

Integrated River Basin Planning: Developing a Roadmap for the Pamba River Basin

By agreement between the Government of India and the EU, it was decided that the APSF project should provide assistance to the Government of Kerala by piloting Integrated Water Resources Management (IWRM) in the Pamba River Basin. This would also contribute to the ongoing EU-India policy dialogue on environmental management by producing a replicable model for intra-state river basin planning.

The basis of IWRM is that the various uses of water are interdependent. Additional benefits can be derived when different user groups are consulted in the planning and management of water. Users are likely to apply local self-regulation in relation to issues such as water conservation and catchment protection, which is more effective than only central regulation and surveillance.

Good water governance is the objective of IWRM ensuring wise water governance that contributes to economic development, social equity and environmental sustainability of the society.

The technical assistance provided to the Government of Kerala involved facilitating a process leading from a vision about future development related to water resource use, conservation and protection by means of a 'roadmap'. Roadmaps

are meant to build commitment, analyze gaps and prepare a strategy and action plan. This facilitates mainstreaming water issues in the political economy, focusing on improved allocation of water to different water user groups.

The EU Water Framework Directive (WFD) provides useful elements that the team has used in creating understanding among stakeholders. Like IWRM, the EU WFD is based on the principle of sector integration. However, the issues

Figure 1 Integrated Water Resources Management and linkages to sub-sectors

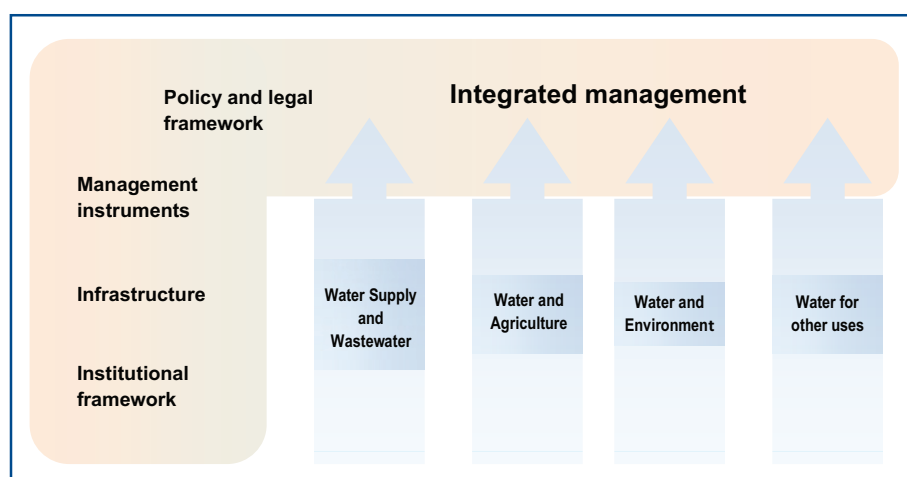


Figure 2 The three pillars of IWRM

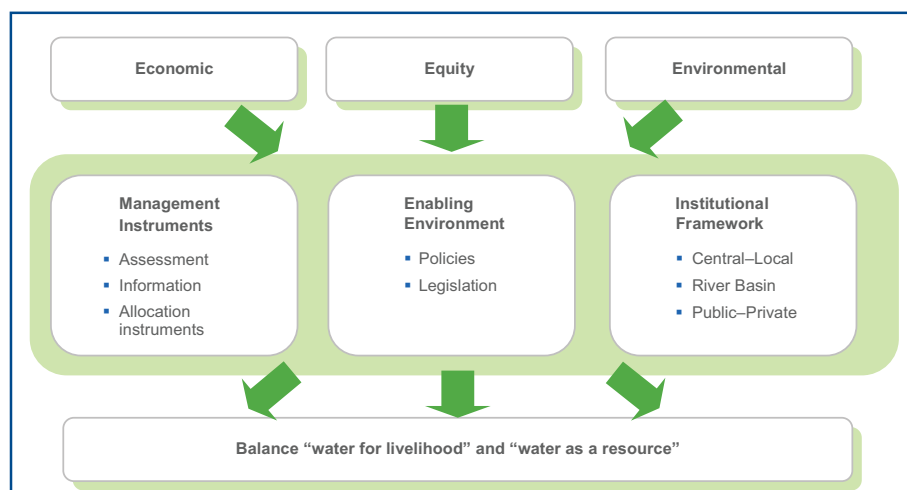
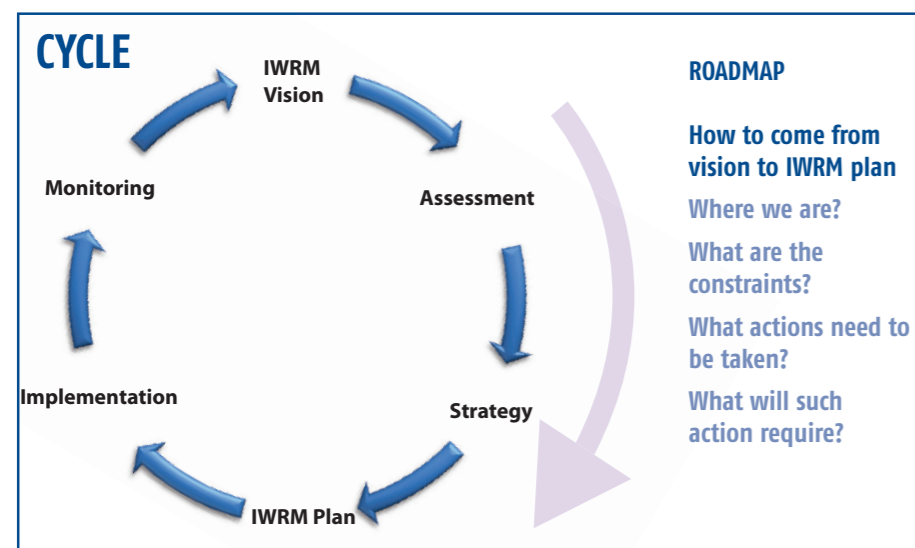


Figure 3 The IWRM process leading to the roadmap



in developing countries are very different: e.g. poverty alleviation is less stressed by the WFD but highly relevant to India. Therefore, the generic term 'IWRM' was found suitable in describing the Pamba River planning approach.

The IWRM roadmap was developed through targeted working sessions, consultations, a broad stakeholder forum, as well as a final dialogue. The focus of the sessions held between December 2009 and October 2010 included:

- Sharing EU experience
- IWRM training and use of planning tools
- Stakeholder consultations
- Identification of management constraints
- Possible actions to improvement

WRIAM tool to identify and prioritize issues

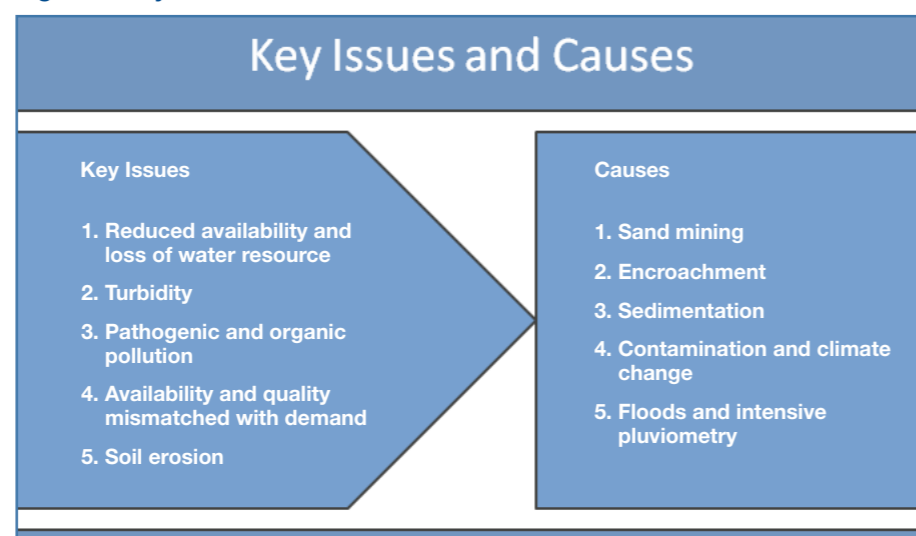
The Water Resources Assessment Method (WRIAM) was applied to prioritize water resources issues for the Pamba River Basin. This method has been

successfully applied in many developing countries. It offers a monitoring system that allows the attribution of reasonably qualified quantitative values, which can be used to measure the effects of actions in the future.

Participants in the workshops represented almost all players at state and field levels, and appraised problem causes based on first-hand experience and ranked these on a five-step scale. The open debate and collective ranking process neutralized individual biases. A total of 104 water resources issues were identified, ranked and prioritized. The tool accounted for the annual pilgrimage in which 45–50 million devotees congregate during four weeks, as well as lack of general awareness, increase of contamination due to urban waste, sand mining, encroachment and sedimentation.

The group identified the following institutional arrangements needed to give effect to IWRM.

Figure 4 Key issues and causes in the Pamba River Basin



- Water resources management based on hydrological boundaries
- Gender balance in decision-making
- Organizational structures at basin and sub-basin levels
- State government to coordinate the water management

The group identified the following management constraints.

- Legislation and policies are not enacted
- Lack of law enforcement
- Existing legal water framework requires adjustment
- Monitoring and evaluation system for water resources management is needed
- Holistic information system on water resources is not available

Three-tier institutional arrangement in the state

Institutions in Kerala operate at three distinct tiers i.e. legislative, executive and operational. The State Water Policy places specific emphasis on decentralized governance in Kerala, which has the following implications for Pamba River Basin planning.

- Micro-watersheds have been considered as the basic unit for managing water
- Appropriate institutional mechanisms and legal measures for sustainable water resource management have been enabled
- Participation of local self-government in planning and implementation is provided for.

Figure 5 Functioning of Kerala State organization at different levels

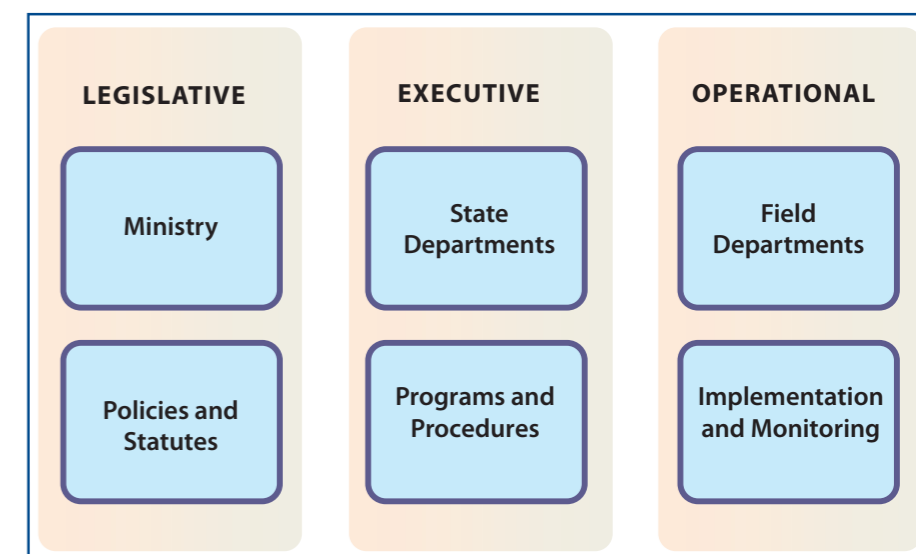
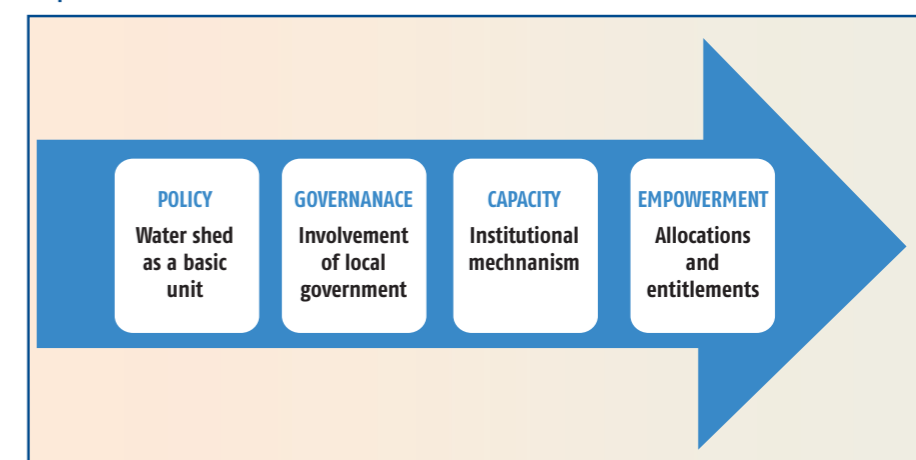


Figure 6 Considerations and steps in the process towards plan implementation



- A well-defined and transparent system for water entitlements has been set up.
- Intent to regulate commercial exploitation and use and transaction of water by private establishments.

Emerging from the process is the recommendation to set up a Pamba River Basin Organization (PRBO) at

the local level. Two institutional options are suggested: set up the PRBO as an extension of the Water Resources Department or as a separate, independent entity, a Special Purpose Vehicle (SPV). The SPV option has been proven to be effective to fast-track the IWRM process elsewhere.

The Pamba IWRM roadmap

The roadmap for the Pamba basin resulted in 12 priority actions validated by the stakeholders.

No	Actions	Objectives
1.	Form an operational body for water re-sources management in Pamba River Basin	Establish a decentralized operational body for management of the Water Resources to assure fulfillment of the objectives stated in the Pamba Basin Authority Act
2.	Capacity building	Strengthen human capacity at all levels (central and de-central) to assure adequate implementation of IWRM
3.	Communication strategy	Establish and maintain clear and regular channels of communication between stakeholders to support the objectives of IWRM, thus providing a platform for stakeholder participation
4.	Enforcement of the existing legal framework	Mitigate the present water resources issues
5.	Adjustment of existing legal water frame-work for Kerala state	Update the existing legal framework to assure compliance with IWRM principles and the Water Policy (2008)



The Sabarimala pilgrimage site at Pamba river

No	Actions	Objectives
6.	Setting-up an information system and a monitoring and evaluation system for water resources management	Improve quality of measurements and reliability of forecasts of water resources availability and quality and develop an information and database system supported by Geographical Information Systems (GIS)
7.	Full assessment of the water resources situation (quantity & quality)	Assess the water quantity and quality based on integration of available data from the departments involved in monitoring
8.	Initiation of elaboration and adoption of an IWRM Action Plan	Develop and adopt an IWRM Action Plan based on stakeholders participation
9.	Elaboration of DPRs (Detailed Project Reports) for implementation of different actions identified	Detail DPRs by corresponding governmental sectors and coordinated by the Pamba Authority to ensure collaboration and communication between departments
10.	Elaboration of financing plan and investment strategies	Elaborate a financing plan for prioritized actions
11.	Implementation of the IWRM Action Plan	Implement prioritized actions in the IWRM plan
12.	Development and monitor indicators to monitor the effects from implementing the IWRM plan	Monitor that the effects from implementing the action plan comply with the vision stated in the Water Policy

With the stakeholders, time lines and possible budget allocations have been agreed. The roadmap is expected to facilitate the next step of detailed action planning including cost estimates of physical works and other actions, while ensuring that the overall objectives of integrated river basin planning are kept in focus.

N K Premachandran, Honourable Minister of Water Resources of the Government of Kerala, calls for action on the roadmap during the final workshop



Some other activities of the EU-India Action Plan Support Facility:

- In-depth analysis on Remediation of Contaminated Sites
- Training workshops on Air Quality Monitoring in Hyderabad, Kolkata, Indore, and Delhi
- Training of trainers on International Legislation for Chemicals Management in Chennai, Nagpur and Lucknow
- Integrated Water Resource management: an action plan for the Pamba river basin was facilitated and a replicable model for intra-state river basin management will be produced.

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For the full document,
please consult the project's
website

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The project period is from December 2007 until June 2011.

The objectives are:

- Improved sector policy analysis and knowledge
- Enhanced mutual understanding and cooperational links and dialogue
- Enhanced regulatory function and improved technical and institutional capacity of the Indian administration
- Enhanced dialogue, information exchange and awareness among civil society's organisations

The areas covered by the project are waste, chemicals, water, air, and climate change.

Project activities to develop the policy dialogue between India and the EU include advisory services, workshops, seminars, training, studies, and capacity building.

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