelihoods.

Project location:

Nong Han wetland (Thailand)

Located at Sakon Nakhon Province, the *Nong Han* wetland was selected as a study area in the Nam Kam sub-basin of Thailand. Nong Han acts as a reservoir receiving water from the surrounding 21 tributaries originating largely from the Phu Phan Mountains, where the main tributary is Nam Phoong River. From Nong Han, the water continues to meander into the Nam Kam River, which is approximately 123 kilometres in length, and eventually empties into the Mekong River at That Phanom District, Nakhon Phanom Province. The area is made up of paddy fields, grasslands, and village communities. Nong Han supports an important and complex ecosystem that is diverse in aquatic flora and fauna.



Xe Champhone (Lao PDR)

The Xe Champhone wetland, Champhone District, Savannakhet Province, is one of Lao PDR's two sites that have been recognised by the Ramsar Convention on Wetlands of International Significance. The Xe Champhone wetland covers an area of c. 240km², with 120 km² of this being within the Ramsar site. The population with the wetland area is about 40,000 people, with 20 villages scattered along the periphery of the floodplain. The Xe Champhone wetlands play an important role in supporting the livelihoods of local people who rely on traditional rice cultivation, fishing, and livestock production for their subsistence and a source of income. The Houei Mak Mee wetland, which forms part of the Xe Champhone wetland, was chosen as a pilot area to develop the GIS mapping and to prepare a strategic plan for its management.

Project outputs: The project aimed had three tangible outputs;

1. Establishment of community river basin working groups to enhance IWRM-based wetland management plans in Nam Kam sub-basin.

Twenty-five River Basin Committees were established as directed by the Office of Prime Minister's Regulations on Water Resources Management (2007). The North Eastern Khong River Basin is one of 25 major river basins in Thailand. The MRC Basin Development Plan, identifies this as the 3T Sub-area, which comprises 29 sub-basins, with Nam Kam being one of these. In line with the Water Resources Management Regulation, the Nam Kam Working Group (NKWG) was established on 8 January 2013, comprising 35 members and 3 advisors. The authority and duty of NKWG at that time included the collection of water resources and related resources data and information, the preparation of a water resources management plan including an action plan and budget, and supporting public participation in water resources management, project monitoring and conflict resolution.

After its establishment in 2013, the NKWG continued their work with the support of a fiscal budget as allocated by the Department of Water Resources to implement its activity. Due to the limited budget the NKWG was only able to provide an administrative role, as there was limited budget to support the promotion and implementation of IWRM in the basin area. However, the working group members tried to link river basin planning and project development with Provincial and Local Administrative Organisations to increase its effectiveness, and to ensure area-based requirements were met.

To overcome this limitation, pilot areas in sub-district level were selected to establish Sub-district Working Group (WG) that comprised of representatives from: local administrative units; government officers - such as the chief of village, chief of sub-district, an agricultural promotion/fishery officer, and representatives from other relevant agencies; academia, and stakeholders who use natural resources such as farmer, fisherman etc.

The selected pilot areas were characterised by a variety of topographies, including: rain fed and drought areas; flood risk areas; intensive irrigated areas; partially irrigated areas; areas adjacent or within wetlands; watershed or foothill areas; urban areas; and multi-geographical areas. For the purpose of learning two comparable topographic areas were selected, with 15 pilot areas selected. The 15 pilot areas and corresponding group of topographic areas were as follows.

No.	Sub-district	District	Province	Topographic area types
1.	Wang Yang	Wang Yang	Nakhon Phanom	Rainfed and drought area
2.	Na Ngam	Renu Nakhon	Nakhon Phanom	Rainfed and drought area
3.	Na Lieng	Na Kae	Nakhon Phanom	Rainfed and drought area
4.	Maed Na Thom	Khok Si Suphan	Sakon Nakhon	Flood risk area
5.	Dan Muang Kham	Khok Si Suphan	Sakon Nakhon	Flood risk area
6.	Na Khu	Na Kae	Nakhon Phanom	Intensive irrigated area
7.	Nong Sang	Na Kae	Nakhon Phanom	Partial irrigated area
8.	Yod Chat	Wang Yang	Nakhon Phanom	Partial irrigated area
9.	Nong Yang Chin	Renu Nakhon	Nakhon Phanom	Partial irrigated area
10.	Ban Pan	Pone Na Kaew	Sakon Nakhon	Adjacent or within wetland
11.	Kan Lueng	Na Kae	Nakhon Phanom	Watershed or foothill area
12.	Kham Phi	Na Kae	Nakhon Phanom	Watershed or foothill area
13.	Hang Hong	Muaeng	Sakon Nakhon	Urban Area, wetland
14.	Chieng Sue	Pone Na Kaew	Sakon Nakhon	Multi-geographical area
15.	Ban Pone	Pone Na Kaew	Sakon Nakhon	Multi-geographical area

The duties of the Sub-district WG were set at the sub-basin level and were tasked to:

- 1) Collect relevant water resources management data in the sub-district, including identifying the challenges and needs of the people in sub-district;
- 2) Analyse data/information, and propose policies, strategies, and plans for projects related to water resources in sub-district;
- 3) Propose guidelines on water resources management in sub-district and act as a facilitator;
- 4) Undertake other tasks as assigned by the provincial, district and other relevant agencies.

IWRM capacity building was conducted for members of the working groups. As a result, the working groups were able to collect data and information on IWRM issues by using a questionnaire. The collected data and information was then used for water resources planning at the sub-district level, which is an important input for water resources planning at the basin level. The successful establishment of this mechanism, through the sub-district working group, will be expanded across the Nam Kam Basin through the establishment of more sub-district working groups. The working groups established, as part of the piloted project, also coordinated and exchanged with the working group from Lao's Xe Bang Hieng sub-basin on transboundary wetland management exchanged experiences.

2. Exchange of Experiences in Wetland Management

The findings, conclusions, and recommendations of the study and exchange between the Xe Champhone and Nong Han wetlands were derived from the exchange visits and risk undertaken between Lao PDR and Thailand. The result being the identification of six mutually agreed transboundary cooperation and exchange issues, as detailed below.

Water, related resources and environmental management

Both wetlands share similar attributes, e.g., both are wetlands of international significance (Xe Champhone is recognised as a Ramsar site), both are natural reservoirs with man-made water control structures, and both are home to similar flora and fauna species. The major difference is mainly the level of development. On one hand, the Nong Han has been developed substantially and its water resources are well utilised, particularly by the agricultural sector. On the other, Xe Champhone is still largely rich in natural resources with currently limited development of water resources.

In terms of management, both wetland management structures are fragmented due to numerous organisations being involved in their management. For both wetlands, there is not a single entity that integrates management and planning. In the Xe Champhone, there is currently an absence of any regulations, management plan, or responsible agency. The local communities therefore play an important role in the protection of sites of value.

Water resources and environmental management issues have been ranked to identify the highest threats for both Xe Champhone and Nong Han. The major issues for Nong Han is an increase in invasive aquatic plant species, sedimentation, and degradation of the wetlands water quality. The Xe Champhone wetlands is faced with the challenges of deforestation and the draining of the wetlands for agricultural and gardening purposes by local villagers.

Economic exchange

Both wetlands play a vital role in supporting the livelihoods of the local people - who share a similar way of life, namely: tradition, language, and occupation. The main occupations which are dependent on the diversity of wetlands are foraging, rice farming, animal husbandry, and fishing. These activities are undertaken not only for self-subsistence, but also for commercial purposes. Tourism activities are also growing in both areas. Organic farming plays an important role in the Xe Champhone, while chemical fertilisers are extensively used in the Nong Han area, which has resulted in detrimental water quality in the Nong Han.

The issue of “reduction and extinction of indigenous fish species” is ranked as the 4th most serious threat in the Risk Analysis of Nong Han. For the Xe Champhone, the 4th ranked threat is the increasing use of agrochemicals and barriers to fish migration created by irrigation infrastructure which could threaten fisheries production; a lack of water for livestock in the dry season and population growth - which could increase pressure on the wetlands’ natural resources.

Cultural exchange

The people of the two wetlands share a similar culture, tradition, religion, language, and ethnicity. Thus, speaking the same language makes it easier to exchange experiences and ideas, firsthand.

The Nong Han wetlands face two cultural issues for exchange, namely: land-rights issues and a lack of legal protection of water resources and their management, which were both considered to be of a high-impact and high-likelihood. The demarcations of the Nong Han wetlands, in 1941 and 1997, created land conflicts and disputes between the government and the local people. In Lao PDR, there is a Water law and Environmental Protection law, but there is currently weak enforcement, and a lack of awareness of these laws amongst villagers around the wetland.

Joint natural resources utilisation

Water resources of both sites are shared by different activities such as potable water production, agriculture, and fishery. However, in the Nong Han wetland this has been over utilised to rapid development and a subsequent expanding population. The Xe Champhone wetland is less populated and, hence, still rich in natural resources.

In Nong Han, the issue of conflict between joint natural resources utilisation (e.g. water supply is shared between agriculture, household, and effective storage to maintain livelihood of fauna and flora) whilst considered a risk, is of lower concern than other issues such as water pollution. Currently water resources are still adequate to sustain the demand. However, water shortages can occur from time to time during the dry season. In the Xe Champhone, due to an abundance of water and water related resources, there is currently not any conflict between key players of natural resources utilisation.

Data and information exchange and sharing

The Nong Han wetlands has been intensively researched and studied, with much data and information being collected by government agencies on a variety of topics. There has also been research and studies undertaken in the Xe Champhone wetlands, conducted by international organisations such as the IUCN, but the available data and information is still in its infancy.

The issue of the existence of and the sufficiency of data and information of the Nong Han is considered of low concern. In the case of the Houei Mak Mee wetland there was no official data or information available at the beginning of this project, however, during the production of the joint report for this project, socio-economic data on the Houei Mak Mee was collected by the Lao.

Physical impacts of climate change

People in the Nong Han and the Xe Champhone wetland area reported similar experiences from the impacts of climate change, namely: higher temperature in the dry season, more frequent flooding and drought, and a shorter and later rainy season. This was confirmed by an assessment undertaken by the USAID in 2014 that found that both the Sakon Nakhon and the Xe Champhone wetlands are expected to experience an increase in average annual mean temperatures, annual rainfall, and the likelihood of flash flooding. Currently, a series of climate change adaptation pilot studies have been implemented at, Ban Sakeun, Xe Champhone, but none have been implemented in Nong Han area.

The issues of climate change, drought, and flood, in Nong Han are ranked as, 6th, 7th, and 11th threats, respectively, implying a relatively lower risk than other issues. Flood and drought are ranked as 5th and 6th for critical risks within the Xe Champhone, as the wetland is in an area prone to these natural impacts.

3. Exchange of Knowledge on Community Water Management

Knowledge and information sharing on community-based wetland management in the Nam Kam and Xe Bang Hieng river basins was carried out through joint learning activities and continued from the previous outputs. IWRM tools were selected to fit with the purpose of each working area. While Nong Han has been substantially developed already and has over utilised its water resources, particularly in the agriculture sector, the Xe Champhone is still largely rich in natural resources and has a low level of development of water resources. Activities under this output cover the local and transboundary level, as summarised below.

Activity and Output	
Nam Kam	Xe Bang Hieng
Questionnaires completed and data collected in the pilot areas for water resources management (17 pilot areas initially, with another 2 pilot areas were proposed at later state). The collected data was used to prepare the GIS maps to support local water resources management and development the Community Water Resources Management Plan.	The regulation on Markmee Wetland Management authorised by the Champhone District Governor.
The “Community Water Resources Management Plan” was developed, comprising three parts: water (flood, drought, quality), land and resources. The plan is for use at the Sub-district level, based on the community’s requirements, and will be submitted to the responsible government agencies in the area for their consideration and provision of appropriate budget for implementation, where applicable.	The Strategic Plan on Markmee Wetland Management was developed using a participatory approach, with the plan comprising of four parts: <ul style="list-style-type: none"> - The sustainable use of Markmee wetland is occurring and the benefits are distributed fairly to communities in the wetland areas - A database provided to assist with local government for future development and planning

	<ul style="list-style-type: none"> - The restoration of water is sufficient to meet the future needs of current users living in three villages surrounding the reservoir - The ecosystem of Markmee wetland and the health and condition of the basin area can maintain its health and condition and provide habitat to avoid extinction.
	<p>Activities to demarcate the boundary of the Markmee Reservoir were undertaken. This demarcation will provide a mechanism to monitor and evaluate the current and future situation and ecological health of the wetland. Concrete poles were installed to mark each point surrounding the Markmee reservoir area. The boundary marker team composed of representatives from the Natural Resource and Environmental Office, the Forest Resource Unit, the Water Resource Unit, and the Land Uses Unit, combined with assistance from the village authorities and households around the Markmee Reservoir.</p>
<p>The Nam Kam Working Group conducted a capacity building workshop on database as it related to community water resources management. This included the mapping the 17 pilot areas (8 Sub-districts in Sakon Nakhon and 9 Sub-districts in Nakhon Phanom) using GIS to gain a better understanding of community water resources management through a learning by doing process and to obtain experience in data/information collection and analysis. The application of GIS as a management tool for planning was included in the training.</p>	<p>Capacity building and the demonstration of using IWRM tools to development the strategic plan was undertaken with the local villagers. As a result, training was undertaken on how to apply these tools within the Markmee reservoir with the aim of building an understanding of their importance between government officers and targeted villages.</p>
<p>Joint Activity</p>	
<p>A joint GIS training workshop was organised to provide technical skill on utilising GIS as a tool to support community water resources management. Instructors of the workshop were from the Kasetsart University, Sakon Nakon Campus, Thailand. The workshop enabled the presentation of technical information, which contributed to the transboundary project. The participants in the workshop had a wide background including technical staff, planners, decision makers, etc. The training course was therefore designed to be general and more technical where appropriate, through the practically application GIS mapping for the project . As a result, the joint working group members were able to produce GIS maps which showed important community water resources management within their wetlands for the purpose of assisting with management planning.</p>	
<p>The Regional Forum “Lower Mekong Transboundary Cooperation: Joint Actions Joint Solutions” was organised between Lao PDR and Thailand on July 2017 to exchange experiences and knowledge on the transboundary and national water resources management and wetland management. More than 200 participants attend the forum.</p>	

Conclusion

The project was implemented over a period of almost five years, since December 2013 and was finalised in June 2018. This is a long-time process for project implementation based on the available budget and proposed activities. The two working groups focused on finding appropriate solutions for each activity for implementation at the basin and transboundary level. The joint activity between two countries was especially challenging in terms of share data, information and working together. Due to similarity in language (Thai and Lao), the project was able use a common language, as well as English, to communicate and clarify in the joint discussions. This enabled the joint project activity to move forward smoothly.

The project has produced substantial outputs that be sustained into the future, through continued activity at the national and transboundary level. The Nam Kam community water resources development plan can be linked to relevant agencies budget to meet the community's requirements. The Xe Bang Hieng project resulted in the development of a strategic plan on wetland management that can be used to promote the future planning and management of the Markmee Wetland. In terms of the transboundary project, key issues have been identified and these issues can be followed up between the two countries for continued cooperation on wetland management into the future.

Going forward, it is considered important that the relevant Lao and Thai government agencies will continue to collaborate with the established working groups, drawing on their tools and lessons learned to continue to improve the management of wetlands.