

## **Rainwater availability assessment for tourism development: a case study of Turtle Islands Park, Sabah**

### **Abstract**

This study mainly focused on the rainwater availability assessment in Turtle Islands Park, Sabah, Malaysia. Consisting of three small islands, this marine park is home to two endangered turtle species – Green and Hawksbills turtles. This special feature of the islands attracts tourists around the world, thus increasing the demand of freshwater supply for tourism development in the marine park. However, due to the shortage of freshwater from the ground due to salinity intrusion, rainwater is seen to be an alternative in fulfilling the freshwater demand. To evaluate the source of freshwater in these islands, information is obtained from the main users of the water source, which are the Sabah Park officers, the approved tour operator on the islands and the security forces. The rainwater tanks available on the islands are calculated to assess the storing capacity of rainwater. The water demand was estimated by multiplying the number of visitors with the average water usage per visitor. With the existing water tanks, this study found that the Turtle Islands Park has the ability to store 414 m<sup>3</sup> of rainwater in Selingaan island, 3.2 m<sup>3</sup> in Gulisaan island, and 102.1 m<sup>3</sup> in Bakkungan Kechil island. However, the monthly water demand of each island exceeds the existing storage tanks, hence it is proposed that the number of rainwater tanks be increased to harvest as much rainfall as possible for the use of the islands' inhabitants.