



INSTITUTIONAL SETTING AND PURPOSE

The Department of Mineral and Geoscience Malaysia (JMG), formerly known as the Geological Survey Department, is the lead agency responsible for matters related to groundwater exploration, tube well development and groundwater data inventory in Peninsular Malaysia, Sabah and Sarawak.

JMG actively participates in international cooperation and is committed in fulfilling obligations set by global frameworks such as CCOP Geoinformation Sharing Infrastructure for East and Southeast Asia. JMG is currently involved in the CCOP-GSJ-GSi Groundwater Phase IV project, which mainly focus on

management of groundwater database within CCOP member countries.

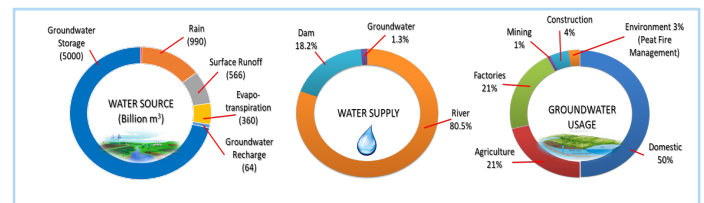


Figure 1 – Groundwater status in Malaysia (National Water Resources Study (NWRS), 2012)

CHARACTERISTICS OF THE NETWORK

Since the beginning of the 5th Malaysia Plan in 1986, 4,758 tube wells (Figure 2) have been developed by JMG for various purposes which benefited 1.5 million people nationwide. JMG has also developed a groundwater database known as HYDROdat and a GIS application known as HydroGIS, for planning, assessing and monitoring activities to safeguard and maintain the quality and potential reserve of groundwater.

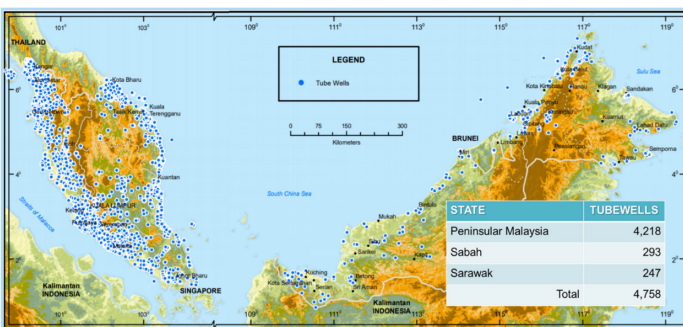


Figure 2 – Tube well location map in Malaysia (JMG HYDROdat, 2018)

Groundwater levels and groundwater quality are monitored at selected wells on a periodic basis, generally twice a year. Field samplings measuring temperature, conductivity and dissolved oxygen are designed for dry (Aug-Oct) and rainy (Jan-Mar)

seasons. Two types of wells are used: cluster type that allows sampling of groundwater at various depths, and individual wells that were mainly exploration wells and later converted to monitoring wells. Data gathered from the field samplings will be keyed into HYDROdat and the well locations will be plotted using HydroGIS.

JMG has outlined several new initiatives in line with requirements of the 12th Malaysia Plan and to resolve existing groundwater issues. The 12th Malaysia Plan is critical to implement water sector transformation through mainstreaming groundwater usage for water security and economic growth. Hence, JMG needs to restructure and update the existing groundwater database and monitoring system. The current groundwater database system (HYDROdat) will be upgraded to enhance its capabilities in groundwater evaluation and risk assessment management.

Concurrent to the upgrading of HYDROdat, JMG is working diligently to set up a National Groundwater Monitoring System (NaGMiS); an integrated groundwater monitoring network collaboration with the relevant local agencies and stakeholders. NaGMiS will provide more groundwater data collection and enhance the data coverage comprehensively for a better and more holistic management of groundwater resources.

Sources

- Department of Mineral and Geoscience Malaysia;
- Feedback from Dept. of Mineral and Geoscience Malaysia (Putrajaya) - received on 10-07-2020; and
- GGMM South East Asia Workshop - 2016.