

# **INTEGRATED WATER RESOURCES MANAGEMENT IN MALAYSIA: AN EFFECTIVE INSTITUTIONAL FRAMEWORK**

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In order to achieve success in water resources development, a holistic approach such as the Integrated Water Resources Management (IWRM) is needed in water resources planning and development in Malaysia. In view of that, the Malaysia government has played an important role through its policies, plans and programmes. For example, the Integrated River Basin Management (subset of IWRM) in water planning and development was introduced in the Ninth Malaysia Plan (2006-2010) and National Physical Plan (2006-2020). Apart from that, the participation of all stakeholders is a prerequisite to attain the goals of IWRM. The basic argument of this paper is that current water resources management framework become a question of developing full participation from various stakeholders. The involvement from the community based organizations (CBOs) and local communities are lacking and do not seem to be aware of their important roles in this matter. Besides, some social and environmental problems exist in the basin such as population growth, high siltation in local streams and non-point sources pollution. However, the major concern is what the future of water resources status is after operation of proposed Pahang-Selangor instate raw water transfer infrastructure in the Pahang River Basin, Malaysia. In order to safeguard sustainability of water resources, Pahang River Basin requires an enabling environment to encourage full participation of all levels of stakeholders to articulate the key issues.

In this study, Pahang River Basin (PRB) was chosen as the study area. It is an important watershed in Malaysia with a total area of 27,000 km<sup>2</sup>, within longitude of 101° 30' E - 103° 30' E, latitude 3° 00' N - 4° 45' N. The climate of PRB generally is hot and wet with an average annual rainfall of between 2,000 - 3,000 mm. The main river in Pahang River Basin is Pahang River, which flows for a length of 440 km and is the longest river in Peninsular Malaysia. According to the national water resources study for Pahang State which was conducted in 1992, the surface water in Pahang River Basin does not only meet the water requirement of the people in Pahang State, but also a water supplier to the other states in Malaysia (EPU, 1992). The Interstate Raw Water Transfer project (Pahang-Selangor ISRWT) as proposed in the Ninth Malaysia Plan (2006-2010) has proposed transfer raw water from Pahang State (Pahang River Basin) to Selangor State, and the Federal Territories of Kuala Lumpur and Putrajaya (Langat River Basin). This interstate raw water transfer infrastructure was expected to be completed on schedule by the middle of 2013. After the anticipated operation of raw water transfer system, total amount of raw water to be transferred is about 4000 million litres per day. Nowadays, total eleven Local Governments are taking controlled of water resources planning and development in Pahang River Basin. It is because the catchment's area spans nine districts in Pahang State which include Maran, Jerantut, Bentong, Lipis, Temerloh, Bera and Cameron Highland, one sub-district of Kuantan, eleven sub-districts of Pekan and also two districts of Negeri Sembilan State which are Jelebu and Kuala Pilah (Malaysia, 1973). However, after the instate raw water has been successfully operated, the water resources demand will be increased. This will not only complicate the management system in term of safeguarding of water resources to meet the water demand for both river basins, and also transboundary issues such as water pricing and ecological footprint.

These issues could not be avoided and the adaptation would be the shifting of sectoral management approach to integrated approach (e.g. integrated water resources management and integrated river basin management).

In Peninsular Malaysia, during the colonial period and first two decades following independence in 1957, water resources deterioration was viewed as an inevitable consequence of development. During this stage, laws were formulated to promote sustainable use of water and other natural resources but were not aimed at associated water issues. These laws fragmented to suit the sectoral management and development issues. The Federal Constitution of Malaysia 1957, demarcated executive, administrative and legislative boundaries, divided between the prevalent three-tier government system, which are Federal, State, and Local Government (municipal and district authorities). The jurisdiction and legislative power in the aspect of water distribution between Federal and State Governments in accordance to the Legislative Lists of Federal Constitution which comprises Federal List, State List and Concurrent List (EPU, 2004). Rivers, lakes, streams and water beneath the surface of the land are generally stated in the State List. There are Federal laws and enactments in Pahang State which are related to water matters and other resources and these include Water and River protection (e.g. Water Act 1920; F.M.S. Silt (Control) Enactment 1922; Drainage Works Act 1954; Street, Drainage and Building Act 1974; Environmental Quality Act 1974, Local Government Act 1976 and Solid Waste Act 2007), Land and Soil (e.g. Mining Enactment 1929; Land Conservation Act 1960; and National Land Code 1965), Biodiversity Protection (e.g. Wild Animals and Birds Protection Ordinance 1955; Wildlife Protection Act 1972; National Parks Act 1980; Forestry Act 1985), Water Services (e.g. Water Act 1920; National Water Services Industry Commission Act 2006; Water Services Industry Act 2006). These laws generally govern the user and the protection of water resources and other related resources. However, overlap functions and enforcements are occurring among State Government agencies and various Local Governments. The problem might further aggravated, as there are different State Governments (Pahang State Government and Selangor State Government), which each has its own needs and political influence to work independently on these laws and identified transboundary issues. For instance, the Environmental Quality Act 1974 (EQA 1974) which was formulated to protect the environment, is enforced through inspection, monitoring and reporting by Department of Environment. However, the Local Government Act 1976 has been used by Local Governments to protect and conserve the water way within local authority areas (Tan, 2007). Thus overlapping in this provision over the matter of water and related resources pollution is occurring between these laws (e.g. EQA 1974 and Local Government Act 1976) which are adopted by Local Governments and Department of Environment in Pahang River Basin.

Over the past decade, there was no single agency at Federal or State level that has been entrusted with responsibility for integrated management and development of water resources. Federal and State Government agencies are implementing water resources management tasks in Malaysia. 'Water' is a matter under the State Government agencies that are responsible on operation and maintenance, and water supply infrastructure development. The Federal government agencies are responsible for research, planning and development of water resources. In order to avoid fragmented water resources planning and development, Malaysian Federal Government has set up the National Water Resources Council (NWRC) in 1999 under the chairmanship of the Malaysian Prime Minister, to take over all function related to water resources to ensure coordination of various stakeholders between Federal and State Government in the management of the river basin. There was a restructuring exercise among ministries in March 2004. Ministry of Natural Resources & Environment (MNRE) was established on 2004 with combination of departments from four other ministries. The purpose of the combination of these departments is to ensure the integration of water resources management. However, the water resources management mainly still are shared by other ministries such as water services monitoring and supervision (Ministry of Water, Energy and Communication); monitoring and safeguarding of water resources and natural resources (Ministry of Natural Resources and Environment); water research and development (Ministry Science, Technology and

Innovation), drinking water quality (Ministry of Health), water planning and development (Local Governments).

The National Water Services Industry Commission Bill and Water Services Industry Act have been amended by Malaysian Parliament in 2006. Water resources are currently under State jurisdiction, under the provisions of National Water Services Commission Act 2006 and Water Services Industry Act 2006 (WSIA), which control of all water services in 13 States of Malaysia was given to the Federal Government (Malaysia, 2006). The rationale for introducing these laws was to ensure quality and reliability where water supplies and sewerage services are concerned. Another apex body, National Water Services Industry Commission (SPAN), has been established under the provision of Water Services Commission Act and employ the WSIA as regulatory tools to regulate water services industry in term of licensing, supervision and monitoring. Nevertheless, State Governments have to corporatise their state water authorities and that the Commission would serve as the central regulatory body.

Although these apex bodies (National Water Resources Council and National Water Services Commission) have been formulated at national level for safeguarding water resources, there is still a lack of a body to regulate and monitor the sustainability of water resources at local level (e.g. in Pahang River Basin and Langat River Basin). The participation of local populations in the design, planning implementation and evaluation of water related projects is encouraged. The present planning process for water resources in both river basins are coherent mechanism where governmental agencies are identified as core stakeholders in water resources management in the area. According to Town and Country Planning Act 1976, private sectors, NGOs and CBOs are encouraged to participate in consultation for water sector development project and provide a collaborative decision making in preliminary water resource planning in national and local development plans. Although, the participation of NGOs and CBOs in planning of water resources is encouraged, the implementation of development plans and projects are still handled by the related ministries and agencies. There is a lack of a provision that allows for active and effective participation of local communities and NGOs in the management of water resources.

Achieving the sustainable development in a river basin is not easy for any national development agendas and this become a challenge when the management approach involves transboundary issue. In order to ensure the integration of upstream and downstream management, the administration boundary should be based on the river basin boundary. The development of multi-stakeholders body that can anticipate and resolve water-related challenges across traditional political boundaries and focus the laws, policies, programs and projects of various communities toward more efficient, integrated solutions (ICWP, 2006). Due to the complexity of transboundary water resources management issue, a comprehensive long term river basin management plan is required to overcome the weaknesses of water resources management. Formulation of river basin plan is required a coordination body (e.g. River Basin Council). However, a new river basin management law should not be excluded to give a clear mandate for formulation of River Basin Council (e.g. Pahang River Basin Council and Langat River Basin Council). The responsibilities of this council are not only to formulate policy, provide guidance, approve and implement water resources and inter-river basin development plans for Pahang State and Selangor State, but also becomes a coordination body at local level where all the key stakeholders come from Federal and State Government agencies, representatives from municipal and district councils, NGOs, CBOs, academia and private sectors. The council functions are to develop and safeguard the water resources of the State in accordance with the provisions of new river basin management law. Integrated approach in water resources management of river basin requires a full commitment from all level stakeholders. Formulation of river basin council will not only ensure the engagement of stakeholders in the planning and development process within the river basin but also relief some transboundary water resources problems.

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