

## **Current State of Water Environment in Malaysia**

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### **Abstract**

Measure has been taken to protect and conserve the environment to meet the needs and aspirations of country population, particularly with regards to the productive capacity of resources such as land, water and forest. In Malaysia, the quality of the environment with respect to river, marine and ground water quality remained within normal variations. Effort was also intensified to promote sustainable natural resources management practices in relation to land, water and forest.

### **Introduction**

The National Policy on the Environment was adopted in 2002 outlines strategies to propel country's growth trends towards sustainable development which embodies the three pillars; economic development, social development and environment protection. Realizing the importance to facilitate a coordinated and comprehensive approach in managing natural resources and environment, the Ministry of Natural Resources and Environment (NRE) was formed in 2004.

With regards to the water pollution, generally in Malaysia it is caused by point and non-point sources. Point sources comprise sewage treatment plants, manufacturing and agro-based industries as well as animal farms. Non-point sources are made up of diffused sources such as agricultural activities and surface runoffs.

According to the study commissioned by ASEAN Secretariat and AusAID presented in the Report on State of Water Resources Management in ASEAN 2005, the total available internal water resources for Malaysia are 630,000 mcm/year. It is estimated for the year 2025, the total demand for sector such as industry, agriculture, irrigation and domestic is 14,504 mcm compared to 1,622 mcm for the current demand.

The government recognized that water is life itself and without it we cease to exist. Moreover, the demand of water increases and pollution depletes more of our water resources. Therefore, the Ministry has spearheaded initiative to ensure the water environment been properly manage, among others, by reviewing existing laws, restructuring of water-related agencies, drafting a new national policy on water, nationwide public awareness campaigns and also enhance research and development in the field of water resources management.

### **State of Water Quality in Malaysia**

The Department of Environment Malaysia published the annual environmental quality report which is in compliance with the Section 3(1)(i) of the Environmental Quality Act 1974, encompassing water, air, noise and pollution inventory. The state of water quality in Malaysia for the year 2006 is as follows:

(A) River

The main river pollutants are domestic sewage, waste from livestock, farms, runoffs from towns, silt from earthworks, leachate from rubbish dumps, runoffs from farms, litter from riverside squatters and mining waste. Of the total of 146 river basin monitored, 80 were deemed clean, 59 slightly polluted and 7 polluted. This is a marked improvement from the year 2005, when 80 river basins were clean, 51 slightly polluted and 15 polluted. The seven polluted rivers were located in the industrial area which is Pinang and Juru River in Penang; Buloh in Selangor while Danga, Tebrau, Segget and Pasir Gudang in Johor.

Last year, domestic sewerage and discharges from latex-based factory, agro-based industries and manufacturing industries fouled 22 river basins. Domestic sewage and livestock farming waste soiled 41 river basins while earthwork and land clearing turned 42 river basins murky.

(B) Groundwater

National Groundwater Monitoring Programme started in the year 1997 and by 2006, 88 monitoring well had been established at 48 sites in Peninsular Malaysia, 19 wells in Sarawak and 15 wells in Sabah. The site were selected and categorized according to the surrounding land use.

Arsenic levels were high in groundwater near a radioactive waste landfill, solid waste landfills, municipal water supply sources and agricultural areas. Groundwater near waste dumps was also contaminated with iron, lead, manganese, phenol and faecal bacteria.

(C) Marine

It was showed a higher of *Escherichia coli*, mercury and arsenic level last year than a year before. However, levels of suspended solids, oil and grease, copper, lead, cadmium and chromium dropped.

The faecal bacteria *E.coli* was the dominant pollutant in waters of 7 islands which included resort islands, marine parks and protected islands. This is because of the discharge of raw or poorly treated domestic sewage.

Pollution by silt was the worst in the coast of Kedah, Perak and Negeri Sembilan. Oil and grease pollution were mostly seen in Terengganu, Pahang and Negeri Sembilan. *E.coli* levels were highest off the coasts of Perlis, Kedah, Negeri Sembilan and Penang Island. Lead contamination was evident in Terengganu, Kelantan and Perak waters.

### **Issues and Challenges in Managing Water Environment**

Major water related problems are identified in relevance to the marine pollution, river pollution and overexploitation of resources. In term of marine and river pollution, primary resources are mainly from major population areas where the sewage treatment plant has risen 3.2% to 9,060 in 2006 from the previous year. Domestic sewage discharge in the form of treated sewage and partially-treated sewage remain a large contributor of organic pollution.

Both people and industries are believed to contribute pollution menace. Many water environments are polluted as a result of the publics couldn't care less attitude, which leads to the indiscriminate disposal of rubbish or industries not treating their discharge.

Lack of enforcement is another major challenge to ensure the water environment keep on preserve. It plays an important role to ensure publics and industries comply with the law hence it is possible to monitor this source all the time.

## **Remedial Action to Preserve Water Environment**

### **(A) Administrative**

- (i) Cooperation with the local authorities in enhancing enforcement within their jurisdiction;
- (ii) Increased awareness activities with all stakeholders on the need to protect our rivers as a source of water supply;
- (iii) Implementation of the river quality improvement and pollution prevention programme. Under this programme, sources of pollution are identified and action plans formulated to improve the water quality. The action plans would then be implemented by the various agencies within their jurisdiction; and
- (iv) The implementation of the storm water management manual (MASMA) and Sediment and Erosion Control plan for all earthworks activities.

### **(B) Legislative**

#### *Short-term*

Enhance enforcement of the Environment Quality Act 1974 and its regulation which will see legal action being taken on sources that fail to comply with stipulated standards. The related regulation are Environmental Quality (Sewage and Industrial Effluents) Regulations 1979 and Environmental Quality (Prescribe Activity) (Environmental Impact Assessment) Order 1989.

#### *Long-term*

Rivers management in Malaysia is fragmented and placed under different government's department and agencies, each responsible for a distinct component with little or no interaction or coordination amongst them. The arrangement is due to the fact that land, forest and water including river fall within the jurisdiction of States pursuant to the State List, Ninth Schedule of the Federal Constitution. Since there are various agencies involved in one way or another, inevitably, there is overlapping of enforcements between these agencies. A holistic approach is vital to overcome the issues on state-federal relationship and various sector based interest.

The legislature must seriously consider moving towards formulating a comprehensive legislation which will address the concerns.

### **(C) Fiscal Measure**

Apart from the administrative and legislative measure, the government also committed to allocate million hundred of Ringgit in their 5 year development plan for water-related project. For the 9<sup>th</sup> Malaysian Plan (2006-2010), several priority are have been identified among others, are:

- (i) Study on pollution prevention and water quality improvement for several river in Malaysia by the Department of Environment;

- (ii) River Project by the Department of Drainage and Irrigation including rehabilitation, beautification, cleaning and flood mitigation; and
- (iii) Upgrading water supply and sewerage service which is spearhead by the Ministry of Energy, Water and Communication

### **Conclusion**

As the demand for water increases and pollution fast depletes water resources, Malaysia choose to educate ourselves and be a part of the solution instead. In this regards, encounter the problem with solution is the best measure to ensure a sustainable water resources and environment.

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