

SCIENCE FOR THE CONSERVATION OF COASTAL ECOSYSTEM:
CASE STUDY ON THE DEVELOPMENT OF SEAGRASS MANAGEMENT
DEMONSTRATION SITE AT THE EAST BINTAN COASTAL AREA

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This article shows the process in developing a proposal of seagrass management at East Bintan. The East Bintan seagrass bed covers large area and surrounded by several villages, hamlets and resort sites. Therefore, the priority seagrass sites should be selected in order to be able to manage effectively. A set of criteria which include ecological and socio-economic variables were developed as a tool for selecting the seagrass priority sites. A survey of seagrass inventory and its associated organism as well as mapping was conducted in 2004. A socio-economic survey on the community profile of the surrounding villages including threats on the seagrass was also conducted.. The data collected during the survey were used as input in developing the selection criteria. The ecological and socio-economic criteria were divided into several sub-criteria, and each sub-criteria was divided into several indicators. Each sub-criteria and indicators were then weighted and scored. The maximum total amount of weigh and score are 100. Of the eight seagrass sites identified, the three seagrass sites having highest score were chosen as priority to be managed, i.e. Tanjung Berakit. Malang Rapat and Teluk Bakau seagrass beds.. Anthropogenic causes of the threats can be summarized as uncontrolled soil/sand mining on land and seabed, as well as increasing and inappropriately treated waste water discharge from domestic and emerging tourism sources. Further direct threats to the seagrass habitats include destructive fishing methods such as blast fishing and fish poisoning and over-fishing. Without effective and integrated interventions, degradation trends in this regionally significant seagrass habitat and associated biodiversity will accelerate. Causal chain analysis of threats was conducted to identify the root causes of threats. The identified root causes were used to identify interventions which are considered to able to address the threats. The identified interventions were used as basis to develop project components which are then to be divided into sub-components and activities. There are three project components were identified i.e.: (1). Improving the management of seagrass and associated habitats that consist of four sub-components and ten project activities; (2) Awareness raising and capacity building, consisting of four sub-components and 11 project activities; and (3) Promoting environmentally sustainable economic activities that consist of two sub-components and six project activities. A set of indicators of the project impact within 24-36 months period) had been developed to evaluate the success of the project i.e. (1) The area of uncontrolled soil/sand mining on land and seabed reduced by 50%; (2) The amount of solid waste littered on the beach reduced by 20%; (3) At least one community-based seagrass sanctuary established by each of the three selected seagrass sites.