

**Cooperation Fund for the Water Sector
Pilot Demonstration Activity
Request Form**

Activity Title: Piloting an Adaptive Management Approach to Implementing IWRM in Yom River Basin	
Proposer (Name, Div/Dept): Mr. Adisak Thongkaimook, Director General, Department of Water Resources, Ministry of Natural Resources and Environment	
Request Date: 12 November 2007	
Country (DMC): Thailand	Region: SERD
Activity Proposed Start Date: January 2008	Activity Proposed Duration: 10 months
Cost Estimate: \$50,000	
Implementing Organization Contact: Thailand Water Resources Association, c/o Department of Water Resources (5th Floor), 180/3 Rama VI Road, Soi 34, Phayathai, Bangkok 10400, Thailand	
Consultant Identified? No	If so, Consultant(s) Contact:
ADB Activity Officer - name, position, division, telephone and e-mail:	Ian W Makin, Senior Water Resources Engineer, Southeast Asia Agriculture, Environment and Natural Resources (SEAE) +632 632 5893, imakin@adb.org

Short Description:

1. Background and Rational:

1. Yom river basin, located in the northern Thailand, has the total catchment area of 23,616 km² with its entire length of 735 km. and consists of 11 sub-basins. The population in 2002 was 2,013,776 (85.27persons/km²) reaching about 2,319,186 by 2020. The river runs down a steep valley from upstream which has narrow plain along the river and gradual slope in downstream¹. Yom river basin is classified in three sections, namely the Upper, Middle and Lower Yom river basin.

2. The water resources problems in the basin include:

- (i) *Water shortage* –water shortages for domestic consumption and agriculture occur during both the wet and dry seasons.
- (ii) *Floods* – severe flooding problems resulting from overflow and long inundation generally occur during rainy season in urban communities and agricultural areas, particularly in the lower Yom river basin.
- (iii) *Environment* – Yom river basin is facing on environmental problems including deterioration of water quality, encroachment in conservation forests for agriculture and shifting cultivation, and degradation of wetlands.

3. Various agencies concerned with water resources have attempted to solve the problems in the basin. The Department of Water Resources of the Ministry of Natural Resources and Environment has formulated an integrated plan on water resources management in Yom river basin. Its objectives are to be a framework for water resources management; presenting an overview of the basin in terms of demand and supply and specifying a master plan for systematic water resources management with an emphasis on related authorities and local

¹ The Yom River falls about 330m over a distance of 735km from an elevation of over 360 masl to about 20 masl at the confluence with the Nan river at Ban Koei Chai in Nakhon Sawan province.

people's participation in water resources management. The Yom River Basin Committee (YRBC) is expected to take a prominent role in the river basin management.

4. The Yom River was selected as a potential pilot basin for ADB support for accelerating the implementation of IWRM approaches under the ADB Water Financing Program because:

- (i) The basin has the least extensively developed water resources infrastructure of the major Chao Phya tributaries. It is the only one of the four tributaries of Chao-Phya River that does not have a large control dam upstream. Other medium and small structures are scattered not inter-connected. However there are plans for development of new water resources infrastructure.
- (ii) The basin is subject to emerging disputes between civil society and promoters of proposed water resources infrastructure projects. Notably there are a number of strong advocacy groups which oppose the proposal of the Royal Irrigation Department (RID) to build the Kaen-Suae Tant dam. These civil society groups have formed a conservation network to protect the forest. In addition there are civil society groups downstream that want action taken to reduce flooding in Sukothai. However although there is potential for water related disputes there is evidence that these two groups want to have better dialogue and exchange of opinions with project promoters in order to solve water problems in the basin.
- (iii) There is a strong perception in the basin that there are too many studies and reports (so called basin plans) commissioned by the concerned agencies while the established basin committee (YRBC) seems not to agree with any of them. The gap between the agencies and the basin committee is probably due to a lack of full participation in the planning process. There is a strong desire by the local representatives to facilitate a review the problems, both up-stream and downstream, by the stakeholders before formulating practical solutions step by step instead of attempting a comprehensive, externally driven, plan.

5. The Yom River therefore presents an opportunity to attempt a new planning and project implementation process in a basin where further development potential exists; where real water resources problems are impacting users directly, and where stakeholders wish to solve problems in participatory ways which expand on the conventional procedures in use in Thailand.

2. Objectives:

6. The objectives of the PDA are to:

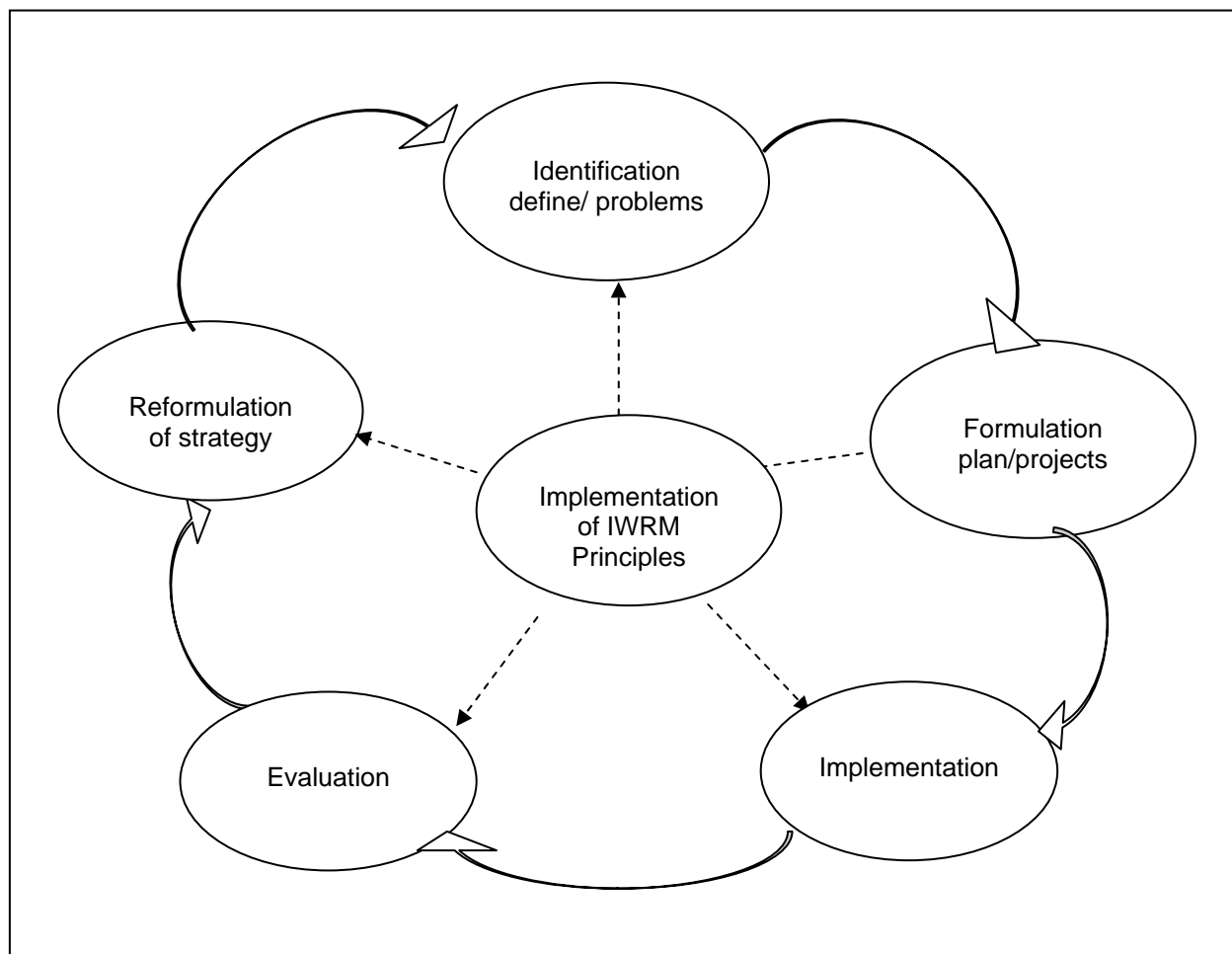
- (i) test the application of adaptive management² approaches to assist local government administrations, including YRBC, and civil society to implement IWRM principles in basin water resources management in the Yom River; and
- (ii) foster a consultative process where the relevant agencies are able to cooperate and pool their resources to support IWRM initiatives sponsored by the basin and sub-basin committees.

² **Adaptive management** (AM), also known as **adaptive resource management** (ARM), is a structured, iterative process of optimal decision making in the face of uncertainty, with an aim to reducing uncertainty over time via system monitoring. In this way, decision making simultaneously maximizes one or more resource objectives and, either passively or actively, accrues information needed to improve future management. AM is often characterized as "learning by doing." See: http://en.wikipedia.org/wiki/Adaptive_Management

3. Scope and location of Work / Description of Activities:

7. The PDA will be implemented by the Yom River Basin Committee Secretariat located in the MONRE branch office in Phrae; under the guidance of the MONRE regional office in Phitsanulok and the head office in Bangkok. Consultants will assist MONRE, the YRBC and its secretariat to implement the project innovative consultation and planning cycles, illustrated in Figure 1

Figure 1 Introducing IWRM concepts to the planning cycle



8. As shown in Figure 1 the PDA will foster an iterative cycle in which individual activities will be implemented with the objective of facilitating an upward spiral of cooperation and achievement. The series of activities make up the well known project cycle; however by introducing IWRM principles at each step of the cycle will improve the planning, management and use of water resources in the basin and overcome the emerging water related disputes. The three main pillars of the IWRM approach that the PDA will promote and facilitate are:

- (i) Providing the enabling environment by strengthening working processes, financial support and assistance in defining setting regulations.
- (ii) Evaluation of the institutional strengths and weaknesses and making amendments through the National Water Resource Committee
- (iii) Providing capacity building in cross-sector; issues such as planning techniques, awareness of environmental aspects, cross-sector linkage between water,

agriculture and forest etc through training and workshop. More importantly capacity building will also include how to capture and apply local know how.

Table 1 Knowledge Matrix

	What Stakeholders Know	What Stakeholders do not Know
What Managers know	A	B
What Managers do not know	C	D

9. Table 1 illustrate a knowledge matrix³ between basin managers and other stakeholders in a basin:

- A = common knowledge,
- B = what is known to basin managers but not to stakeholders,
- C = what is known to stakeholders but not to basin managers,
- D = what is unknown to both stakeholders and basin managers.

10. In adaptive management, basin managers and other stakeholders build up on their common knowledge base. The interaction helps both parties identify knowledge deficiencies. Neither basin managers nor the other stakeholders may be aware of the limits of their knowledge until they communicate. Our perception of what we “know,” that is, what we believe, continually changes. The flow of ideas is not necessarily from D to A; often it is from C or B to D, but such situations present opportunities for all parties to gain new and useful insights to a problem. Sometimes part of a story is in B and part is in C. The complete story is not discovered until stakeholders and managers meet and exchange information. Individuals and groups of stakeholders generally have a poor understanding of development options and planning, while basin managers tend to have a poor understanding of the practical constraints that impinge on the basin and its people, ecosystems and resources. Neither party is aware of its respective knowledge gaps until they talk and work together. The PDA will trail the application of adaptive management to assist the YRBC become an effective learning organization that can provide leadership in the basin.

4. Implementation Schedule, Institutional Management Arrangements, and Proponent Qualifications:

11. The YRBC, MONRE and other stakeholders, including civil society organizations and the media, will be assisted over a 10 month period, January to October 2008, to hold a series of stakeholder meetings aimed at initiating a two way dialogue among stakeholders; promote awareness; analyze the basin issues; and initiate an iterative planning and participatory project development process. The proposed workshops will combine capacity building activities with pragmatic analysis of issues and options in the basin.

12. The YRBC, MONRE and the local provincial and tambon administrations are responsible for implementation of the national framework for flood management and for planning and development of water resources in the basin. YRBC is one of 29 river basin committees established in the major rivers and groups of smaller basins in Thailand responsible for the decentralized management of water resources.

³ Adapted from G.C. Jahn, E.R. Sanchez, and P.G. Cox. 2001, The Quest for Connections: Developing a Research Agenda for Integrated Pest and Nutrient Management. IRRI Discussion Paper 42. Los Banos

5. Expected Results (outputs/outcomes/effects/impacts):

13. The PDA will result in the:

- (i) provision of knowledge on IWRM principles to the local government administrations and civil society
- (ii) creation of opportunities for the basin and sub-basin committees and stakeholders to formulate short term plans based on adaptive management approach and also begin to develop an over all basin plan with independent facilitation.
- (iii) establishment of working procedures for all concerned agencies to support the local development initiatives with technical and financial assistance.
- (iv) development and implementation of monitoring and evaluation processes to measure the performance of the basin organization, provincial and local administration as a basis for determination of future assistance requirements.

14. By the end of the PDA the YRBC will have developed new capacities for basin planning and an expanded network of informed stakeholders able to participate in the future planning and development of the basin.

6. Measurable Performance Indicators:

15. Within the period of the PDA the progress of implementation will be evaluated by the records of participation in the various planned workshops and performance will be measured by assessment of the participants' evaluations of the workshops. The outcome of the pilot project will be assessed by review of the YRBC and its sub-basin committee's capacity to function in an effective manner with the full support from the concerned agencies. The impact will be measured from during the implementation of projects initiated by these committees with a focus on evidence of clear indications that cross-cutting issues of the basin are being addressed and programs of action are underway. The perception of civil society organizations on the inclusiveness of the development process will be an important indicator that the adaptive planning process is having a positive impact.

7. Stakeholders Participation:

16. The government agencies, local government administrations and all stakeholders in Yom river basin will participate in the consultative process to establish an effective dialogue for exchange of viewpoints, to develop a basin strategy plan, and to promote development activities. Full stakeholder participation will be encouraged to ensure the pilot project is followed up and the participants have opportunities to evaluate the project and its outcomes.

8. Scope for Replication/Use in Other DMCs:

17. Department of Water Resources (DWR) will utilize experience developed during the earlier PDA in the Bang Pakong river basin to benefit the stakeholders in the Yom river basin. Based on the Bang Pakong experience the expanded dialogue in the Yom river is expected to serve as a living laboratory of experiences that can be shared with neighboring countries under the Network of Asian River Basin Organizations as well as for other basins organizations in Thailand.

9. Cost Estimate:

<u>Inputs / Expenditure category</u>	<u>Total Costs</u> (in US\$)
1. <u>Civil Works</u> :	Zero
2. <u>Equipment and Supplies</u> Computing and office equipment (YRBC secretariat)	1,500
3. <u>Training, workshops, seminars, public campaigns</u> : Basin Working group Meetings (6 * 1 day * 30 persons at \$25/d); 2 * 2 day * 30 persons @ \$70/d), 10 stakeholder meetings (10 @ \$800 per event); Miscellaneous consultation events (total \$ 1400)	19,500
4. <u>Specialists Services</u> : Participatory water resources management specialist/team leader (National 36 person days over 12 months); IWRM Specialist (50 person days over 12 months)	22,250
5. <u>Project Management</u> : Air travel, per diems, lodging (12 rtn airfare and 24 days), reports etc	3,500
6. <u>Other Inputs</u> :	zero
7. <u>Contingencies (0-10% of total estimated grant fund)</u> : Use of Contingencies requires <u>prior</u> approval from ADB.	3250
Total PDA grant financed	50,000