



DHI CASE STORY

ENCOURAGING DEVELOPMENT, PROTECTING THE ENVIRONMENT

Safeguarding the natural beauty of Sabah's islands

The islands of Sabah, Malaysia are a popular eco-tourism destination. But this same tourism, along with the agricultural industry, has resulted in pollution and overexploitation of natural resources. To combat this, the Sabah State Environmental Protection Department (EPD) asked us to create an integrated management plan for Sabah's islands. We developed a plan designed to maximise the tourism and economic potential of the islands, while also ensuring responsible, sound development. We also provided guidelines that enabled the EPD to assess development proposals and land use policies while protecting the environment. This ensures the preservation of the natural beauty for which Sabah's islands are so well known.

COMBATTING DEVELOPMENT PRESSURES

The islands of Sabah, Malaysia are an attractive destination due to their unique land- and seascapes, rich flora and fauna. The islands also have renewable resources which support the economic, social and ecological needs of residents. However, the ecology of the islands is more sensitive compared to Malaysia's mainland coastlines. They have a limited water supply, as well as isolated and sensitive habitats. In addition, they have all of the environmental problems and challenges of the coastal zone concentrated in a limited land area, such as:

- shoreline erosion
- flooding
- pressure on the coastal marine environment due to human activities

Tourism and agriculture have exerted tremendous developmental pressure on Sabah's islands, including:

- water pollution
- groundwater over-extraction



Bodgaya and Tetagan islands in the Tun Sakaran Marine Park, Semporna

SUMMARY

CLIENT

Sabah State Environmental Protection Department

CHALLENGE

- Increasing overexploitation of the islands' resources due to development pressures
- Inability to maximise tourism potential of islands

SOLUTION

Development of an integrated management plan based on tourism and socioeconomic needs of the islands

VALUE

- Empowerment of authorities to make developmental decisions based on long-term goals
- Promotion of economic development and tourism without hurting the environment
- Preservation of the natural beauty and resources for which Sabah is known

LOCATION / COUNTRY

Sabah, Malaysia

- loss of terrestrial and marine habitats
- waste management issues

The Environment Protection Department (EPD) – under Malaysia’s Ministry of Tourism, Culture and Environment – is responsible for the environmental management and protection of Sabah. The EPD recognised the need for an overall management strategy and guidelines for island development. Both would serve as key tools to manage development pressure on the islands.

In order to do this, the Sabah State EPD asked us to study Sabah’s islands and prepare an integrated management plan. The plan will serve as a cornerstone for all responsible agencies in planning, evaluating, managing, and controlling future development proposal on any of Sabah’s islands.



Fishing nets drying at a fishing village on Libaran Island, east coast of Sabah

DEVELOPING AN INTEGRATED MANAGEMENT PLAN

Sabah has nearly 400 islands. The types of resources and challenges vary from island to island. As such, we had to develop a plan of study that would allow us to create an integrated management plan that covered the unique situations of each. Over the course of the 2.5-year project, we:

- conducted a baseline assessment of sensitive habitats
- analysed socioeconomic activities
- performed hydraulic and water quality modeling

We analysed the status of each island’s environment, issues and threats based on the results. We then developed a multi-criteria assessment matrix as a framework to integrate the information gathered with the values and preferences of stakeholders. This matrix enabled relevant stakeholders to analyse the islands’ ecosystems while taking into account the way people interact with the environment.

We then used the results of the matrix to develop the management objectives of each island in broad terms:

- conservation for islands with abundant natural attractions but high sensitivity to the potential impacts of development
- eco-tourism for islands with many natural attractions and less sensitivity to development
- development of other sectors including agriculture, for islands with sensitive habitats but a lack of natural attractions

Next, we compared the management objectives with the environmental sensitivity of the islands to define specific development strategies. These comparisons were categorised as:

- standard conditions – development of visitor, residential or industrial facilities permitted
- restricted – limited development of facilities or eco-tourism/ further development permitted pending further detailed study
- prohibited – no facilities or amenities permitted

Based on suitability mapping and a comparison of marine environment sensitivity, we also assessed the potential for mariculture around the islands.

SUPPORTING RESPONSIBLE DEVELOPMENT

Sabah’s environmental and planning authorities can now evaluate development proposals and land use policies based on long-term goals. In addition, the management plan specifies requirements related to project design, waste management, and terrestrial and marine habitats monitoring. As such, authorities can hold tourism operations developing on Sabah’s islands to a higher standard than before.

In addition, we recommended further detailed spatial planning for the islands and island clusters, as well as the development of a strategy for implementation of our study. We also advised EPD to strengthen their institutional capacity in identified agencies. This will ensure appropriate management of marine habitats throughout the state, as opposed to focusing only on protected marine areas. This helps ensure the preservation of the natural beauty and resources for which Sabah is known.

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