



# Lessons learnt from TRISMADES project for dugong-seagrass conservation in Indonesia

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## *BACKGROUND: THE SETTING AND HISTORY*

Marine Conservation Program in Indonesia has transformed in the past 40 years. Previously the nation suffered authoritarian regulations, minimal infrastructures, poverty and other challenges; thus neglecting enormous potentials of its marine resources. Today, despite continuous struggle to end poverty, Indonesia rises as regional lead voice in marine conservation and maritime development through Coral Triangle Initiative (CTI), Indian Ocean Rim Association (IORA), and other types of projects. The engagement of various marine biodiversity and conservation projects by the Government of Indonesia (GOI) also showing progress. Mere financial assistance is changed into technical assistance, capacity building, and ideas to foster innovation, mutual benefit, and sustainable livelihood.

Similar approach also reflected in dugong and seagrass conservation. Often times, the effort to save population and its feeding habitats was forgotten in between programs to conserve mangroves and coral reefs. In the last 3 decades, dugong-seagrass conservation has yet to achieve significant progress. Among UNEP/GEF-funded projects, TRISMADES (Trikora Seagrass Management Demonstration Sites) in Bintan is regarded as the first marine conservation project specifically designed for dugong and seagrass habitat. Long before TRISMADES, Bintan was one project site for the implementation of UNEP/GEF project on Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand and COREMAP (Coral Reef Management Project).

This paper highlights lessons learned from the implementation of Trikora Seagrass Management Demonstration Sites in 2008-2010, several wise practices applied independently by the Regency Government afterwards, and what are the strategic improvements need to be made to ascertain Bintan as national center of excellence for dugong and seagrass conservation, also for the upcoming implementation of Dugong and Seagrass Conservation Project phase 3 (DSCP-ID3) in 2017 and 2018.

### *THE PROJECT: TRISMADES (2007-2010)*

TRISMADES was implemented in 2007-2010 by Research Centre for Oceanography of the Indonesian Institute for Sciences (P2O-LIPI) with the financial support of the UNEP/GEF and research fund administered by P2O-LIPI provided by the Government of Indonesia. The selection of East Bintan as one demonstration site was related with previous UNEP-GEF project “Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand” in 2002. In general the project was directed to develop integrated management scheme for seagrass beds and other connecting ecosystems. The aim of TRISMADES was to develop effective and measureable scheme in reducing environmental stress to seagrass beds and coastal resources at Trikora Beach, Bintan. Therefore, scopes of TRISMADES project were directed to bring benefit to ecosystem, for fish resources and other marine biota, also to local communities.

The outcomes of TRISMADES for implementation year 1 were, listed here below, related with the management improvement of seagrass beds and adjacent ecosystems:

1. EBCoMBO (East Bintan collaborative management board) was established as platform for coordination and collaboration between relevant stakeholders in seagrass and coastal resources management (look up for Figure 3).
2. EBCRMP (East Bintan Coastal Resource Management Plan) was developed EBCRMP (East Bintan Coastal Resource Management Plan) was specifically developed and adopted by appropriate regulations.
3. Community Based-Seagrass Bed Management (RP2L-BM) was published.

4. Scientific data and information from ecological and social-economic research were transformed to improve coastal area management and legal framework for coastal resource conservation.

The outcomes of TRISMADES for implementation year 2 were related with capacity building and clearing house development, which are exemplified below:

1. Establishment of clearing house for information dissemination and community training.
2. Community awareness campaign was implemented.
3. Community training program was developed and ready for implementation.
4. Establishment of platform for sharing information at national and regional level, on seagrass management and other coastal ecosystem management .
5. Active participation in regional meeting and related scientific events.

The outcomes of TRISMADES for implementation year 3 were related with increasing economic activities in a sustainable and environmentally friendly manners:

1. Adoption of sustainable tourism plan by the local government, alongwith monitoring guidelines and reporting.
2. Pilot project on developing alternative income generating activity for fisher community who are very poor and practicing destructive fishing methods.

## *TRISMADES ACHIEVEMENTS*

Over the course of 3 years project implementation, TRISMADES had succeed in:

- a. Developed integrated coastal management scheme, with particular focus on protecting seagrass habitat with minimum area of 1500 hectares;
- b. Area of illegal sand mining at sea and on land was reduced by 50%;
- c. Land-based wastes at coastal areas were reduced by 20%;
- d. Incidences of destructive fishing practices were reduced by 50%;
- e. Community-based seagrass sanctuary was established at least at one village, among three pilot sites. (note: by 2010, four sites of CB-seagrass sanctuary and associated village decree were established in Teluk Bakau, Berakit, Malang Rapat, and Pengudang).

## *PROGRESS UNTIL PRESENT DAY (2010-2017)*

During TRISMADES implementation, P2O-LIPI have worked by involving relevant stakeholders in developing seagrass (and other coastal) ecosystem management also dugong conservation, thus major partners identified are District Government of Bintan and local communities at three villages: Berakit, Malang Rapat, and Teluk Bakau. In 2011-2012, follow up TRISMADES activities are taken place, namely: final reporting and project evaluation by external examiner.

TRISMADES had proposed tourism sectors as incentive for developing seagrass management and marine conservation in Bintan. Thus, marine tourism in Bintan has developed rapidly and listed as major tourist destination at national level. District Government of Bintan develop parallel program in continuing the promotion of marine conservation program through various infrastructure development related with tourism and sites of attraction, from building dugong statues at Trikora beach to the most recent one was Gonggong House (Figure 1), named after one edible sea snail species harvested from seagrass beds (*Laevistrombus canarium*). Branding and campaign activities using dugong by the district government was exemplified during regional election in 2015 (Figure 1) to generate public participation in choosing ballot for state representatives and Head of District Bintan...



Figure 1. Gonggong house in Tanjung Pinang (left) and dugong as mascot for regional election in 2015 (right) as examples of infrastructure and branding projects by local government in promoting the conservation of marine resources in Bintan.

In addition, District Bureau of Marine Affairs and Fisheries had carried on further implementation of dugong-seagrass and marine conservation through mapping of dugong distribution (Figure 2); stock inventory of marine resources associated with seagrass habitat; also conservation campaign at public schools (Figure 2), strategic public areas, and radio. Main conservation message employed was the importance of dugong and seagrass ecosystem to support people's welfare; thus District Bureau also worked on developing inventory of important resources related with small-scale fisheries (sea horses, dog conches/gonggong, sea cucumbers, blue swimming crabs, horseshoe crabs, etc.).

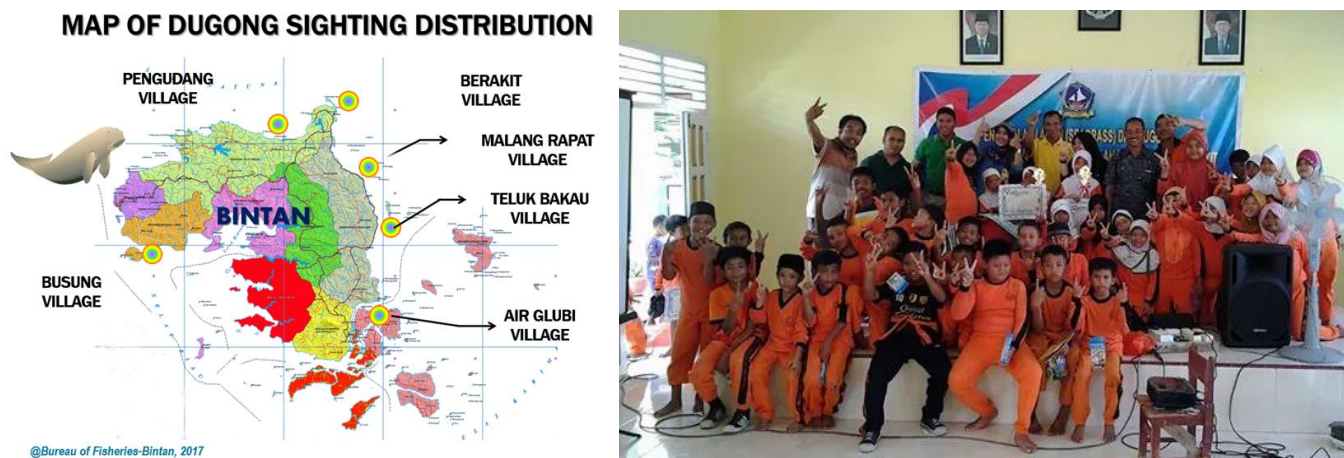


Figure 2. Several activities by conducted by District Government of Bintan in supporting dugong and seagrass conservation, after TRISMADES project ends.

Dugong distribution map (Figure 2) was developed from stranding events, with recent updated information from field studies on dugong feeding tracks and DSCP-funded research in 2014-2016. Working with IPB in 2015, Bintan government also have updated supporting maps for proposing regional marine conservation area in the district by incorporating key seagrass habitat for dugong. Due to the implementation of Indonesian Law No. 23/2014, starting from year 2016 District of Bintan can no longer manage marine conservation program on protected species and its waters. Marine affairs, including conservation programs, are managed by provincial government and district government only manages fisheries program. Thus, urgent agenda on harmonizing regulation and policy is required to further disseminate dugong and seagrass conservation program in the area.

Other environmental problems affecting the use of coastal resources and marine conservation programs are frequent oil pollution along the coasts of Bintan and surrounding islands. Damages caused by oil pollution were affecting small-scale fisheries, tourism activities, also degrading coastal and marine ecosystem qualities.

### *WHAT NEEDS TO BE DONE BY DSCP-ID3*

Bintan experience from TRISMADES highlights the importance of tourism development to support dugong and seagrass conservation, and other marine conservation program, Legacy from the project has support the capacity of regional officers working at district government to develop continuing program and collaborate closely between different bureaus (tourisms, education, fisheries, etc.) to further resonate the importance of sustain-functioning of coastal ecosystem and keeping protected species in its habitat to regional development of maritime sectors. There are two main project outputs for DSCP-ID3, namely: (2.1) Management and incentive mechanisms and tools for sustainable fisheries – pilot and capacity building (local community and government), and (4.1) Policy, planning and regulatory gaps reviewed (conservation of dugongs and seagrass ecosystems) and recommendations developed.

To support DSCP-ID3 project output 2.1, previous works from Bogor Agricultural University (FPIK-IPB) with local university in relation to sustainable fisheries and dugong conservation since 2013 can be translated into another sets of lessons learnt. Therefore, further activities will be focused on transforming data and information into lessons and management scheme supporting capacity building of fisheries governance in Bintan and the economic growth of small-scale fisher community. From the last Focus Group Discussion meeting in May 2017, several private tourism companies have expressed their willingness to support dugong and seagrass conservation project in Bintan. Therefore, other activity within project output 2.1, work on integrating seagrass and marine biodiversity into CSR policies of private sectors in Bintan, will be co-developed and tested during the last period of project implementation.

Project management structure (Figure 3) applied during TRISMADES implementation can serve as good example of parallel works at community and district government at local level within short

period of implementation, also with private sectors. However, the structure needs improvement by incorporating provincial government in relation of regional autonomy regulation on marine conservation area and promotion of local university involvement during project implementation. Through several national events in 2016-2017, DSCP-ID has initiated collaboration potential for ID3 implementation with local universities in Kotawaringin Barat (University of Antakusuma), Alor (Muhammadiyah University of Alor), Tolitoli (College of Marine Fisheries Palu), and Bintan (Maritime University of Raja Ali Haji).

For DSCP-ID3 project output 4.1, previous conservation area designated by TRISMADES and

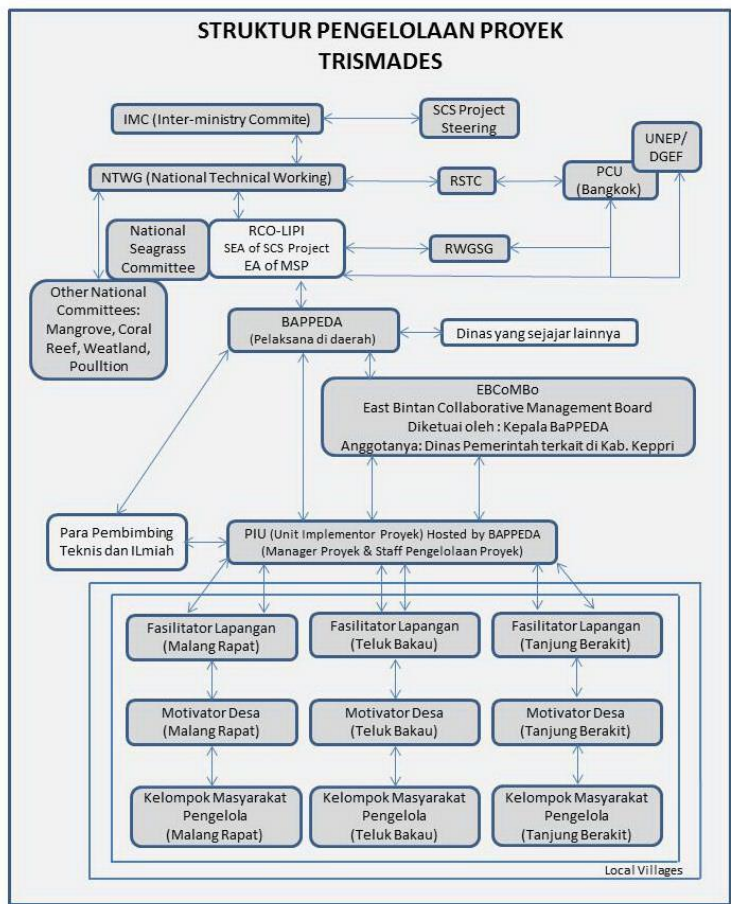


Figure 3. Project implementation structure at sites, lessons from TRISMADES

district government shall be reviewed and discussed with provincial government to identify policy gaps, planning gaps, and regulation gaps. Thus recommendation and full documents required to fully establish marine protected area inclusive to sustain dugong and seagrass conservation also to support tourisms development and the livelihood of coastal communities shall be collated. Each ID3 sites (Alor, Kotawaringin Barat, and Tolitoli) has uniqueness and different readiness in conducting conservation program on dugong and seagrass ecosystem. TRISMADES project and further studies applied in Bintan may support both incentive mechanisms on tourism development and sustainable small-scale fisheries management.