CENTRE FOR COASTAL AND MARINE ENVIRONMENT

RESEARCH PROJECTS AND SUMMARY OF FINDINGS

Prevention of Pollution from Ships through the Adoption of Particularly Sensitive Sea Areas (PSSA) within South-East Asia: Protection of Pulau Kukup (Kukup Island) and Tanjung Piai (Cape Piai)

A Particularly Sensitive Sea Area (PSSA) is defined as an ecologically, economically and scientifically significant area which could be negatively affected by shipping and which requires protection through the action of the International Maritime Organisation (IMO). The concept of the PSSA was originally discussed between 1986 and 1991, with the guidelines for its designation adopted in 1991. This was subsequently revised in 2005. The guidelines specify the process, procedures and criteria for designating a PSSA, stipulate possible vulnerabilities to international shipping and propose measures to protect the area from the impact of shipping. To date, there are 15 areas around the world listed as PSSAs. This study describes the procedures and criteria for designating a PSSA, analyses related issues, and informs on Malaysia's current initiatives on identifying and designating a PSSA in the Straits of Malacca and Singapore under the framework cooperation agreement between IMO and the Norwegian Agency for Development Cooperation (Norad) for the prevention of pollution from ships through the adoption of PSSAs within the East Asian region. The areas identified include Pulau Kukup (Kukup Island) and Tanjung Piai (Cape Piai) National Parks at the southern tip of Peninsular Malaysia. An overview of the environmental significance in these areas, the need to protect the parks from increasing pressures from international shipping in the Straits of Malacca and Singapore, and the proposed Associated Protective Measures (APMs) are further outlined.

The Application of Marine Spatial Planning in the Straits of Malacca

Marine spatial planning (MSP) is becoming increasingly important due to multiple uses and users of the seas. The benefits of MSP have been highlighted in various aspects including for promoting rational use of the sea and improved decision-making, arbitration or balance between competing human activities; mitigation and adaptation to climate change through promotion of efficient use of maritime space and renewable energy; balancing sectoral interests, for sustainable development of the maritime regions; as well as a planning framework for maritime investments. The Malaysian draft national ocean policy for instance recognises the role of MSP for national sea use planning. This paper introduces the MSP as a useful tool for application in Straits of Malacca which is a vital lifeline for the littoral states both for its rich natural living resources and the development of the nation's economy. However, with increasing demand and exploitation of marine resources and ecosystems, and the multitude of economic activities, much pressure is exerted on the coastal and marine resources in the Straits leading to a continued decrease in and possible depletion of these resources. This study introduces a framework, largely based on a project under the European Commission Seventh Framework Programme 2009-2013, for the application of MSP as a feasible mechanism for sea use planning in the Straits.

Conservation and Sustainable Use of Marine Biodiversity in Areas beyond National Jurisdiction: Interest and Options for Malaysia

The Convention on Biological Diversity (CBD) is the principal instrument on the conservation and sustainable use of biodiversity. The jurisdiction covered includes the land and marine areas under the national jurisdiction of States, imposing a number of obligations on its Member States with regards to in-situ conservation i.e., the establishment of protected areas and the conduct of an impact assessment of proposed projects, policies and programmes where there are risks of adverse impacts on biological diversity. The Convention further sets a set of principles through the Nagoya Protocol which concerns access and benefits sharing from the use of genetic resources. The CBD however, does not allow for its Member States, acting singly or together, on establishing marine protected areas (MPAs) beyond their national jurisdiction. Also, the provisions on access and benefit sharing do not apply to genetic material sourced from the high seas. This area however constitutes about 64 % of the world's oceans.

Over recent years, growing concerns at the international level over the adequacy of the existing legal framework for the conservation and sustainable use of biodiversity in areas beyond national jurisdiction have led to discussions under the auspices of the United Nations General Assembly on the possible development of a new international instrument. Gaps exist in the conservation and sustainable use of biodiversity in marine areas beyond national jurisdiction e.g., efforts in establishing area-based management or marine protected areas on the high seas have been undertaken for a single sector (for instance on deep seabed mining) without a global mechanism for the establishment of a more integrated approach. Attempts by regional seas organizations to establish high seas MPAs have not been satisfactory as they are usually with limited participation and voluntary measures. In response to concerns expressed in a range of international discussions on the subject matter, the United Nations General Assembly (UNGA) established the 'biodiversity beyond national jurisdiction) Working Group' in 2004 to discuss the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction and the need for a new international instrument. Most of the work is still in progress on this issue, and hence this study will be undertaking a second phase of the assessment in the first half of 2017 on providing options for Malaysia in line with the agreed international mechanism developed on the area.

Harmful Algal Bloom Management and response in Malaysia: Assessment and Strategies

Harmful Algal Bloom (HABs) management is a concern due to the increasing occurrence of blooms in Malaysian waters. Other than in Sabah, HABs have been reported in both the east and west coasts of peninsular Malaysia. The increase in coastal utilisation leading to eutrophication, economic losses to aquaculture farmers, and subsequent concerns on human health from consuming affected fish and mollusc are some of the major threats. Thus it is important to emphasise the need for prevention, management and mitigation strategies i.e., site selection, national monitoring programmes by relevant authorities, and proper management for cage movement to minimise adverse impacts. Though it could be costly to have advanced HABs monitoring system as this would require high technology instrument to be put into place, it is the best way forward towards reducing economic losses to the local fishery and aquaculture industries and operators. Proper management and response on the occurrence of HABs events is also crucial to ensure the safety of seafood products that are exported and consumed locally. This study suggests for the adoption of an effective water quality data to keep track of the occurrence of blooming seasons for better monitoring of the

areas affected and possible future occurrence areas, as a measure of management and response of blooms in the local waters.

Conservation of Threatened Coastal and Marine Ecosystems in Malaysia: Issues, Challenges, and the Way Forward

Mangroves, coral reefs, and seagrass are important components of a coastal and marine ecosystem in Malaysia. Although each of the components provides its own ecological functions and services, they rely and support one another. Conservation of these ecosystems has been implemented since many years ago in this country. There are issues and challenges however in conservation and management of these ecosystems. Therefore, this study identifies those issues and challenges in the conservation of coastal and marine ecosystems in Malaysia through reports of previous studies and communication with relevant stakeholders. As a way forward, a score card system is recommended as a tool to assess effectiveness of conservation of coastal and marine ecosystems in the country.