

## **FINANCING in MALAYSIA'S IWRM**

*By*

*SALMAH ZAKARIA<sup>1</sup>*

### **1. Introduction**

- 1.1 Malaysia is within the equatorial zone with a climate that is influenced by the alternating north-east monsoon and the south-west monsoon and is rich in water resources with average annual rainfall of 3 000 mm. The average annual rainfall over the Malaysian land mass amounts to 990 billion m<sup>3</sup>, of which 566 billion m<sup>3</sup> becomes surface runoff, 64 billion m<sup>3</sup> recharges the aquifers and 360 billion m<sup>3</sup> returns to the atmosphere through the process of evapo-transpiration. The groundwater resources in Malaysia, that is the volume of water stored in the aquifers, is estimated at 5000 billion m<sup>3</sup>. Although groundwater accounts for 90 % of the fresh water resources, 97 % of the raw water supply in Malaysia originates from surface water sources.
- 1.2 The population growth, rapid urbanization and industrialization over the past decades, have imposed rapid and growing demands and pressures on the water resources. This land based development, besides contributing to the escalating floods and rising water pollution, have also resulted in the diminishing biodiversity of riverine and riparian areas. Economically, the country is paying a very heavy price to these incidences, both tangibles and intangibles. The water situation in Malaysia has changed from one of relative abundance to one of relative scarcity.
- 1.3 The first National Water Resources Study was completed in 1982. A second National Water Resources Study was completed in March 2000. Amongst the recommendation of this study and other subsequent studies is the need to formulate a Master Plan for Water Resources Management and Development and in the process to reorganize Malaysia's Water Sector.
- 1.4 The Government of Malaysia, through the Economic Planning Unit (EPU) of the Prime Minister's Department, has included in its strategic planning, both in the medium term plan (3<sup>rd</sup> Outline Perspective Plan, 2001 to 2010) and implementation plan (Eight Malaysia Plan, 2001-2005), the need to adopt an integrated and holistic approach in addressing environmental and resource issues, in order to attain sustainable development. This recognizes the need for the formulation of a National Water Policy to ensure adequate and safe drinking water, as well as clean rivers and minimal flooding. The policy is expected to provide the framework for water conservation and management. It is also expected to address several challenges, including managing water resources and floods effectively and efficiently. It is expected to emphasize the need to keep development to a level that is within the carrying capacity of river basins and concurrently therefore, protecting and restoring the environment

<sup>1</sup> Director of Corporate Development, Department of Irrigation and Drainage

- 1.5 Malaysia is signatory to the Johannesburg WSSD declaration of September 2002, which include the commitments to halve by 2015, to the proportion of people unable to reach and afford safe drinking water and who do not have access to basic sanitation. At the WSSD, agreement was reached on launching a program of action to achieve these goals, and this include the development of integrated water resources management and water efficiency plans by 2005.

## **2. Policy and Regulatory Framework**

- 2.1 Malaya gains its independence from the British in 1957 accompanied with a Federal Constitution that provides guidelines for the policy and regulatory framework for all areas including the water sector and its sub-sectors. In 1963 Malaysia was formed, incorporating the nine (9) Malay States, Penang and Malacca in the Peninsula, Singapore, Sabah and Sarawak (Singapore subsequently left in 1965). The Federal Constitution, with all its amendments, remains the main legal instrument guiding the policies and regulatory framework of the country.
- 2.2 With reference to the land and water sectors, the Federal Constitution (revised 1998) laid out the relations between the Federal and State Governments on land and water. In general, land and water are under the state jurisdiction. There are exceptions such, as military, protected areas and others. Areas such as town and country planning, public health, sanitation, drainage, irrigation, rehabilitation of mining land, etc are on both state and federal lists. Shipping, navigation, fisheries, federal works on water supplies, rivers and canals (except those wholly within one state or regulated by an agreement between all states concern), production of waterpower is under federal jurisdiction.
- 2.3 The examples above indicate the complexities of managing the water resources in the country. In the early years of independence, the complexities were minimized as developments have to be very much focus on a sectoral basis due to the development levels within the country and as was prevalent at that time. Development of irrigation, drainage, municipal and industrial water supply, river conservancy were planned and carried out unilaterally by each agency concerned. As the country prospered the issues became more complex and challenging and more water related laws were passed. While some gaps may remain this has also resulted in overlaps. To date Malaysia has an abundance of sectoral-based water laws at both federal and state levels but lack comprehensiveness and integration in its water and river laws.
- 2.4 Generating from the concept of sectoral development is the formation and setting up of various agencies within the water sectors. Over the years numerous new departments were created to regulate, manage and provide services of the various water sectors. In carrying out the duties and responsibilities assigned to them, agencies carry out planning; implement projects; operate, maintain and manage schemes; extract river water; discharge wastes and effluents; issue licenses; formulate rules and regulations; enforce regulations and laws; prosecute; either individually or in co-operation with other agencies. Some agencies are responsible for more than one such function. It is also not unusual to find agencies having technical expertise but no legislative or enforcement powers; and vice-versa. Many agencies suffer from inadequate funding, lack of expertise and shortage of manpower.
- 2.5 As a result in recent years there have been a number of initiatives in the country to help redress the situation

### 3. Recent IWRM Initiatives

3.1 The concept of integrated river basin management was introduced in Malaysia as early as the late 1980s to early 1990s. An International symposium on Management of Rivers for the Future, organized by the Department of Irrigation and Drainage was held in Kuala Lumpur in 1993. Several papers on river planning and management were presented. Of late the acceptance of the IWRM (Integrated Water Resources Management) and IRBM (Integrated River Basin Management) concepts have gain greater momentum.

3.2 In 1997, an inaugural meeting among water related agencies were organized that led to formation of the Malaysian Water Partnership (MyWP). An inaugural 67 members were convened and proceed to articulate the National Water Vision. MyWP (initiated by the DID) is the local chapter of the GWP and its inaugural members include agencies such as EPU (Economic Planning Unit, the Prime Minister's Department), NGOs, the universities and other water bodies/agencies such as MWA (Malaysian Water Association), DID and other interested parties. In terms of technology road mapping (TRM) this vision has been recognized as one of the very few TRM that has been developed for a specific sector in Malaysia. The Malaysian Water Vision 2020 state that:-

*"In support of Vision 2020 (towards achieving developed nation status), Malaysia will conserve and manage its water resources to ensure adequate and safe water for all (including the environment)."*

Factors considered in the formulation of the Malaysian Water Vision include demographic, social, economic, environmental, technological and governance. The Vision was accompanied by a Framework for Action that contained a set of initiatives amongst others include, managing the nation's water resources efficiently and effectively (for both quantity and quality), moving towards integrated basin management, and sustainable development of water resources.

Currently MyWP is in the process of finalizing with EPU, its capacity building initiative. The focus will be to harness the expertise among its partners in awareness and capacity building of IWRM in the country, with funding from the government, through EPU.

3.3 The Third Outline Perspective Plan (OPP3), formulated for the years 2001-2010 have describes development thrusts for a sustainable environmental development as:-

*"A major environmental and natural resource concern includes improving water quality, efficient management of solid waste and toxic and industrial waste, developing a healthy urban environment and the conservation of natural habitats and resources. During the OPP3 period, emphasis will be placed on addressing environmental and resource issues in an integrated and holistic manner. The challenge will be to identify prudent, cost-effective and adaptive management approaches that yield multiple benefits for a more sustainable future. These approaches will, among others, be geared towards addressing the challenges of providing access to clean water, providing adequate food and energy services without environmental degradation, developing healthy urban environments, and conserving critical natural habitats and resources."*

3.4 One of the key strategies of the Eight Malaysia Plan (8MP) for the years 2001-2005, the first phase in the implementation of the OPP3 (2001 to 2010), include 'Adopting an integrated and holistic approach in addressing environmental and resource issues to attain sustainable development.' The Plan recognizes the need for the formulation of a National Water Policy to ensure adequate and safe drinking water, as well as clean rivers and minimal flooding. This policy will provide the framework for water conservation and management. It will also address several challenges, including managing water resources and floods

effectively and efficiently, and emphasizing the need to keep development to a level that is within the carrying capacity of river basins while protecting and restoring the environment.

- 3.5 Following the water crisis of 1997, a National Water Resources Council (NWRC) was set up under the Ministry of Public Works. The existing Water Supply Department, which provides support to the NWRC, is in the process of being converted into the National Water Resources Commission and following 8MP document have completed drafting of the National Water Policy. The general objective of the National Water Policy is to promote national economic development, to enhance regional development, to upgrade environmental quality and improve social well-being by meeting water resources needs and by alleviating water resources problems. In formulating the National Water Policy, two guiding principles were recognized:-

***Water must be managed holistically.** Water resources planners must consider interdependencies among sub-sectors and uses; and they must at the same time conserve aquatic ecosystems and the wider biophysical environment. This requires coherent policies, consistent laws and regulations, collaboration among water sector institutions and carefully targeted government actions.*

***Water must be managed efficiently.** Water is an increasingly scarce resource in several regions in Malaysia and the best available management tools are needed to use it efficiently. In the final analysis, water sector management must be business-like, while observing the standards of integrity and transparency expected by the public at large.*

- 3.6 There are other national policies and plans developed for respective sectors which will have impact on water resources management such as the Industrial Master Plan, the National Agriculture Policy, the National Environmental Policy, the National Energy Policy, the National Forestry Policy and the National Physical Plan. Within each individual agencies and departments are various plans and initiatives that can support Integrated and Sustainable Development for Water Resources (ISDWR) management.

#### **4. Major constraints in achieving IWRM**

- 4.1 Three major constraints in achieving IWRM in Malaysia are finance, awareness and capacity building. Each constraint fits into the other. The government financing structure of the country has traditionally been organized around development projects based on sectors. Proposals for projects, were received both bottoms up from the districts and field, and top down, from the decision makers. Money was and is available, either locally or through loans, to finance various infrastructures and utilities, and the country has developed leaps and bounds. Water was aplenty and problems related to water has only recently emerged and escalated due to the rapid development and urbanization of the country.
- 4.2 The concept of IWRM ensures the optimum use of a country's resources, which include land and water, financial and human resources. The ability to grasp the concept and reorganize planning and financing of development projects around IWRM implementation, will preempt future costly mitigating measures, be it for water supply, sewerage, floods etc. Even within some water-based technical agencies, the concept of IWRM has only been recently widely advocated. One wonders on the individual understanding of IWRM by this technical advisory group to the government. It is expected that their understanding will be initially quite diverse and what is hope is that they will converged rapidly.

- 4.3 It is the policy makers at the central agencies of Economic Planning Unit, State Planning Units and the Treasury that finally formalized all development initiatives. There is therefore the need to convince these agencies and further enhance their understanding of the concept of IWRM, to assist in hastening the implementation of IWRM within Malaysia. Having the political masters articulate and committed in IWRM concept will be a necessity. For this, awareness for the public at large needs to be built. Therefore when one talks about mindset and awareness regarding water in Malaysia, one has to look at it from all perspectives, public-at-large (including the private sectors), NGOs and civil societies, as well as the government or government agencies in the various sub-sectors of water
- 4.4 To implement IWRM, sufficient knowledge and know how in all the relevant fields are required. Capacity building is required in terms both of human resource development, data collection and analysis and information sharing. The need has become more urgent to ensure the agenda and planning of Malaysia's development initiative be fine tuned and push further. Not least is the need to buy in supporters for the concept of Integrated Water Resources Management, of which the knowledge in Malaysia is still fragmented. Focus for capacity building should not only be within the current serving generation of policy makers and implementers but also to future generations. Syllabuses and courses in primary, secondary and tertiary educations should be reviewed and where necessary new courses introduced.
- 4.5 Implementing the processes towards achieving IWRM, whether they are in the forms of implementing development projects, advocacy or capacity building, leads ultimately to financial requirements and financial planning. With adequate knowledge, funds, within the country can be reallocated based on priority hierarchy. The decision of the National Water Resources Council in July 2003, requiring all 189 river basins management units to have a basin master plan will assist in identifying the priority of development initiatives and will help a long way in the process towards achieving IWRM

## **5 Conclusion**

- 5.1 While money will never be enough for everyone, a lot more can be concurrently achieved if the priorities are right. The right priorities can only be made from a position of awareness which will of course require knowledge. This is where networking and information sharing among interested parties with common goals and objectives will help escalate the implementation of IWRM. Within Malaysia, this has already been started, using the web and internet facilities such as in the NALIS (National Land Information System) Project. The Department of Irrigation and Drainage is in its second phase of developing a decision support system (DSS) in its river basin information system (RBIS)
- 5.2 Knowledge on global and regional trends and positive impacts of IWRM implementation, to the policy decision makers and political masters in Malaysia would certainly help a long way in hastening the IWRM process in Malaysia. In certain areas where, knowledge is not yet common, seed money may help to initiate this awareness buildup. In other areas, where, Malaysia has forged forward, the country has always been willing to share its expertise.

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