PHASE V (1996 – 2001)
HYDROLOGY AND WATER RESOURCES DEVELOPMENT IN A VULNERABLE ENVIRONMENT

Small Island Hydrological Study at Tioman Island
(May 2000)

Small Island Hydrological Study at Tioman Island is a research covering environmental parameters include research on groundwater, climate, soil condition, marine ecosystem, geographical information system, water catchment, rainfall variability and few other topics.

Small tropical islands are very vulnerable to natural disasters and the impacts of human activities. Seawater intrusion due to over-pumping of ground water and pollution of surface and groundwater from population centres, agriculture and other activities are increasing problems. In recent years, applied research project on selected small tropical islands have helped to obtain much needed local data and information about the hydrology and water resources. While this has added to our understanding of hydrological process and the water balance of selected islands, there is much scope for further work on small islands.

Tioman island which situated in the southeast of Pahang State is one of the small islands in Malaysia that has been promoted to be a tourism destination. Based on the previous study, the island requires a lot of water for domestic and tourism industry consumption and the demand is expected to rise due to the increasing population and tourism activities. Study on surface water and ground water indicate a good potential for water resources to meet the demand of the future water needs. An intensive study is being carried out to investigate the quantity and quality of water resources in this island.

From the hydrological network established in Tioman Island, it was found that the biggest problem lies in the maintenance of the equipment especially the water level gauges. Aerographic effect seems to be pronounced in the western part of the island.

Tioman Island shows good potential study exploitation on groundwater hydrology due to current demand for water supply scheme. A study of the rainfall fate in Tioman Island indicates a plug flow movement syndrome. Tioman Island requires 1363m3/day of water supply and currently relying on surface water impoundments, constructed along major rivers on the island. Possible solution is discussed to curb the problem.

Marine environments are typically strongly linked to the mixing of water masses sand, in coastal areas they are greatly influenced by rivers and land runoff. A marine area can also be strongly influenced by activities in distant areas including those both on land and at sea. Artificial reefs are constructed mainly to improve the habitat and to enhance the fishery resources especially in the areas where the coral reef has been damaged naturally or due to human activities. Marine parks have to be successful as a tool for coping with the marine resources and environment degradation and depletion, public interpretation, education and awareness about function and importance of Marine Park are needed.