Marine Protected Area Management in Indonesia: towards an effective management

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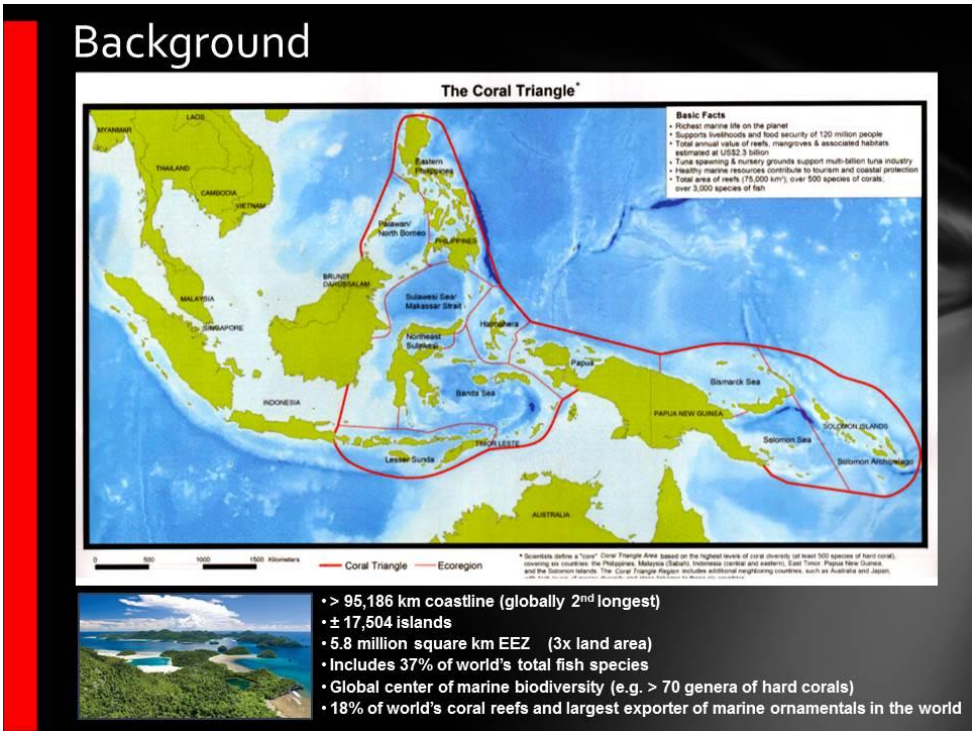
Indonesia is the world's largest archipelagic state, with 17,540 islands both big and small, the coastline stretches over 95000 kilometres, comprise an abundance of marine diversity, Indonesia shows significant natural resource potential, particularly in coastal and small islands areas. Such areas embody complete ecosystems that serve important functions as habitats, feeding, nesting, and spawning grounds. About 55 percent of existing fisheries production comes from coastal areas, particularly from seagrass beds, mangroves, coral reefs, lagoons, and estuaries. Thanks to more than 2,000 fish species and 500 coral species, Indonesia is known as the Coral Triangle Center. The Coral Triangle, cover around 75,000 sq.km. areas of six countries: Indonesia, the Philippines, Malaysia, PNG, Solomon Islands, and Timor Leste, as home more than 500 coral species, 3000 fish, support about 120 million coastal communities. The Coral Triangle Initiative was declared during the APEC meeting in Sydney, September 9, 2007. A coral reef ecosystem does not only function as a marine biota, but also functions as carbon absorber, ocean wave-breaker, and fish production areas that are incredibly important to people's prosperity, especially those who live in coastal and small island areas, and more generally for the people of Indonesia.



Unfortunately, environmentally destructive fishing practices, improper waste disposal, sand mining, and other damaging human activities have threatened the sustainability of ecosystem resources, specifically coastal and small island ecosystems. In addition to this, sub-system fishing pattern levels,

non-fishermen oriented fishing result, value chain system, and low educational background have led to unsatisfactory living standards of coastal people. The number of Indonesia's poor fishermen reached 7.87 million people (2011), from approximately 10,600 fisherman villages across many coastal areas in Indonesia. This represents 25.14 percent of Indonesia's total number of poor people, which reached 31.02 million people across the archipelago. We realize that the management of coastal and small island resources must comply with protection and preservation efforts, to ensure that fisheries resources are maintained for the prosperity of the current generation as well as for those of the future. Law No. 27 of 2007, and Regulation of the Minister of Marine Affairs and Fisheries No. Per.17/MEN/2008, mandate and regulate how conservation should best operate in these areas to achieve this objective. In his speech at the 2009 World Ocean Conference (WOC) in Manado, President Susilo Bambang Yudhoyono declared Indonesia's commitment to reach 20 million ha of MPAs/KKP3Ks by 2020. The Ministry of Marine Affairs and Fisheries continues to strive to realize this target in order to maintain the sustainability of marine potential in Indonesia.

Conservation issues have become a global concern and strategic issues in many countries, including Indonesia. Abundant in resource potential, Indonesia is required to be able to manage its marine and fisheries resources effectively and sustainably for the prosperity of its people. Fisheries resource conservation may be defined as an effort to protect, preserve, and utilize fisheries resources, including the ecosystem, species and genes to assure their existence, supply and sustainability by preserving and increasing the quality of the value and variety of fish resources. We realize that the management of coastal and small island resources must comply with protection and preservation efforts, to ensure that fisheries resources are maintained for the prosperity of the current generation as well as for those of the future. Law No. 27 of 2007, and Regulation of the Minister of Marine Affairs and Fisheries No.

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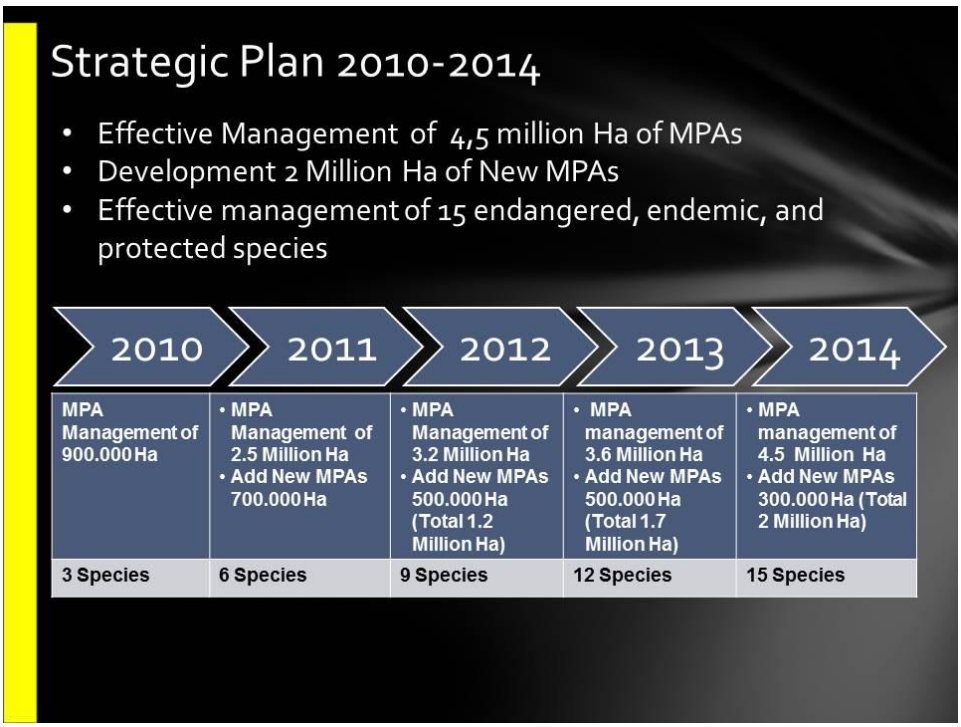
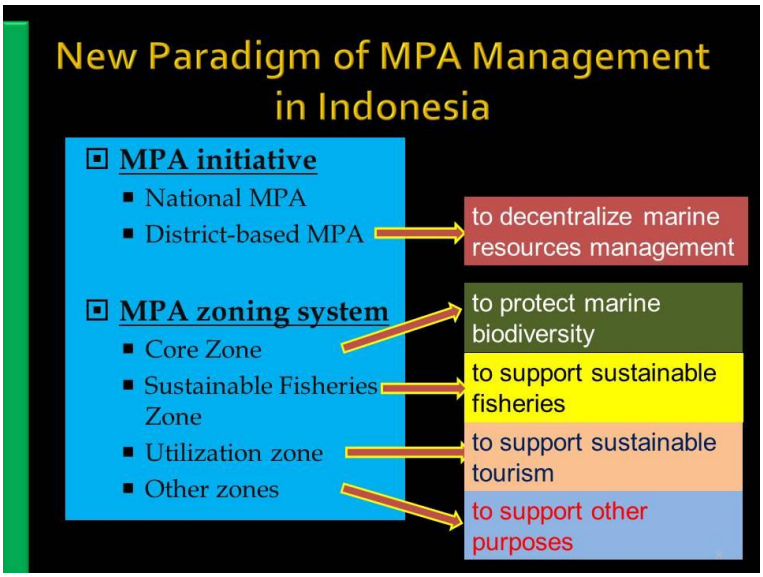


In term of the Paradigm of Marine Protected Area (MPA) management, I would like to explain to you that our definition of MPA is little bit difference. Based on Government Regulation No. 60/2007 on Fishery Resources Conservation, An MPA refers to a water/marine area, which is protected and managed through zoning system, to achieve sustainable management of fishery resources and its environment. There are four zones in our MPA which are core zone, utilization zone, sustainable fisheries zone, and other zone. So, in this paradigm we could have to categories, at least. **The First**, is MPA initiative, we have developed national MPA and district-based MPA. The main objective on this policy is to decentralize marine resources management. **The second,** is MPA zoning system. Based on the definition an MPA is not only about protecting and preserving marine biodiversity, but also to support sustainable fisheries, marine ecotourism, and other purposes to support coastal community

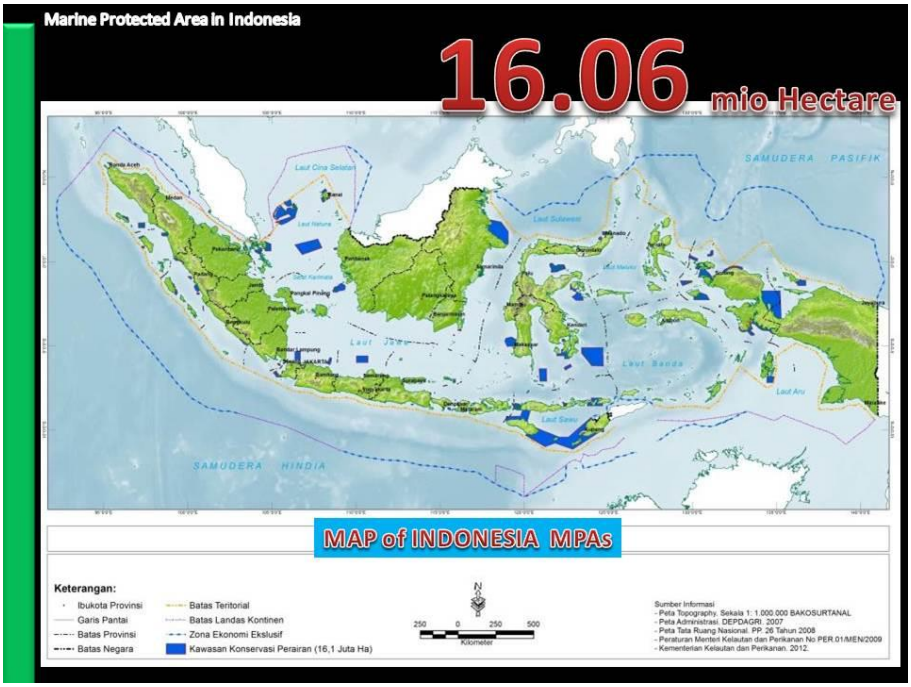
welfare. There are some activities can be done in the MPA, such as research, education, fishing, mariculture, tourism, infrastructure and rehabilitation. For example, research and education can be implemented in all zones, and in sustainable fisheries zone, all activities are allowed. In the utilization zone, it is mostly for tourism activities and includes as no take zone, so fishing and mariculture are prohibited in this zone. The other zone is used for rehabilitation activities.



Currently as of 2013, the total size of MPA, is 16 Million Hectares. This commitment certainly must be accompanied by efforts to effectively manage those areas so they able to provide benefits to the stakeholders, particularly local communities, and at the same time continue conserving the biodiversity resources.

INDONESIA MARINE PROTECTED AREAS (July 2012)

No	Category	Numbers	Size (Ha)
A	**Initiated by MOF**	**32**	**4,694,947.55**
1	Marine National Parks	7	4,043,541.30
2	Marine Recreational Parks	14	491,248.00
3	Marine Wildlife Reserves	5	5,678.25
4	Marine Nature Reserves	6	154,480.00
B	**Initiated by MMAF**	**76**	**11,089,181.97**
1	Marine National Parks	1	3,521,130.01
2	Marine Nature Reserves	3	445,630.00
3	Marine Recreational Parks	6	1,541,040.20
4	District-based MPAs	66	5,581,381.76
	TOTAL	**108**	**15,784,129.52**



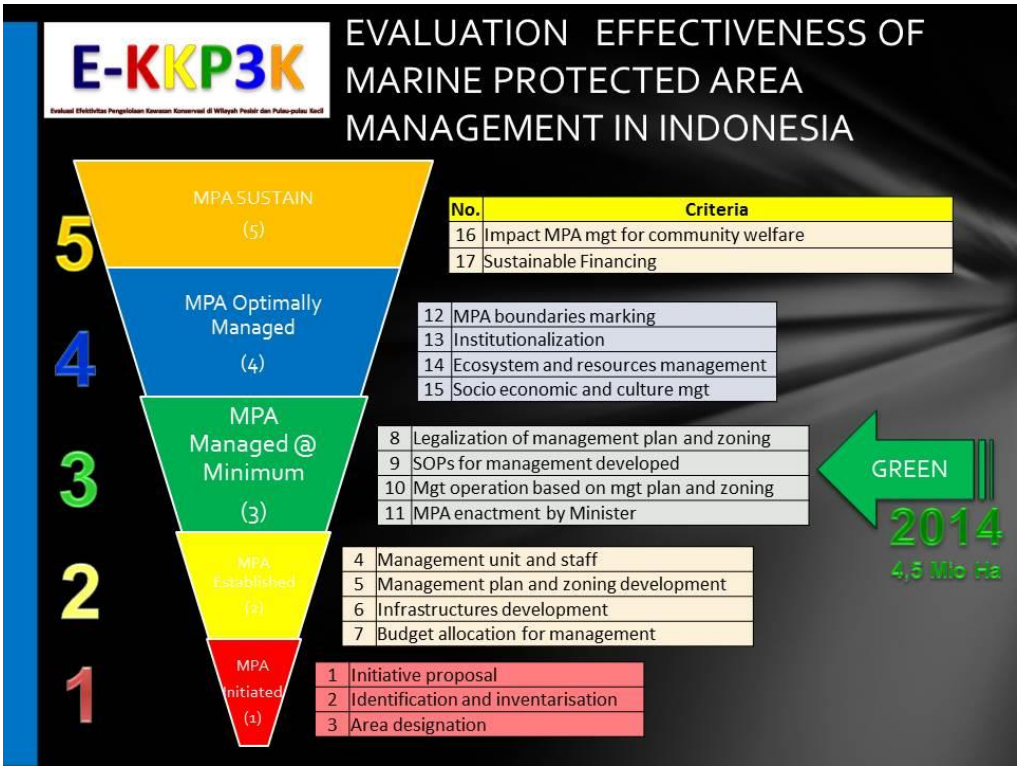
An initiative towards achieving the target of effective management, we have developed Technical Guidelines for Evaluating the Management Effectiveness of Marine, Coasts and Small Islands Conservation Areas (known as E-KKP3K (E-MPA) guideline). This guideline is the result of the adoption and combination of a number of internationally accepted methods for evaluating the effectiveness of the management of conservation, such as

- 'Guidebook of Natural and Social Indicators for Evaluating Marine Protected Area Management Effectiveness',
- 'Score Card to Assess Progress in Achieving Management Effectiveness Goals for Marine Protected Areas',
- 'Guide for Improving Marine Protected Area Management Effectiveness in Indonesia', and others.

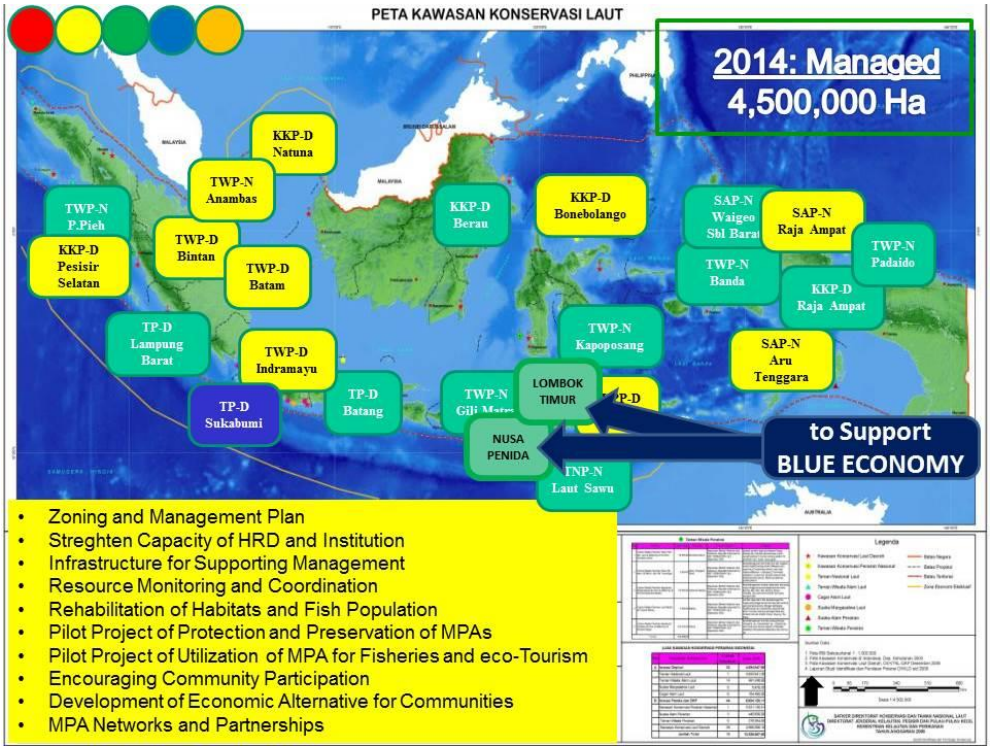
E-KKP3K (E-MPA) contains the procedures or guidelines for evaluating the management effectiveness and sustainability of MPA. This manual is expected to be used by policy makers as an instrument for evaluating the performance of marine, coast and small islands conservation areas in Indonesia, and is a tool for establishing development priorities for the effective management of MPAs. The guideline is used by the Ministry of Marine Affairs and Fisheries to evaluate the effectiveness of the management of marine conservation areas across Indonesia. The guideline is also used for self-evaluation of the effectiveness of management of a particular marine conservation area, and to assist MPA manager or decision makers to further plan to improve management performance of the MPAs. E-KKP3K (E-MPA) is categorize into five stages, based on the conservation management effectiveness parameters, these are:

- level/stage 1 (red) – the area has been reserved;
- stage 2 (yellow) – level/stage 1 plus management agency formed;
- level/stage 3 (green) – stage 2 plus institutional strengthening, infrastructure and core management;

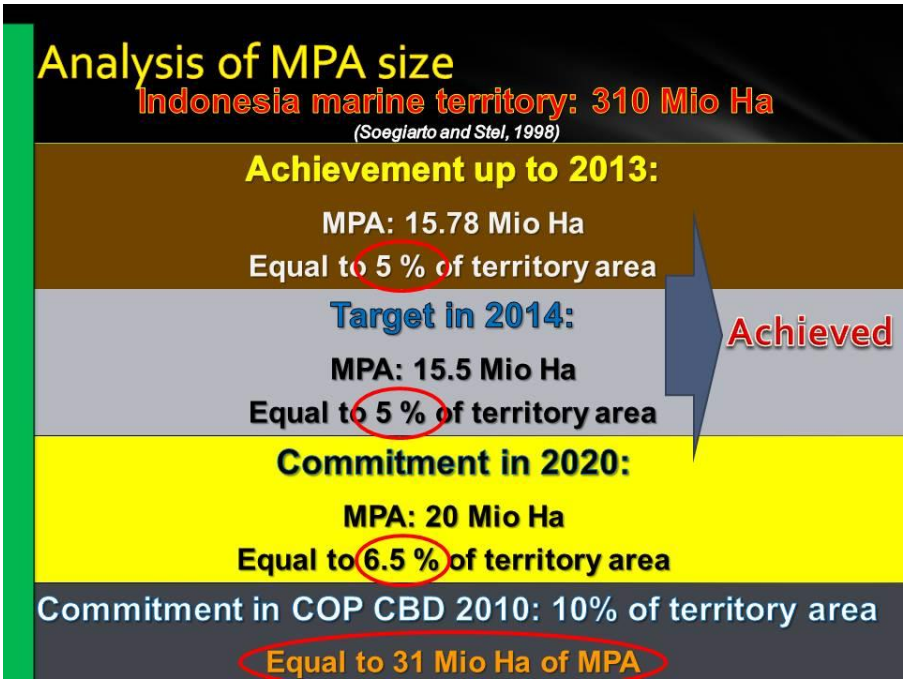
- level/stage 4 (blue) – stage 3 plus optimal management of conservation area;
- and level/stage 5 (gold) – stage 4 plus sustainable funding mechanism (decree, contribution from non-governmental organizations). These levels/Stages are determined by 17 (seventeen) criteria, which are elucidated in 74 (seventy-four) questions. These parameters are used in the process of evaluating effectiveness to assess the status of the area's reserves, institutions, management and zoning plans, and infrastructure. The scope of the evaluation covers management, conservation/resources, and socio-economic-cultural aspects that are relevant to conservation area management.



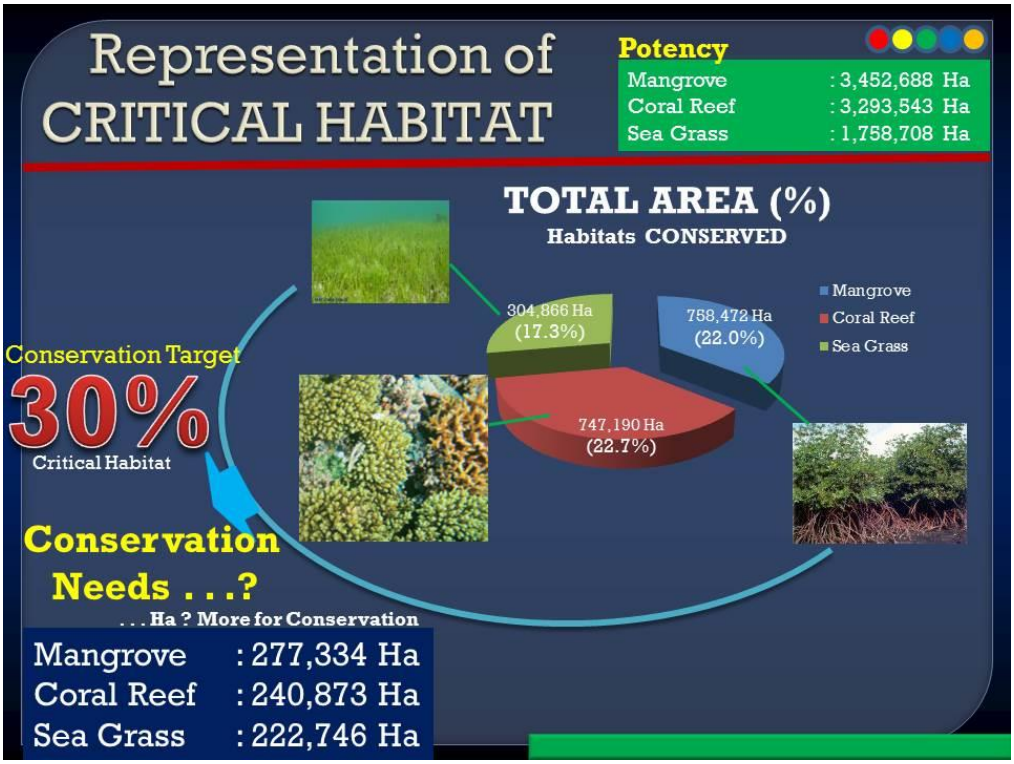
The Management of MPA system, an effective management MPA is represented by certain criteria, such as: Zoning and Management Plan; Strengthen Capacity of HRD and Institution; Infrastructure for Supporting Management; Resource Monitoring and Coordination; Rehabilitation of Habitats and Fish Population; Pilot Project of Protection and Preservation of MPAs; Pilot Project of Utilization of MPA for Fisheries and eco-Tourism; Encouraging Community Participation; Development of Economic Alternative for Communities; MPA Networks and Partnerships. E-KKP3K (E-MPA) is accompanied with a software to facilitate recording the results of actual evaluations in the field. This software is also functioning as a national database. Further information about E-MPA can be accessed through website **kkji.kp3k.kkp.go.id**



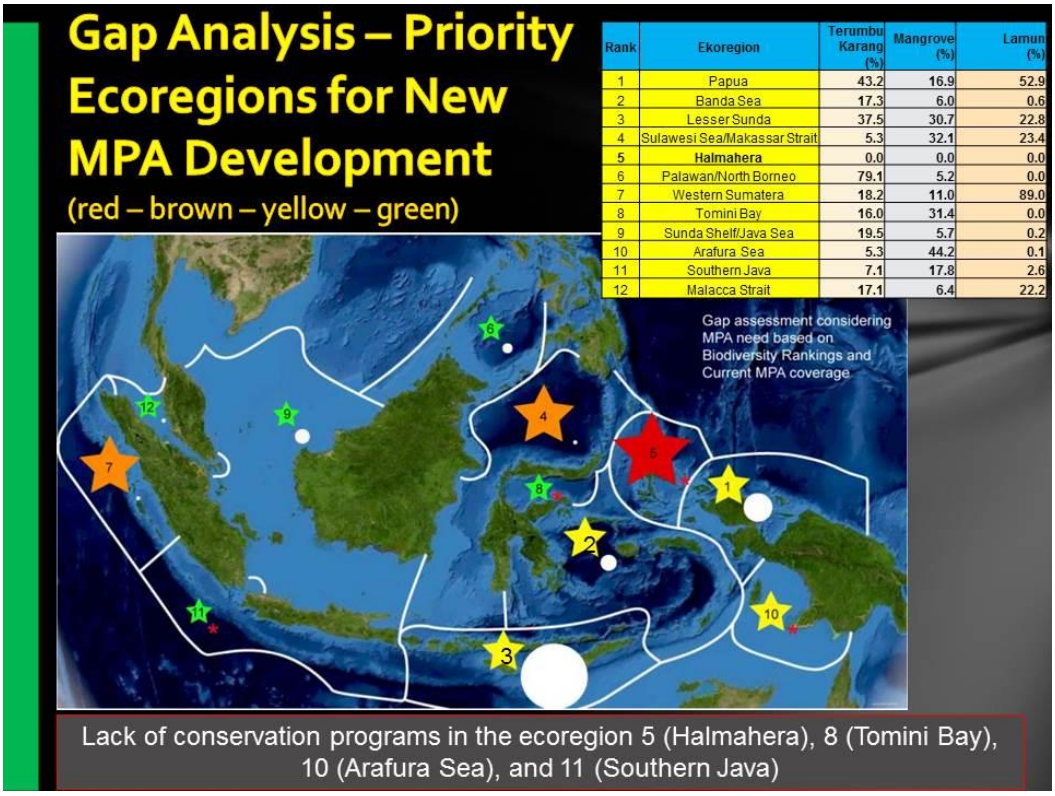
This year (2013) we have started to develop E-MPA Awards. This awards aims to encourage the MPA managers to better improve their MPAs management. The conservation area deemed to have the most effective management will be rewarded with an “Anugerah E-KKP3K” (E-MPA Awards). Now, we are ongoing progress to evaluate each MPA and the celebration will be end of this year at the Nusantara day event. This agenda should motivate the managers of these conservation areas to continue to work hard to create conservation areas that are effectively and sustainably managed. As well as the “Anugerah E-KKP3K” (E-MPA Awards), or another key output of these activities is the recommended management priorities for the all conservation areas that have been evaluated. In the regional context, such as in the coral triangle initiative (CTI), E-MPA has been shared and presented, particularly as part of the agenda of CT MPA Regional Exchange during the development of Coral Triangle Marine Protected Areas System (CTMPAS), as well as in the regional cooperation on marine conservation and sustainable fisheries management of Sulu Sulawesi Marine Ecoregion (SSME) involving 3 countries of Indonesia, Malaysia, and Philippine. During CTI Regional priority workshop held in Manado recently, Indonesia has proposed to be the host of MPA Regional recognition (Awards) for CTMPAS in 2014.



As we mentioned before, our government commitment to set up 20 million ha of MPAs in 2020, we have conducted the study with some expert for a priority geography for marine biodiversity conservation in Indonesia. The book was published in 2012, particularly based on three ecological criteria of: 1) Irreplaceability = degree of endemism, taxonomic uniqueness, presence of rare species/habitats, etc.); 2) Vulnerability = different methodologies prioritize either low risk regions or highly threatened regions; and 3) Representativeness= particularly when a planning unit such as a country's national boundaries cross biogeographic realms. Beside the size of MPAs, scientifically we need to protect about 30% of critical habitats. With this regards, up to 2010 (based on our gap analysis study) we have protected about 22.7 % of coral reefs, 22% of mangrove and just 17.3% of seagrass. Since we need to protect about 30% of critical habitats and to include in the MPAs, so we need more about 240,000 of Coral reefs, 277,000 of mangroves and 222,000 of seagrass. (the total area for each ecosystem is counting from the total area of potential data critical habitats (mangrove, coral reefs and seagrass).



First priority is Papua ecoregion, second Banda Sea, third Lesser Sunda, fourth Makassar Strait and Sulawesi Sea, and so on, the last is Mallaca Strait (rank 12). To expand of marine protected areas, we have one reference from the marine experts' study about Gap analysis. So in the future, based on this study, the marine experts recommended us to develop additional MPAs in first priority on Halmahera Ecoregion, and then in the ecoregion of Sulawesi Seas and West Sumatera Ecoregion, and the next is adding the new MPA in Lesser Sunda, Banda Sea, Arafura Sea and Papua. The last is in the rest of 5 (five) others ecoregion area.



Our homework is remains huge to develop and manage our MPA effectively in line with global target to manage at least 10% (ten percent) of our coastal and territorial marine area. In short, we will continuing to expand and achieving target 20 million hectares of new MPAs in 2020; strengthen management of MPAs (4,5 Million Hectare of MPA Effectively Managed, including Conservation management for 15 Charismatic Species, endangered and endemic aquatic species); we have been preparing a new strategic plan for 2015-2019); Ensure benefits of MPAs especially on fisheries and eco-tourism; Implementing collaborative management that promotes partnership among governments, communities, and the private sector in MPA management; improving the Community Empowerment; developing MPA Networks; developing Sustainable financing schemes to support management of MPAs; Encourage industries to allocate their CSR (*Corporate Social Responsibility*) budget to support MPA management programs; strengthen and updating Information system on MPA management; and the last but not least is the implementation of Coral reefs rehabilitation and management – Coral triangle initiative (COREMAP-CTI) which continuing from the successful COREMAP II program. Several challenges we have been facing, such as: the changes of commitment of local government; spatial planing that should be include MPA in integrated coastal zone management; lack of human resource capacity to manage of MPAs; lack of knowledge and skill for MPA manager and practitioner; and last but not least is lack of funding in MPA Managements;