



NEEDS ASSESSMENT AND ROADMAP FOR CAPACITY BUILDING PROGRAM FOR AQUATIC, COASTS, AND SMALL ISLANDS CONSERVATION AREAS (KKP3K) PERSONNEL IN INDONESIA 2020-2024

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We would like to thank all parties that have been involved in the process of analysing the needs for the capacity building of protected areas personnel in Indonesia. We received invaluable inputs and directions from the Ministry of Marine Affairs and Fisheries, the Directorate General of Marine Spatial Management (PRL), especially the Directorate of Marine Conservation and Biodiversity (KKHL), the Marine Affairs and Fisheries Research and Human Resources Agency (BRSDMKP), and the Center of Training and Courses (Puslatluh). We appreciate the partners involved in discussions and provided data as well as information related to the training and competence assessment for key stakeholders and staff of marine protected areas (MPAs).

The capacity building analysis targets the priority needs in 2020-2024 for MPAs personnel to achieve effectively managed 20 million hectares MPAs by 2030. The analysis was carried out for three months through the stages of literature review, collection of training and competence assessment data, closed discussion within the PRL and Puslatluh, focused group discussion, interviews, and discussion by the parties involved in the capacity building of MPA staff. The data used concerning training and competence assessment was the data independently collected by CTC within the 2012-2019 period, Puslatluh training data, LSP Kelautan and LSP-KP training and competence assessment data, and PRL's Technical Guidance data. We hope that the results of this needs analysis can benefit MPA personnel and the other parties involved in the establishment and management of MPA in Indonesia.

The whole analysis process was made possible by the funding from Margareth A. Cargill Philanthropies (MACP) for the Coastal Ecosystem Protection Development Project.

SUMMARY

Indonesia targeted 32.5 million hectares of marine protected areas (MPAs) by 2030 and it is expected that 20 million hectares of the area can be effectively managed. However, to administer the MPAs effectively and fairly, protecting biodiversity and benefitting the people is rather challenging. In achieving conservation targets, the management body should be in place and competent staff is needed. The lack of competent staff causes inadequacies or even no management activities carried out in the field, rendering the MPAs ineffective. In the context of technical guidelines for evaluating the management effectiveness of marine, coasts, and small islands conservation areas (EKKP3K) – supplement materials, specifically mentioned the number of basic training and competency certification that must be possessed by MPA staff (EKKP3K Supplement Materials, 2014). Realizing these conditions, it is necessary to identify appropriate strategies and solutions to meet the need of human resources to manage MPAs. The objectives of this analysis are:

1. Mapping the competencies needed in every stage of MPA management,
2. Identifying the staff and locations of MPAs that need to be prioritized in 2020-2024,
3. Identifying strategic partners to support MPA capacity building personnel and related stakeholders, and
4. Creating the roadmap of MPA Capacity building year 2020-2024 will be used to achieve and carry out strategies to narrow the human resources gap. To achieve the objectives, we carried out analyses by categorizing priority MPAs based on the existing rules and policies. Next, we sorted and categorized the information about the basic knowledge and skills needed by MPA staff, as well as collected the data on the management staff for every priority MPA and the information of competence-based basic training that they had partaken. The IUCN A Global Register of Competency Protected Area Practitioners was used as a reference for contrasting and comparing the basic and special competences for the minimum management functions that must be possessed in managing MPAs in the ideal conditions. Lastly, we mapped the number of personnel needed based on management functions, basic competencies, and special competencies required for every function in the management of MPAs.

Based on the analyses, the MMAF the Directorate of Marine Biodiversity and Conservation in particular and CTC, developed and arranged a draft for Aquatic, Coasts, and Small Islands Conservation Areas capacity building roadmap in Indonesia 2020-2024. The draft has been discussed and consulted with government agencies, academicians, environmental activists, and others. The assessment resulted that MPA staff need to possess 20 topics of competencies. Based on the management function, a coordinator needs to possess 11 topics out of 20 competencies. At the same time, service and partnership personnel need to possess 10 topics out of 20 competencies. MPA staff who are served in the field of biophysical and socioeconomic monitoring, administration and finance, community outreach, surveillance, and technology and information need to possess 9, 7, 7, 6, and 2 topics out of 20 competencies respectively.

In this document, the needs of competent staff for 36 priority MPAs consisting of 10 nationally managed and 26 provincially-managed MPA has been analysed. Based on each MPA's function and conditions, there are four competent scenarios, namely minimum, medium, advanced, and ideal. In ideal conditions,

720 competent staff or 20 personnel for each management unit are needed. For advanced conditions, there are a total of 612 competent staff required, or 17 personnel for each MPA management unit. Then, under medium and minimum conditions, 11 and 8 competent staff are needed for each management unit or a total of 396 and 28 personnel for 36 priority MPAs in Indonesia.

The Roadmap for MPA Personnel Capacity Building 2020-2024 covers five milestones, which are: 1) The achievement of minimum and medium conditions through training and competencies test, 2) The availability of module and competency-based curriculum, 3) The establishment of competence standards, 4) The preparations of National Education Scheme for MPA Personnel, and 5) The institutionalization of MPA Personnel Training into the Centre of Fisheries Training and Education.

Twelve partners committed to implement the Roadmap for Capacity Building by facilitating training, conduct competency assessment, and organize a combination of training and competency assessment. The partners are the Coral Triangle Center (CTC), the Marine Professional Certification Institution (LSP Kelautan), the Marine and Fisheries Certification Institute (LSP KP), Indonesian Institute of Sciences (LIPI), Coastal and Marine Resources Management Station (BPSPL) Denpasar, Sub-National Marine Protected Area Coordination Office (LKKPN) Pekanbaru, Yayasan Terumbu Karang Indonesia (TERANGI), Wildlife Conservation Society (WCS) Indonesia, Conservation International (CI) Indonesia, and Yayasan Konservasi Alam Nusantara (YKAN). The budget for running series of capacity building commitment will be sources from the national budget (APBN) or grant (including Competences Certification by the National Professional Certification Authority (PSKK BNSP) and Coremap CTI). Moreover, the Ministry of Finance, the Coordinating Ministry of Maritime Affairs and Investment, provincial and other regional administrations, as well as other governmental institutions have also pledged to support the MPA capacity building roadmap 2020-2024.

PREFACE

All praise be to Allah Subhanahu wa Ta'ala for His blessings that have allowed the completion of the Roadmap for Marine Protected Area Capacity Building personnel. This roadmap was created to provide directives for the government at the national and the provincial levels, enhancing the capacity and competencies of the human resources about managing the MPAs.

Currently, Indonesia has 23.14 million hectares of marine protected areas, equivalent to 7.12% of its water area, consisting of 196 areas in which 10 of them nationally managed, 30 areas run by the Ministry of Environment and Forestry, and 156 areas under the authority of the respective provincial administrations. However, out of the 156 MPAs managed by the national and the provincial governments, 13% of conservation areas managed minimally (Green Level), 26% of conservation areas were established (Yellow Level), while the rest are still in the initiation phase (Red Level). Considering the fact, the next main target would be managing the protected areas effectively and sustainably in ways that benefit the people's economy.

Management efforts of a protected area are a must; without them, a protected area would not mean anything and would not benefit the people in any way. With proper management efforts, people can gain social, economic, and ecological benefits from the protected area. Effective MPA management requires competent human resources to carry out Management and Zonation Plan (RPZ) to achieve the management objectives. The adequate quantity of human resources depends on the area and the complexity of the managed areas used. Meanwhile, human resources' quality is related to the staff's competencies, including the competencies on conservation planning, people empowerment, monitoring and law enforcement, to administration and finance. In general, this roadmap serves as a reference for phases and activities that the government, on both the national and provincial levels, needs to meet the required optimum quantity and quality of human resources to manage marine protected areas effectively.

Lastly, we would like to thank all parties that have lent a hand in creating the MPA capacity building roadmap for MPA personnel. We hope this roadmap can benefit sustainable conservation area management. Suggestions and criticism are welcome for further improvements.

FOREWORD FROM THE DIRECTOR OF MARINE CONSERVATION AND BIODIVERSITY

The success in the management of a protected area is measured by the capability of sustainably achieving the defined goals and objectives of conservation. Effective management of protected areas requires competent human resources who can execute management and zonation plan to achieve the defined objectives of conservation. To achieve the overarching goals of conservation, competent staff are needed. In reality, various examples worldwide show that many protected areas' staff still need to learn new skills and technologies. The estimated number of personnel needed to manage 15 million hectares of protected areas is at least 2,500 people who are competent in managing protected areas (Dit KKJI, 2014) or about 50 people for each protected area (Dit KKJI, 2014; BPSDMKP, 2011). Currently, not all marine protected areas in Indonesia have a complete and sufficient technical unit to manage an MPA.

Realizing the condition, we acknowledge the need to identify the appropriate solutions and strategies to overcome the lack of competent human resources. Hence, the Ministry of Marine Affairs and Fisheries, especially the Directorate of Marine Conservation and Biodiversity, the Center for Marine and Fisheries Training and Courses, and the Coral Triangle Center have created a Roadmap of MPA Capacity Building personnel to serve as a reference to meet the required optimum quantity and quality of human resources that allow effective management of protected areas.

Alhamdulillah, we managed to complete this roadmap. I would like to thank all the parties involved who have lent a hand in completing of the roadmap. I hope that this roadmap can provide clear and effective directions to management units of protected areas in their efforts to meet the required number and competencies of their human resources. May this road map be beneficial for us.

Ir. Andi Rusandi, M.Si.

Director of Marine Conservation and Biodiversity



FOREWORD FROM THE HEAD OF THE CENTER OF MARINE AND FISHERIES TRAINING AND OUTREACH

All praise to the All-Mighty God with whose blessings and grace this Needs Assessment for MPA Capacity Building of the Staff in Indonesia 2020-2024 was completed as a road map to enhance the competencies of MPA personnel in Indonesia.

MPA personnel is an invaluable factor that guarantees the success of MPA management. Other than sufficient knowledge, skill, and competencies, the staff must also possess the commitment, mental strength, and the working spirit in protected areas. Various efforts of capacity building and competencies standardization have been carried out by creating the Indonesian National Occupational Competency Standards (SKKNI) and Specialized Occupational Competence Standards (SK3) in marine conservation. They are intended to create human resources that are competent in knowledge, skills, and working attitude.

The Center of Marine and Fisheries Training and Courses is committed to supporting and working together with all parties in the capacity building program through the development of curriculum and modules, the implementation of competency-based training, and the involvement of fisheries instructors the management of marine protected areas. The preparation of training equipment, trainers, competence tests, and training partnerships is a token of our commitment to supporting capacity building for the staff of marine protected areas.

This assessment is expected to be useful as guidance for the development of MPA in Indonesia. It is also expected to help identify strategic partners that can support competence building to narrow the human resources competencies gap. Support and partnership from all stakeholders are highly expected for training and competence tests in phases until 2024, as the Indonesian MPA development continues.

We would like to extend our congratulations and gratitude to the whole Coral Triangle Center (CTC) team for their success and support in carrying out this assessment. We hope this assessment would bring benefits to us and all the stakeholders in MPAs. We realize that this assessment is not yet without a flaw; therefore, we humbly ask for constructive criticism and suggestions for future considerations and improvements of similar assessments.

Jakarta, June 2020

Dr. Lilly Aprilya Pregiwati, S.Pi., M.Si.

Head of the Center of Marine and Fisheries Training and Outreach



FOREWORD FROM THE DIRECTOR OF CORAL TRIANGLE CENTER

Indonesia is the largest archipelagic nation which harbours among the highest marine biodiversity on the planet. Situated in the heart of the Coral Triangle, the extensive coral reef areas form an important genetic pool to help replenish other areas in the region and around the globe. They are also among the most resilient reefs in the face of climate change due to the cool upwelling areas. The Indonesian Throughflow flowing from the Pacific Ocean to the Indian Ocean is the largest movement of water dispersing nutrients, eggs and larvae of marine life in the Indo-Pacific region.

Recognizing its marine bio-diversity of global significance, the Government of Indonesia has committed to set aside 10% of its marine waters or 32.5 million ha in marine protected areas (MPAs) by 2030 under the Convention of Biodiversity. The Ministry of Marine Affairs and Fisheries has already successfully established more than 20 million ha by 2020 exceeding its previous targets. MMAF's vision for the next 10 years is not only to expand the number of MPAs but also to ensure that the MPAs are effectively managed.

Adaptive management of the MPAs is needed to address the immediate, emerging and long term threats such as overfishing, plastic pollution and climate change. There is an urgent need to institutionalize capacity building programs to attract, support and retain a competent and resourceful work force that can manage the ever-changing dynamics in the field and help create the enabling conditions required for MPAs to be effectively managed.

With this assessment and road map which is based on data, input, consultations and experience of many agencies and individuals, the leadership and core competencies of the MPA planners, managers and staff can be further developed and recognized. Committed and competent teams in the field will make all difference. Leaders are needed at all levels who can engage stakeholders and partners in the development and implementation of management plan and connect with other MPAs in broader spatial planning processes.

Established in 2010, CTC's mission is to inspire and train generations to care for coastal and marine ecosystems. We are committed to develop local capacity for long term conservation emphasizing MPAs as natural platforms for training and learning. Interactive and integrated curricula that encourages sharing and connect professionals and practitioners in learning networks, forms an integral part of CTC's portfolio, recognizing people are agents for change. Our vision is healthy seas to enrich nature and people.

There is so much at stake as millions of people depend on coastal and marine resources for their livelihoods. Effective MPAs contribute to food security, income, coastal protection and recreation. With this roadmap, MMAF and partners can develop the human resources needed to staff all MPAs effectively

to manage the coastal and marine resources of Indonesia now and for future generations. By 2030, all MPAs will be well staffed and capacity building mechanisms will be in place to support the effective protection and management of Indonesia's precious coastal and marine ecosystems sustaining economic activities in a sustainable way across the archipelago and beyond.

Many thanks to MMAF, all partners and the team who put this excellent roadmap together which is a defining framework to build staff capacity for all MPAs in Indonesia. Together we can turn the tide and protect our oceans.



Rili Djohani

Co-founder and executive director Coral Triangle Center

GLOSSARY

Bimtek	: Technical guidance, guidance and instruction service given by experts or professionals with the purpose of enhancing the quality of human resources.
BKKPN	: Station of National Marine Protected Area
BNSP	: National Professional Certification Authority
BPPP	: Fisheries Training and course Station
BRSDMKP	: Marine and Fisheries Research and Human Resources Body
CTC	: Coral Triangle Center
Diklat	: Education and training
EAFM	: Ecosystem Approach for Fisheries Management
EKKP3K	: Effectiveness of Aquatic, Coasts, and Small Islands Conservation area
FGD	: Focus Group Discussion
KKHL	: Conservation of Marine Biodiversity
KKJI	: Conservation of Area and Fish Species
KKP	: Marine Protected Area (MPA)
KKPD	: Regional Marine Protected Area
KKPN	: National Marine Protected Area
Occupational competence	: The ability of individuals that covers the knowledge, skills, and attitude as defined in the standards
LKKPN	: Sub-National Marine Protected Area Coordination Office
LSM	: Non-governmental organization
LSP	: Professional Certification Institution
LSP Kelautan	: Marine Professional Certification Institution
LSKP-KP	: Marine and Fisheries Professional Certification Institution
MPA Vision	: Marine Protected Area Vision
NSPK	: Norms, Standards, Procedures, and Criteria
Pelatihan/training	: Process, way, act, action, or work of training
Permen	: Minister Regulation
PRL	: Marine Spatial Management
Pusdik	: Center of Education
Puslatluh	: Center of Training and courses
SBU	: General Standard Costs
SDM	: Human Resources
Sertifikat/certificate	: A written or printed statement from an authority that can be used as a proof of the possession of something
SKKK	: Specialized Occupational competence Standards
SKKNI	: Indonesian National Occupational competence Standards

TNC	: The Nature Conservancy
TNP	: Marine National Park
TOT	: Training of Trainers
TWP	: Marine Tourism Park
Test	: A trial to assess the quality of something (purity, proficiency, resiliency, and others)
UNCBD	: United Nations Convention on Biological Diversity
UPT	: Technical Unit

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INTRODUCTION

BACKGROUND

Indonesia is one of the 192 countries that have ratified the United Nations Convention on Biological Diversity (CBD) and signed the Aichi Biodiversity Targets in 2010. Indonesia has set a target of having at least 17 percent of terrestrial and inland water and 10 percent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, conserved by 2020. By the end of 2019, Indonesia has had more than the targeted 20 million hectares of marine protected areas. The next target is to achieve 30 million hectares of Marine Protected Areas (MPAs) by 2030 and has 20 million hectares of them effectively managed by the same year.

The success of a protected area is measured by the capability of achieving defined targets (goals and objectives) of conservation and the continuous feedback for adaptive MPA management (Pomeroy et al., 2004; Hocking et al., 2006). To achieve the overarching goals of conservation, competent staff are needed. In reality, various examples worldwide show that staff of protected areas still need to learn new skills and technologies. (Appleton, 2001; Pomeroy et al., 2004; Hocking et al., 2006).

Indonesia has had 22.69 million hectares or 6.98% of its water area set aside as marine protected areas. The challenge following the achievement is how to effectively and fairly manage protected areas to bring about ecological and socioeconomic benefits for the people. One of the main hurdles is the limited human resource availability of competent staff, which causes inadequacies or even absence of in-location management, rendering the MPAs ineffective.

It is estimated that to manage 15 million hectares of protected areas, at least 2,500 competent personnel in the management of protected areas (Dit KKJI, 2014) or about 50 people for each protected area (Dit KKJI, 2014; BPSDMKP, 2011) are needed. Currently, not all marine protected areas in Indonesia have already had a complete, sufficient technical unit to manage a marine protected area. On the national level, the quality and the quantity of marine human resources are essential in the Long Term Development Plan (RPJP) 2005-2025 and Law no.17/2007. Efforts are needed to improve human resources and governance, zonation, and protection of marine areas under Indonesia's jurisdiction, including the establishment of Indonesia's marine area borders.

Other than the number of human resources to be allocated for the management of protected areas, in the context of effective management according to the Supplement to the Guide for KKP3K Effectiveness Evaluation, the number of basic training and competence certificates required for MPA staff is specified for MPAs at Yellow and Green Levels. In consideration to that, there is a need to identify the appropriate solutions and strategies to overcome the lack of competent human resources.

OBJECTIVES

This assessment was carried out with the objectives of:

1. Listing and mapping the competencies needed in every stage of management,
2. Identifying the locations and the management of marine protected areas that need to be prioritized as targets in 2020-2024,
3. Identifying strategic partners that can support the competence building of staff and of the communities that are stakeholders of marine protected areas,
4. Creating the roadmap for MPA Capacity Building Personnel 2020-2024 to be used as a reference to achieve and carry out strategies to narrow the human resources gap.

EXPECTED OUTPUTS

At the end of the assessment, a document should be created that consists of recommendations and plans for capacity building as follow:

- The competence status of the staff of marine protected areas as of the end of 2019,
- Priority topics for capacity building to support the improvement of the effectiveness of marine protected area management in 36 priority locations, and
- The number of training and competence tests that need to be carried out in phases until 2024 according to the priorities given to the marine protected areas and the stages of the establishment and the management of Indonesia's marine protected areas.

LITERATURE REVIEW

COMPETENCIES AND CAPACITY BUILDING

Competency is a linkage between attributes of individuals (such as knowledge, skills, and values) to the tasks and activities in one's work (Widodo, *in prep.* 2020). Competency is not always measured by the achievement of specific outcomes but more by performance. The performance of individual tasks rests more on various capacities such as reasoning and making judgements, as well as specific knowledge and individual dispositions (Foley, 2004). What makes someone competent is mostly tacit and intuitive, and learning is not merely what can be taught formally in the classroom but is more about doing it.

In developing a capacity development program for conservation staff, special competence standards are needed based on the needed skills and knowledge that will be developed based on the identified needs for training (Appleton, 2001). Referring to the functions of protected areas that are used for evaluating effectiveness as described by Hocking et al. (2006), competence can reflect the effectiveness framework that covers capacities in a legal framework, law enforcement, planning, facility and infrastructure resource inventory, resource management, maintenance of resources and surroundings, ability to move the people to achieve conservation goals that result in economic benefits for the locals, communication, and management system.

A working team was formed in 2011 based on the need for standardization and training content related to capacity building of human resources in conservation; it was called Team 11 (*Tim Sebelas*). The team consisted of representatives from the Directorate of Conservation of Area and Fish Species (KKJI) – KKP3K, Agency for the Development of Marine and Fisheries Human Resources (BPSDMKP), and NGO partners such as The Nature Conservancy (TNC) – Indonesian Marine Program, Conservation International (CI), Wildlife Conservation Society (WCS), and universities (BPSDMKP, 2012). However, the team entered a dormant phase in 2013.

Team 11 came up with the formulation of a competency map for MPA staff and functionaries to identify what levels and kinds of training needed for MPA management (BPSDMKP, 2012). The competencies of staff and workers of protected areas were adapted from the 17 categories of competencies according to the ASEAN Regional Centre for Biodiversity Conservation (ARCBC) for protected area jobs (Appleton et al., 2003). Basic training for MPA staff or staff-to-be is MPA101 or principles of marine protected areas. The propagation of training is through Training of Trainers (TOT), and the trainers who are trained will do the same to the MPA staff and the staff-to-be (BPSDMKP, 2012).

ORGANIZATIONAL STRUCTURE OF MARINE PROTECTED AREAS

According to KKJI, the general plan of the MPA management body's organizational structure should have at least a head (manager), 3 section heads, and 50 functionaries whose number depends on the area and the focus of management (Table 1).

Table 1. Organizational structure of a marine protected area management body.

Position	Code	Number
MPA Head/MPA/Technical Unit Manager	MK	1 person
Section Heads	KS	3 persons
Functionaries for each technical unit		50 persons
3.1. Outreach Specialist	OS	
3.2. Planning Specialist	PS	
3.3. Marine Science Specialist	SS	
3.4. Alternative Livelihood Specialist	AS	
3.5. Ranger Officer	RO	
3.6. Outreach Officer	OO	
3.7. Monitoring Officer	MAU	
3.8. Administration Staff	AD	

(Source: BPSPDMKP, 2012)

GENERAL GUIDE FOR CAPACITY BUILDING OF PROTECTED AREA STAFF

The International Union for Conservation of Nature (IUCN) in its publication about capacity building for protected area staff provides a competence register plan needed for each level of position, the tasks and the responsibilities, examples of position titles in other equivalent institutions, and the required minimum education level as well as guide for each competence group (Appleton, 2016) (Figures 2, 3, and 4). The plan can be considered for adoption and use as a basis for marine protected area staff in Indonesia based on occupational levels (Widodo, *in prep.*, 2020). Priority topics of competence groups need to refer to establishing and managing a particular MPA based on its effectiveness.

4 PERSONNEL LEVELS	4.EXECUTIVE 3. SENIOR MANAGER 2. MIDDLE MANAGER/TECHNICAL SPECIALIST 1. SKILLED WORKER						
3 COMPETENCE GROUPS SEE PART 2.4	A. Planning, Management, and Administration			B. Applied Protected Area Management		C. General personal competences	
15 COMPETENCE CATEGORIES SEE PART 2.4	PPP. Protected area policy, planning, and projects ORG. Organizational leadership and development HRM. Human Resource Management FRM. Financial and operational resources management ADR. Administrative documentation and reporting CAC. Communication and collaboration			BIO. Biodiversity conservation LAR. Upholding laws and regulations COM. Local communities and cultures TRP. Tourism, recreation, and public use AWA. Awareness and education FLD. Field/water craft and site maintenance TEC. Technology		FPC. Foundation personal competences APC. Advanced personal competences	
A SET OF COMPETENCES FOR EACH CATEGORY-LEVEL COMBINATION SEE PART 2.4 AND 4	Columns in Part 4 of this publication				Additional columns in the accompanying Excel spreadsheet		
	A	B	C	D	E	F	G
	Code	Competence statement	A brief explanation of the competence	Main knowledge requirements for the competence	Example performance criteria	Example means of assessment	Recommended prior competence requirements

Figure 1. Overview of the organisation of the competences in the institution managing a marine protected area.

Table 2. Description of titles of levels 0, 1, and 2 along with scope of work and examples of positions.

Level	Typical title	Scope of work and responsibility	Examples of positions at the level in the protected area (PA) sector				Equivalent educational level
			National and sub-national protected area agencies	Other agencies, local and regional government	Civil society	Private sector/ consulting	
LEVEL 2	MIDDLE MANAGER, TECHNICAL SPECIALIST	<ul style="list-style-type: none"> - Management, organisation, and leadership of technical sections and teams implementing plans and projects - Competing specific and complex technical assignments (according to technical speciality) 	<ul style="list-style-type: none"> - Head ranger - Section leader - Scientific officer - Tourism officer - Community outreach officer - Educational and interpretive officer - Administrative officer - Accountant 	<ul style="list-style-type: none"> - Local government field officer - Local environmental inspector - State agency (e.g. forestry) local officer 	<ul style="list-style-type: none"> - Resource owner, custodian, or service provider from a local community - NGO project field worker 	<ul style="list-style-type: none"> - Consultant/technical adviser - Local small business owner providing PA related services 	<ul style="list-style-type: none"> - Bachelor degree in science - Other college degrees - Senior high school - Junior high school
LEVEL 1	SKILLED WORKER	<ul style="list-style-type: none"> - Completing specific and sometimes complex tasks and assignments under regular supervision 	<ul style="list-style-type: none"> - Patrol ranger - Tourism ranger - Community ranger - Administrative assistant - Accounting assistant - Junior technician 	<ul style="list-style-type: none"> - Site guardian - Resource guard or warden (e.g. for forestry, fisheries) 	<ul style="list-style-type: none"> - Site guardian - Local guide - Community custodian - Community resource user (fisher, farmer, hunter) - Skilled volunteer 	<ul style="list-style-type: none"> - Site guardian for a private company - Private guide 	<ul style="list-style-type: none"> - Senior high school - Junior high school
LEVEL 0	UNSKILLED WORKER	<ul style="list-style-type: none"> - Completing practical tasks under continuous 	<ul style="list-style-type: none"> - Labourer - Unskilled volunteer - Casual worker 	<ul style="list-style-type: none"> - Labourer - Unskilled volunteer - Casual worker 	<ul style="list-style-type: none"> - Unskilled volunteer - Labourer 	<ul style="list-style-type: none"> - Labourer - Unskilled volunteer - Casual worker 	<ul style="list-style-type: none"> - Junior high school - Elementary school

		supervision			- Casual worker		- Unrelated education
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Table 3. Description of titles of levels 3 and 4 along with scope of work and examples of positions.

Level	Typical title	Scope of work and responsibility	Examples of positions at the level in the protected area (PA) sector				Typical title
			National and sub-national protected area agencies	Other agencies, local and regional government	Civil society	Private sector/ consulting	
LEVEL 4	EXECUTIVE	<ul style="list-style-type: none"> - Central direction and management of large organizations - National and regional policy development, spatial and strategic planning - Cross sectoral coordination - Direction of complex programs and plans 	<ul style="list-style-type: none"> - Director of national or subnational protected area system - Ministerial level executive responsible for protected area systems - Senior national or subnational planner (land use, resource use, development) 	<ul style="list-style-type: none"> - Senior executive of a natural resource managing agency with responsibility for PAs (e.g. forestry agencies) 	<ul style="list-style-type: none"> - Senior executive of a major national/ international NGO with special interest in PAs - 'Elder' from a community or indigenous people's organization 	<ul style="list-style-type: none"> - Senior executive of a resource management company - Senior executive of private game or wildlife reserve - Senior executive of tourism/ visitor service company - Senior 'protected area professional' 	<ul style="list-style-type: none"> - PhD, MSc - Master's in Business or Public Administration
LEVEL 3	SENIOR MANAGER	<ul style="list-style-type: none"> - Direction and management of medium-sized organizations - Planning and management 	<ul style="list-style-type: none"> - PA director/deputy - Chief park warden - Senior PA management and administrative 	<ul style="list-style-type: none"> - Local government official with responsibility for PAs - Local planner - Local head of agency with 	<ul style="list-style-type: none"> - PA project manager leader from an NGO or other civil society organization - Head of a local NGO 	<ul style="list-style-type: none"> - Manager of a private protected area - Site manager of a land or resource management 	<ul style="list-style-type: none"> - MSc, BSc - Other college degrees

		<p>ment of projects and programs within strategic frameworks</p> <ul style="list-style-type: none"> - Conducting and leading complex and technical programs (according to specialty) 	team member	responsibility for PAs (e.g. forestry agencies)	<ul style="list-style-type: none"> - Local community leader 	<p>ent company</p> <ul style="list-style-type: none"> - Manager of a PA tourism services company - Senior consultant / technical advisor 	
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LEGAL BASIS FOR CAPACITY BUILDING OF MPA STAFF IN INDONESIA

In July 2013, the Ministry of Marine Affairs and Fisheries issued Minister Regulation no.9/2013 on the Specialized Occupational Competency Standards (SK3) in the Planning of Marine Protected Area Management. The appendix includes a guide of 16 goals and functions of MPA staff in the management and planning. A summary of the competence map is shown in the table on the next page.

The Directorate General of Marine, Coastal, and Small Islands Affairs (KP3K) issued a Directorate-General Decree No. 35/2014, which lists the groups of competence standards needed in the management of protected areas in coastal regions and small islands. They are:

- Planning of protected area management (3 groups),
- Implementation of protected area management (4 groups), and
- Monitoring and evaluation of protected area management (2 groups).

The MPA staff's competence in management planning has been tested since 2014 following SK3 in the Planning of Marine Protected Area Management. Over the following years, Indonesian National Occupational Competency Standards (SKKNI) that support MPA management were issued. The SKKNI consists of the Monitoring and Evaluation of Coastal Resources (SKKNI no. 638/2016), the Management of Protected Areas for Marine Tourism (SKKNI no.99/2018), and the Management of Outreach (SKKNI no.98/2018). The certification scheme for the three SKKNIs is being prepared, and soon competence tests can be held.

(box)

Government Regulation No.60/2007 on Conservation of Fishery Resources, Articles 45 sections 1 and 2 stated that "In order to build and develop the capacity of institutions and human resources in the management of fishery resource. Education and training in conservation shall be held that are specifically regulated in a ministerial regulation."

Table 4. Competences of Marine Protected Area Staff.

Competences of MPA Staff (BPSDMKP, 2011)	<ul style="list-style-type: none"> - Management planning - Marine sciences - Community Involvement - Community awareness and communication - Legal aspects and policies of MPA management - Surveillance, control, and monitoring - Field skills - Information technology - Human resources management - Monitoring and evaluation of management effectiveness - Co-management - Administration and finance - Resource utilization for economy
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	<ul style="list-style-type: none"> - Institutional organization
Functions in management in the planning of MPA management (Marine Affairs and Fisheries Ministerial Regulation No.9/2013)	<ul style="list-style-type: none"> - Having a positive working attitude and basic knowledge about KKP3K - Preparing finance, resource, and asset support of institution - Preparing human resources for running management activities - Building human resources capacity for running MPA management activities - Having skills for formal and informal communication between MPA and other parties for co-management of MPA - Able to prepare the equipment for MPA management activities - Developing and managing projects for the management of marine, coastal, and small islands protected areas - Carrying out field work for effective MPA management - Providing information about the condition of natural resources for MPA management - Implementing practices of conservation strategies for effective management - Providing socioeconomic information for MPA management - Holding productive and sustainable activities for MPA management - Managing policy development and planning related to KKP3K management - Providing reliable physical infrastructure for effective MPA management - Increasing people's compliance to policies and regulations for effective MPA management - Deriving MPA benefits for non-extractive activities to support sustainable MPA management
Competence standards for the management of KKP3K (SK Dirjen KKP3K No. 35/Kep-DKJP3K/2014)	<ul style="list-style-type: none"> - Planning of protected area management that covers: <ol style="list-style-type: none"> a. Protected area b. The species of fish conserved c. Technical details of utilization - Implementation of protected area management that covers: <ol style="list-style-type: none"> a. Institutional capacity building b. Sustainable Funding

	<ul style="list-style-type: none"> c. Management of resource-based economic activities within protected areas d. Increasing community participation in the management of protected areas - Monitoring and evaluation of protected area management that covers: <ul style="list-style-type: none"> a. Management of the area's resources b. Management of social, economic, and cultural aspects
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PRIORITY MPAS IN INDONESIA AND THEIR EFFECTIVENESS

Indonesia has 196 marine protected areas (MPAs) that consist of 10 National Marine Protected Areas (KKPN), 155 Regional Marine Protected Areas (KKPD), and other areas across the regions in Indonesia (KKHL, 2019). Based on the evaluation method results using the Management Effectiveness of Aquatic, Coasts, and Small Islands Conservation Areas (EKKP3K), the management effectiveness status of KKPN is 100% on the Green Level (conservation area managed minimally). Meanwhile, the status of KKPD is 9.05% (14 KKPD) on the Green Level, 15.48% (24 KKPD) on the Yellow Level (conservation area established), while 75.48% (117 KKPD) on the Red Level (conservation area initiated) (KKHL, 2020). Of the KKPD, some have been made by the Indonesian government to be managed more effectively. However, none of the priority areas are on the Blue Level (conservation area managed optimally) nor the Gold Level (Self-reliant conservation area).

Data shows that 60%, 16%, and 24% of the priority protected areas are on the Green, Yellow, and Red Levels, respectively (Figure 2). This means that to support the Indonesian government's plan to have 30 million hectares of MPA with 20 million hectares of which managed effectively by 2030, capacity building of MPA staff is needed. MPA staff needs to carry out their tasks so that the area under their management can become better (Crabbe et al., 2009). Currently, based on the minimum organizational structure reference in the supplement to EKKP3K "Institutional Guide for Coastal and Small Islands Protected Areas," the minimum number of staff if the status on Yellow Level is five people; nine people for Green Level and twenty-three for Blue/Gold Level. Hence, according to the guide, at least 254 personnel or MPA staff are needed for 36 MPAs with their current management effectiveness status.

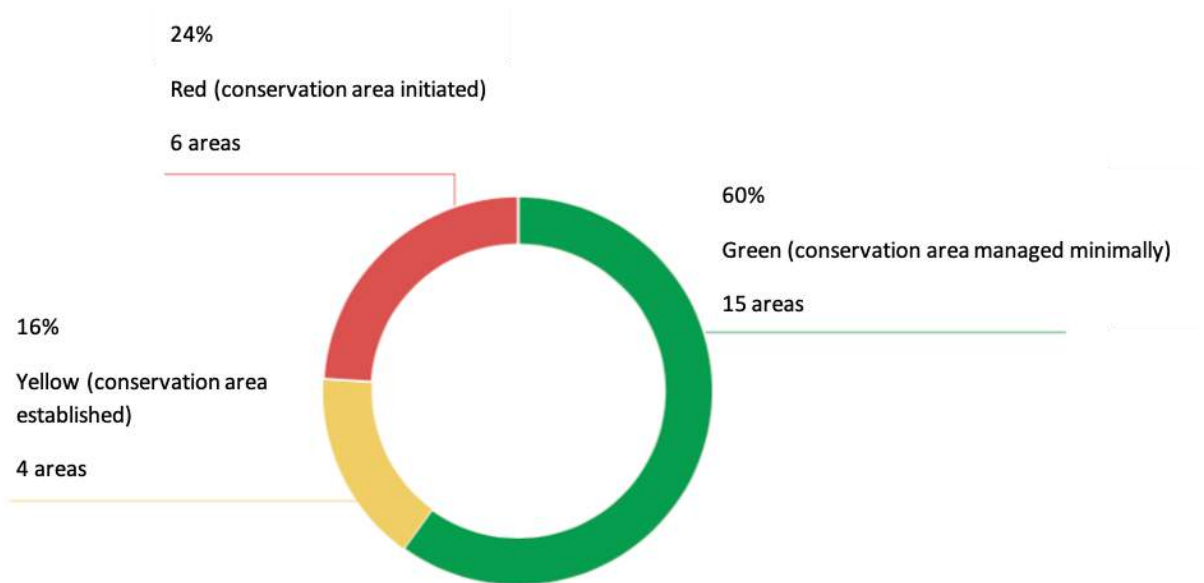


Figure 2. Management Effectiveness status for priority marine protected areas in Indonesia. (Total of priority MPAs: 36 areas, 10 national and 26 regional.

The analysis of MPA staff competency and the creation of roadmap MPA capacity building personnel for the next five years was carried out for the 36 priority MPAs that consist of 10 national MPAs and 26 regional MPAs (Appendix 1).

PARTNERSHIPS IN MPA MANAGEMENT

Managing tens of millions of hectares of MPAs spread across Indonesian waters cannot be carried out entirely alone by either the national government or the regional governments because of the high requirement for human resources, funding, and facilities and infrastructure. Support for partners would accelerate the establishment or the management of MPAs. Legally, a partnership is allowed by the issuance of Ministerial Regulation on Partnership in 2015 (Marine Affairs and Fisheries Ministerial Regulation no. 21/2015). The regulation states that partnership is a mutual relationship between two parties that is based on equality, transparency, and mutual benefit. The partners can be community groups, indigenous peoples, NGOs, educational institutions, universities, and corporations. The national and regional governments can agree upon ten programs with their partners; these include the human resources development program.

In the human resources development program, so far the partners have provided very diverse kinds of support, such as providing training materials, conducting training and competency assessments, assessing the needs for training, and developing policies in the form of competence standards. Training in marine conservation in the last eight years has been held by the Ministry of Marine Affairs and Fisheries, both independently and in partnership with others. Within the 2010-2014 period, conservation training was held in the context of raising awareness and increasing knowledge about the basic concepts of marine protected area management. The topics of the training were designed based

on the short term need for fulfilling the required basic training and preparing the stakeholders from all lines so that they can actively participate in the establishment of marine protected areas, and to run the management of the area in the early phases. Most of the courses and basic level training were designed for 2-6 days and were held by Conservation International (CI) Indonesia, the Coral Triangle Center (CTC), Rare, The Nature Conservancy (TNC), Yayasan Alam Indonesia Lestari (LINI), WWF Indonesia, Reef Check Indonesia (RCI), Yayasan Terumbu Karang Indonesia (Terangi), Wildlife Conservation Society (WCS) Indonesia, and National Oceanic and Atmospheric Administration (NOAA) (Carter, 2014).

ANALYSIS OF CAPACITY DEVELOPMENT OF MPA STAFF IN INDONESIA

TIMELINE AND STAGES OF ASSESSMENT

The assessment was carried out from January 2020 to the end of April 2020 with the stages as follow:

- Literature review
- Data collection:
 - o Primary data, training data from competence tests (2016-2019) held by the Coral Triangle Center (CTC).
 - o Secondary data, consisting of data from competence tests and training from KKHL, WWF, LSP Kelautan, and LSP-KP, priority MPA data and status from KKHL, along with the data from Sekolah Tinggi Perikanan (STP) Jakarta.
- A series of meetings and focus group discussions (FGDs) with the following timeline:
 - o Consultation within the Directorate General of Marine Spatial Management (PRL) and the Marine Affairs and Fisheries Research and Human Resources Agency (BRSDMKP) on January 21, 2020,
 - o Session on Competence and Human Resources in Workshop of Stakeholders on MPA Vision on January 28, 2020,
 - o Consultation within PRL on February 25, 2020,
 - o Session on Competence and Human Resources in Inter-sectoral Workshop on MPA Vision on March 16, 2020,
 - o Consultation within PRL on April 9, 2020, for inputs especially regarding KKPN,
 - o Results of assessments of training and competence tests in which BKKPN Kupang personnel and Loka KKPN Pekanbaru took part in on April 17, 2020, and
 - o Focus Group Discussion (FGD) involving PRL, BRSDMKP, and partner NGOs on April 30, 2020.

The data collected was then tabulated and analysed to meet the expected outcomes (can be read in full in Data Analysis, [page 24](#)).

Timeline and Stages of Assessment

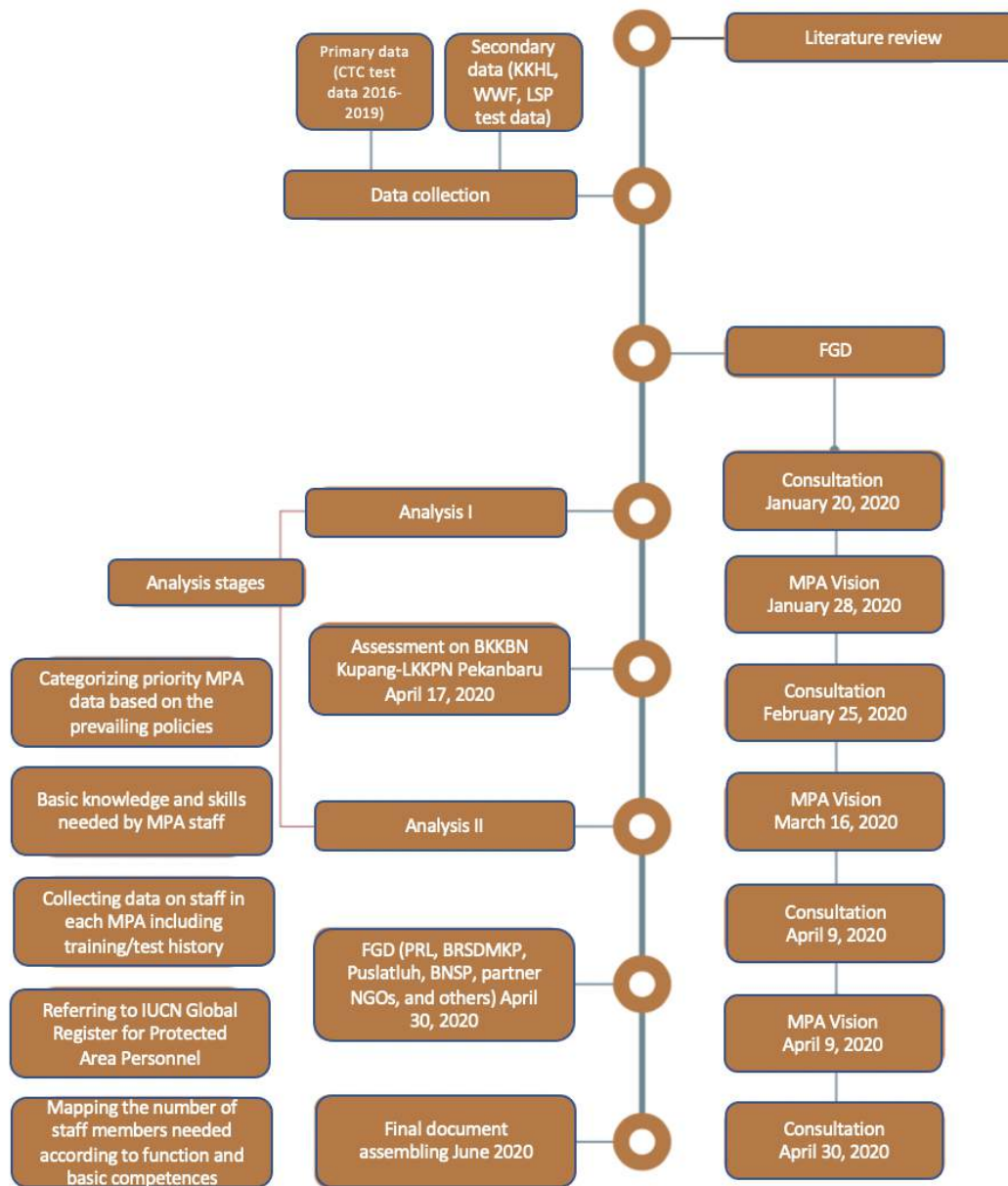


Figure 3. Timeline and information collected.

ANALYSIS METHODOLOGY

We analysed the available data and information through steps of analysis as follow:

- Categorizing priority MPA data based on the prevailing regulations and policies,
- Sorting and categorizing information of the need for basic knowledge and skills required for MPA staff at management effectiveness status of Yellow (Second Level), Green (Third Level), and Blue (Fourth Level),
- Collecting data from the MPA priority staff and describing the information concerning the competence-based basic training that staff members have undertaken and staff members who have already possessed competence certificates in MPA planning and management,
- Using the IUCN Global Register for Protected Area Personnel as a reference, contrasting and comparing the basic, and specialized competencies for the minimum management functions required for the management of marine protected areas in ideal conditions,
- Mapping the need for the number of staff members based on the functions of management and the essential and specialized skills required for every function in MPA management.

Some of the limitations in this assessment were:

- The assessment focused only on marine protected areas (MPAs) that have been declared as national priorities and regional marine protected areas (KKPD) and established with the Decree of the Minister of Marine Affairs and Fisheries of the Republic of Indonesia,
- The trial for priority competence matrix and maintenance functions were carried out only in MPAs under the coordination of National Marine Protected Area (KKPN) Kupang Station and KKPN Pekanbaru Substation,
- The calculation of training costs was based on General Standard Costs from the government which cover four days of training, including the travel costs for participants and trainers, meeting package, training materials for a maximum of 25 participants in one session,
- The number of staff members that are already trained, competent or certified is only known from the data from KKHL, Marine Professional Certification Institution (LSP Kelautan), the Marine and Fisheries Certification Institution (LSP KP), and the Coral Triangle Center. The data used originated from 2015-2019 with the assumption that the training participants are still working in the MPAs and the competence certificates are valid for 3-4 years.

DATA ANALYSIS

The whole analysis process was carried out using simple statistical calculations. The data used in this analysis can be seen in Table 5.

Table 5. Types of Data Used for the Analysis.

No	Data used for analysis
1	The number of staff members working for KKPN and KKPD (MPA personnel)
2	The number of certified staff members for each competence group (and its level)
3	Status and priority of MPA according to the Indonesian government
4	Priority topics for capacity building

5	The number of staff members working in BKKPN Kupang and LKKPN Pekanbaru for each competence
6	The list of partners working for KKP3K
<p>Note:</p> <p>The data on the number of certified members for each competency group in this analysis consists of people who are actively working for KKP3K/KKPD or officials working for Marine Affairs and Fisheries Office or other related government institution.</p>	

Data in Table 5 is put in the same Excel file. Then the data was arranged and corrected according to the primary and secondary data from the Coral Triangle Center (CTC), the Directorate of Marine Conservation and Biodiversity (KKHL), Marine Professional Certification Institution (LSP Kelautan), the Marine and Fisheries Certification Institution (LSP KP), and World Wide Fund (WWF). The data is then used to analyze:

COMPETENCE STATUS OF KKP3K STAFF

The competence status of MPA staff for each competence group is calculated using F.1 and F.2

$$\Sigma staff = MinSE \Sigma - \Sigma OT \text{ (F.1)}$$

Where:

MinSE: The minimum number of personnel according to EKKP3K status target (Red: 0 personnel, Yellow: 5 personnel, Green: 9 personnel, Blue and Gold: 23 personnel)

OT: The number of certified personnel per group/level

The total of MPA staff members needed (Σ TPPUK) is calculated by adding all the numbers of staff members or personnel needed in every level for each competence topic.

$$TPPUK = PP + PeBF + PeSEB + MPE + PKP + CM + SDM + MO + TI \text{ (F.2)}$$

Where

TPPUK: The total number of people who need to take the competency assessment test

PP: The total number of people who need to take competency assessment test for management planning

PeBF: The total number of people who need to take competency assessment test for biophysical monitoring

PeSEB: The total number of people who need to take competency assessment test for socioeconomic and cultural monitoring

MPE: The total number of people who need to take competency assessment test for monitoring and evaluation of management effectiveness

PKP: The total number of people who need to take competency assessment test for monitoring, control, and surveillance

CM: The total number of people who need to take competency assessment test for co-management

SDM: The total number of people who need to take competency assessment test for Human Resource Management

MO: The total number of people who need to take competency assessment test for Operational Management

TI: The total number of people who need to take competency assessment test for technology and information

Additional note:

The selected topics are results from MPA Roadmap discussion on January 21, 2020, and Focus Group Discussion on MPA Visioning – Capacity Building on January 28, 2020. The number of people who have taken the competence tests was calculated based on the data collected by CTC, KKHL, LSP Kelautan, LSP KP, and WWF in 2020.

PRIORITY TOPICS FOR MPA CAPACITY BUILDING PERSONNEL

Priority competences were decided with the target of achieving Blue Level for national MPAs and achieving Green Level for regional MPAs, both for those in the Yellow Level and the Red Level. The selection topics were carried out through several sessions of consultation from the 14 MPA Staff Competencies, according to BPSDMKP in 2011. The process involved meeting with the Ministry of Marine Affairs and Fisheries on January 21, 2020, MPA Visioning on January 28, 2020, and another consultation with the ministry on March 13 and April 9, 2020 (Table 6). MPA Visioning is an initiative from the Ministry of Marine Affairs and Fisheries, the Coral Triangle Center (CTC), and World Wide Fund for Nature (WWF), also attended by representatives of the Center of Training and courses (Puslatluh) and other related institutions in Indonesia (Appendix 2).

In the next parts, the analysis and roadmap are arranged by referring to the 20 competencies as listed in Table 6. It is to be noted that Principles of Marine Protected Area competency known as MPA101. In the certification scheme or competence assessment, it is included in the Management Planning for Operative Personnel.

Table 6. Topics for Capacity Building Training for Marine Protected Area Staff.

No.	Priority Topics	Roadmap CB MPA*	MPA Visioning **	Roadmap CB MPA***
1	The principles of marine protected areas or MPA101 or Management Planning for Operative Personnel	✓	✓	✓

2	Management Planning for Technicians	✓	✓	✓
3	Management Planning for Experts	✓	✓	✓
4	Community Involvement	✓	-	✓
5	Community Awareness Raising and Communication	✓	✓	✓
6	Biophysical Monitoring – Coral Reef	✓	-	✓
7	Biophysical Monitoring – Coral Fish	✓	-	✓
8	Biophysical Monitoring – Seagrass Meadow	✓	-	✓
9	Biophysical Monitoring – Mangrove	✓	-	✓
10	Biophysical Monitoring – Megabenthos	-	-	✓
11	Socioeconomic aspect monitoring	-	-	✓
12	Marine Ecotourism	✓	✓	✓
13	Fish Cultivation	-	-	-
14	Human Resource Management	-	✓	✓
15	Surveillance of Marine Resource Use	-	✓	✓
16	Management Effectiveness Monitoring and Evaluation	-	✓	✓
17	Collaborative Management	-	✓	✓
18	Technology and information	-	✓	✓
19	Operational Management	-	-	✓
20	Sustainable Funding	-	-	✓

* Meeting between KKHL, Puslatluh, and the Coral Triangle Center on January 21, 2020.

** Meeting and group discussion between KKHL, Puslatluh, LPSPL Sorong, LKKPN, BPSPL Makassar, BPSPL Padang, DPJB KKP, PSDKP, Bangda, Marine Research Center, CI, WWF, EDF, IPB, TERANGI, YKAN/TNC.

*** Consultation with the ministry on March 13 and April 9, 2020.

THE NUMBER OF TRAINING AND COMPETENCE ASSESSMENT NEEDED

The number of training and competence assessment needed for every MPA is identified through the number of MPA personnel who need to take part in training/competence assessment for each topic competency group according to Formula 1 (F.1). The number is then added according to the need of each national and regional MPA. Next, MPAs are sorted based on priorities for training/competence assessment by considering four main aspects: 1) the total number of personnel (people) who need to take a competency assessment (TPPUK); the more people who need to take a competence assessment then the more prominent the urgency is, 2) the status of the MPA; the lower MPA level, then the bigger the urgency is, 3) the area of the MPA; the larger the area, the higher the priority is, and 4) the Decree from the Minister of Marine Affairs and Fisheries-MPA. The MPAs with the lowest total score from the

four aspects are set as primary targets for capacity building program (further discussion can be read in part IV. Recommendation for the Capacity Building Roadmap).

ANALYSIS RESULTS: STATUS OF HUMAN RESOURCE COMPETENCES IN PRIORITY MPAS

Based on Marine Affairs and Fisheries of the Republic of Indonesia Ministerial Regulation Number PER.23/MEN/2008 and has been revised in regulation Number PER.24/MEN/2011 on the Organization and the Working Procedures of MPA Technical Units. At least five (5) people are needed in the organizational structure, which are Head, Administration, Program and Evaluation Section, Utilization and Surveillance Section, and Functional Position. According to the organizational structure, the minimum number of personnel for all KKPN are 50 people (5 people/KKPN). However, this calculation cannot be carried out for all priority MPAs (10 KKPN and 26 KKPD) because the minimum number of personnel for KKPD is not covered in the regulation. Thus, this analysis refers to the minimum organizational structure in EKKP3K Supplement “The Guide for the Institutional Structure of Marine, Coastal, and Small Islands Protected Area”. The minimum number of personnel for an MPA by status which is Level Yellow (5 people), Green Level (9 people), and Blue or Gold Level (23 people).

To achieve the government’s target in which priority MPAs (36 MPAs) become more effective by 2030, 664 people MPA personnel needed. The personnel need to have competencies in the topic of Management Planning for operative personnel, technicians, and experts as well as other competencies. In reality, however, there are only 171 MPA personnel (operative personnel: 63 people, technicians: 106 people, and experts: 2 people) who are certified (Figure 4).

We assessed both data from LSP Kelautan and LSP KP. The data from LSP KP written that there were 479 competent people in 2018 and 1,830 competent people in 2019 in the Management Planning topic. However, complete data were obtained only for 2019, as shown in Table 7. Out of 1,830 competent people, only 63 people that can be categorized as MPA personnel, coming from Selayar Regency Marine Affairs and Fisheries Office and BPSPL Makassar. The data were not included in the analysis, because they were not working for any of 36 priority MPAs.

Table 7. Data of competent people by groups.

No	Group	The number of competent people	Note
1	Civilians	390	
2	Government	196	Governmental institutions that are not MPA staff
3	MPA personnel	63	DPK Selayar and BPSPL Makassar
4	Universities	415	
5	Companies	429	

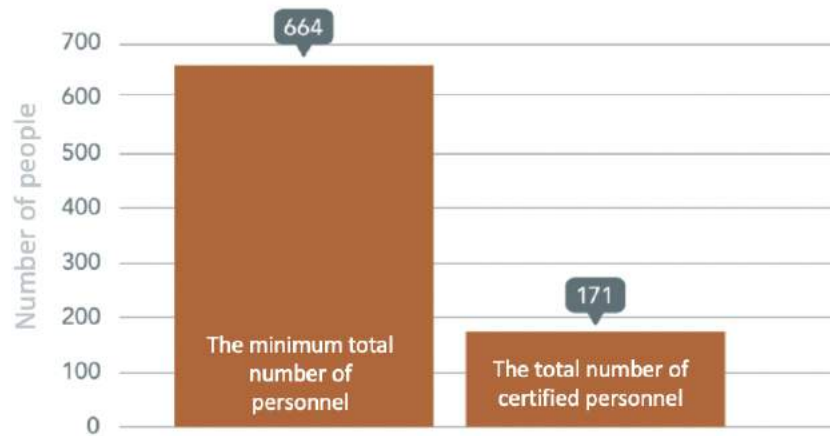
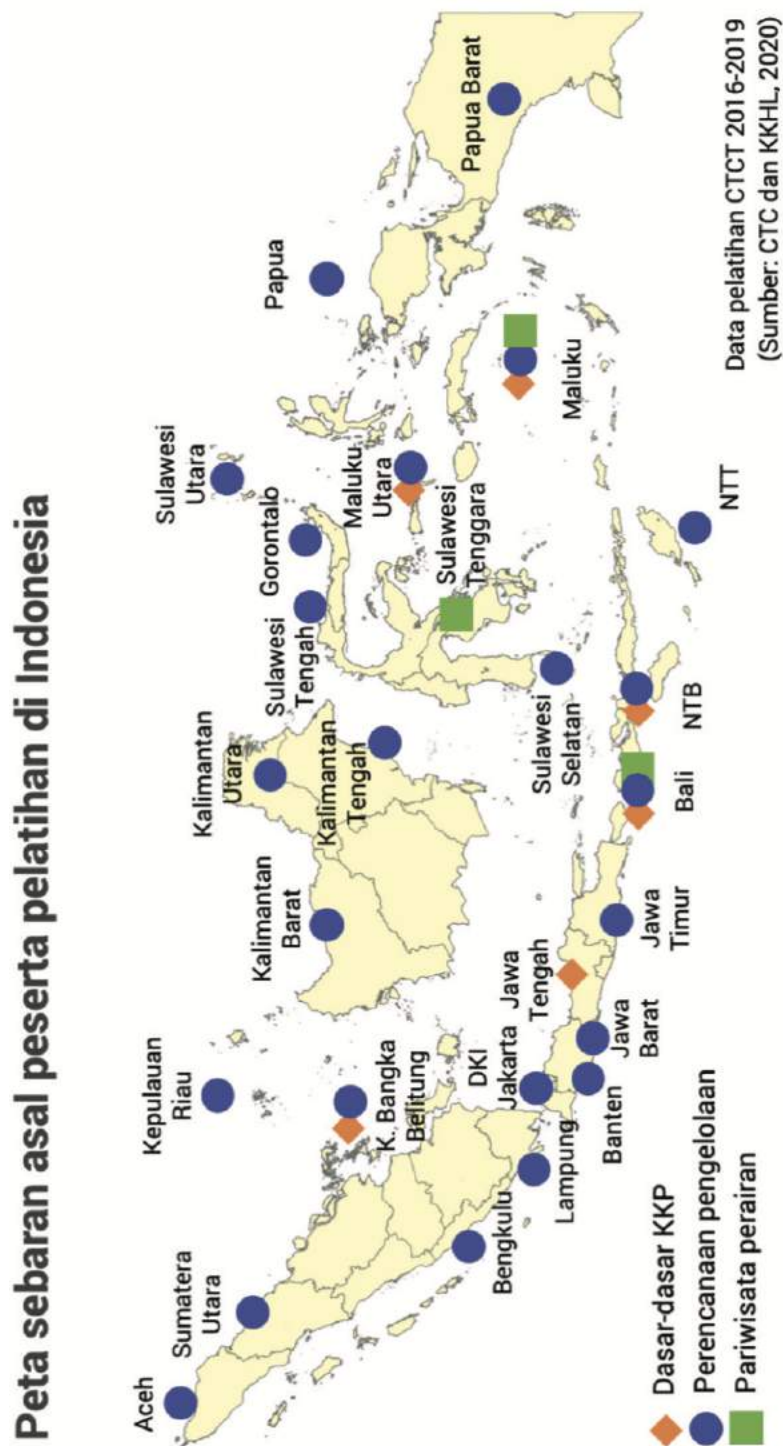


Figure 4. The comparison of the minimum total number of personnel needed with the number of certified personnel.

The sufficient number of competent personnel on the operative level only exists in the MPAs in the provinces of Bali, West Nusa Tenggara, Central Java, and Maluku. In contrast, competent personnel on the technician level are distributed in almost all priority protected areas except in Central Java and East Kalimantan (Appendix 3). As for training data, in 2016-2019, CTC has carried out training of MPA101, Management Planning, and Marine Ecotourism (Appendix 4, Figure 5).

Distribution map of the origins of training participants in Indonesia



Gambar 5. Sebaran asal peserta pelatihan dasar-dasar KKP, perencanaan pengelolaan dan pariwisata perairan di Indonesia.

Figure 5. Distribution of the origins of training participants on the topic of MPA101, management planning, and marine tourism in Indonesia

Data and figures above indicate 1) The lack of training and competent staff and, 2) Training/competent assessment are not distributed evenly in most provinces of Indonesia. Moreover, there is still a competence gap for each protected area, as can be seen in Table 7.

To become more effective (operational and utilized), on average, each priority MPA needs 161 people to undergo training/competence assessment in various topics according to the needs of the level where the MPA is. For instance, KKPN TWP Sawu Sea needs 16 people per topic of competence assessment, while TWP Banda Sea only needs 8 people (Table 8). There are some topics in which no MPA personnel needs to take a competence assessment because the staff members are already competent and vice versa. The total number on how many personnel needed to take competence assessment per KKPN is also shown in Table 8. For instance, TWP Padaido Island needs 312 people, followed by TNP Sawu Sea and TWP Kapoposang with 310 and 307 people respectively. In comparison, the least numbers are from TWP Western Waigeo (167 people) and TWP Banda Sea (166 people). To know more detailed information about the number of people needed per KKPN, please see Appendix 5. The number of training and competent staff needs to be increased and the distribution made more even so that priority protected areas can become more effective.

Table 8. The number of KKPN and KKPD staff needing to take part in competence tests.

No	National and regional marine protected areas (KKPN and KKPD)	Average people needed per topic*	Total number (people)
1	TWP Sawu Sea	16 (0-23)	310
2	TWP Padaido Island	16 (0-23)	312
3	TWP Anambas Islands	15 (0-23)	304
4	TWP Kapoposang	15 (0-23)	307
5	SAP Raja Ampat Islands	9 (1-15)	176
6	SAP Waigeo	8 (5-15)	167
7	TWP Pieh Island	15 (2-23)	290
8	TWP Banda Sea	8 (1-14)	166
9	SAP Aru Tenggara Islands	12 (1-13)	240
10	TWP Gili Ayer, Meno, and Trawangan	15 (0-23)	299
11	KKPD East Coast of Weh Island - Sabang	13 (0-23)	251
12	KKPD Sawo Lahewa – North Nias	9 (0-12)	186
13	KKPD Bunga Laut Strait - Mentawai Islands	15 (0-23)	290
14	KKPD Momparang - Belitung Timur Island Clusters	15 (0-23)	297
15	KKPD Kiluan Bay - Lampung	17 (1-23)	344
16	KKM HMAS Perth - Banten	17 (1-23)	342
17	KKPD Penyu Pangumbahan Beach - Sukabumi	14 (0-23)	274
18	KKPD Ujungnegoro Roban - Batang	13 (0-23)	264

19	KKM Benoa Bay	6 (0-12)	115
20	KKPD Nusa Penida - Klungkung	6 (0-12)	117
21	KKPD Gili Tangkong, Gili Nanggu, and Gili Sudak	5 (0-12)	98
22	KKPD Gili Sulat and Lawang - East Lombok Timur	11 (0-23)	211
23	KKPD Selat Pantar - Alor	11 (0-23)	210
24	KKPD Senggora Sepagar	17 (1-23)	345
25	KKPD Kota Baru Tanah Bumbu	17 (2-23)	342
26	KKPD Derawan Islands - Berau	15 (0-23)	298
27	KKPD Tatoareng - Sangihe Islands	8 (0-23)	163
28	KKPD Doboto	17 (2-23)	345
29	KKPD Parigi Muotong	5 (0-8)	91
30	KKPD Banggai Dalaka	5 (0-8)	91
31	KKPD Morowali	4 (0-8)	88
32	KKPD Kei Kecil Island - Maluku Tenggara	10 (0-23)	206
33	KKPD Raja Ampat Islands - Raja Ampat	5 (0-6)	98
34	KKPD Jeen Womom - Tambrau	5 (0-6)	99
35	KKPD Kaimana	5 (0-6)	101
36	KKPD Fak-Fak	5 (0-6)	97
Note: *The number of people needed is average number (minimum number-maximum number)			

WAYS TO HAVE EFFECTIVE CAPACITY BUILDING PROGRAM

Effective capacity development requires special training and courses and/or intensive training. Special training and courses or intensive training must include leadership aspects to build commitment, mental, and spirit for working in MPAs. The program must be in line with human resource capacity building system in the Ministry of Marine Affairs and Fisheries as developed by BPPP, Puslatluh, and Pusdik. The ways or methods that can be implemented to make an MPA more effective are divided into two categories according to an MPA's level or status:

- Red/Yellow to Green Level

Priority marine protected areas that are on Red and Yellow Levels are targeted to become a better-protected area (the management effectiveness status increases to Green Level). At this stage, the appropriate method to use is:

- Tutoring and training,
- Special training and courses (diklat), and
- Certification or competence assessment.

- Green to Blue Level

Different with the previous level, MPAs on Green Level can use the following methods:

- Intensive courses – advanced training and courses,
- Training for trainers,
- Certification or competence assessment, and
- Online or web-based course, benchmarking.

ORGANIZATIONAL STRUCTURE OF MPA BASED ON FUNCTIONS

When an MPA is established, the management organization should have been formed and should have staff running jobs as well as Norms, Standards, Procedures, and Criteria (NPSK) (Widodo, *in prep.*, 2020). All national MPAs have now been established and managed by KKPN Stations and Substations. Referring to Permen PAN No.18/M.PAN/11/2008 about the Guide for the Organization of Technical Units under Ministries and Non-Ministerial Government Institutions, the institutional structure of KKPN technical units is as follows:

- Station
 - o Head (IIb/IIIa)
 - o Administrative sub-division and 3 sections (IVb/IVa)
 - o Functional Working Group
- Substation
 - o Head (IVb/IVa)
 - o Administrations and 2 subsections (Vb/Va)
 - o Functional Working Group

If needed, a level in structure beneath Substation is Post which is led by a Head (Va), helped by administration staff and Functional Working Group.

The institutional structure of KKPD is currently still being developed as an impact of the Law on Decentralization No. 23 the Year 2014. Each province implements an institutional structure that is considered enough for the management of KKPD on a provincial level and the field. The general organizational structure of KKPD can be seen in the following figures (Figures 6 and 7).

Technical unit (UPT) is an independent working unit that carries out certain operational, technical tasks and/or specific supporting technical tasks from its parent organization.

Independent means the unit is given the authority to manage its personnel administration, finance, equipment, and it has stationed separately from the parent organization.

An UPT has the task to carry out operational, technical activities and/or supporting technical activities as well as the implementation of Government's affairs under the responsibility of the parent organization. The responsibility in principle are not developmental and not directly related to the formulation and the determination of public policies.

Technical Unit of Raja Ampat Marine Protected Area Regional General Services Office (Regent's Regulation 7 Year 2011)

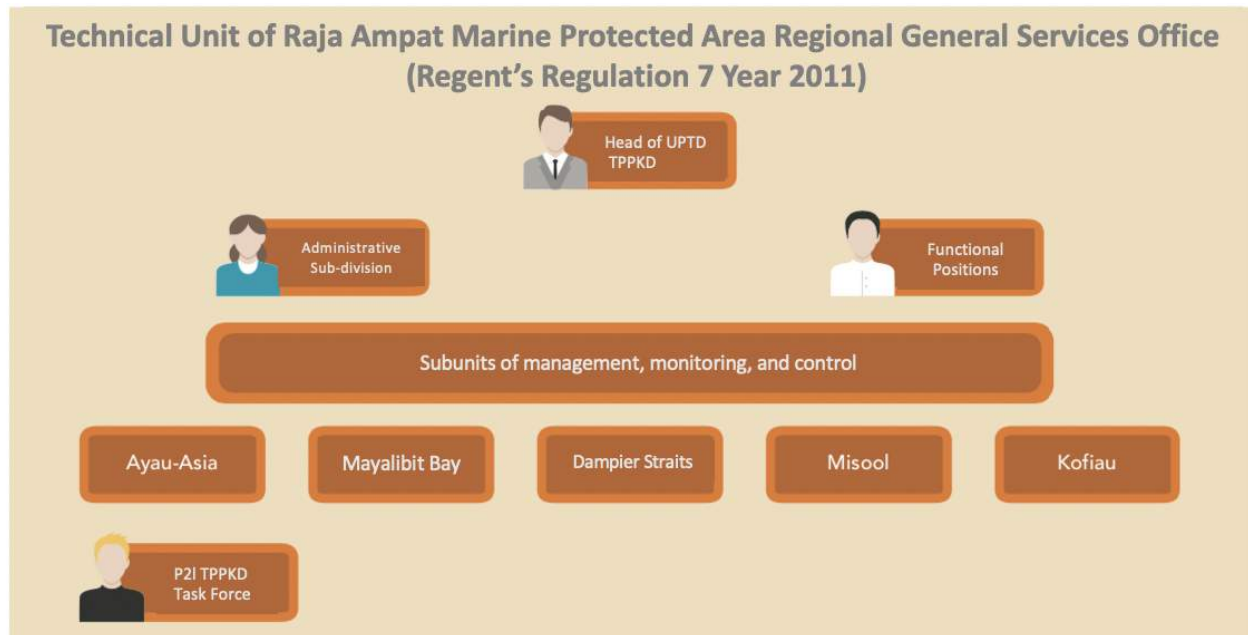


Figure 6. Example structure of regional marine protected area staff in KKP Raja Ampat.

Management Structure of KKPD Nusa Penida

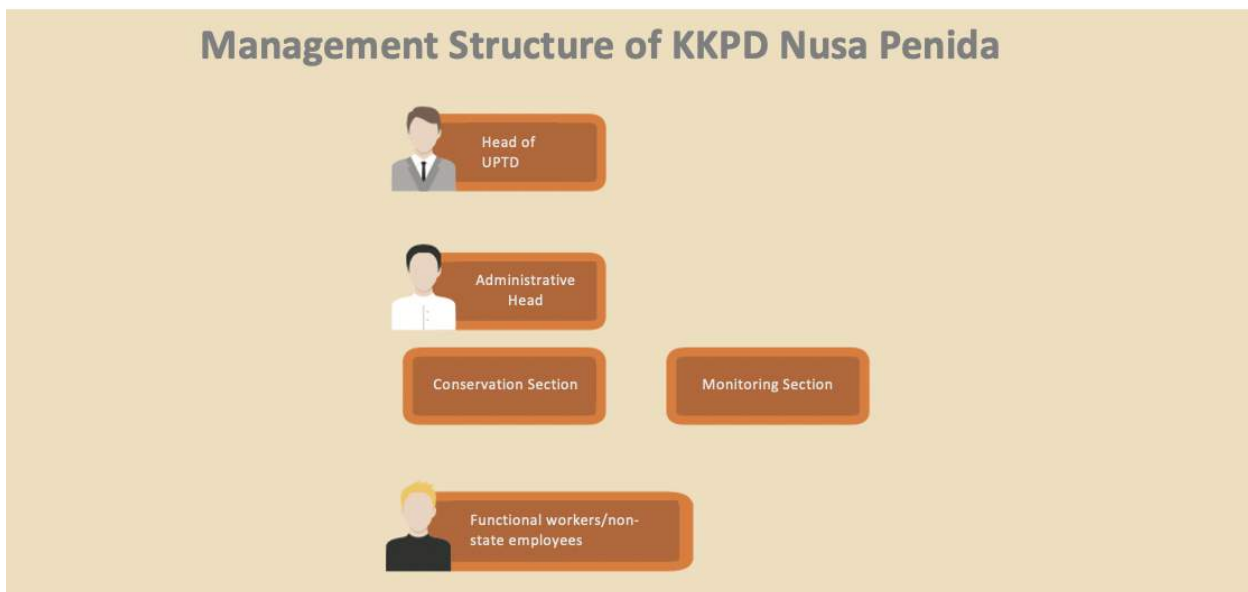


Figure 7. Example structure of regional marine protected area staff in KKPD Nusa Penida.

By contrasting tables of job level, scope and responsibility, as well as institutional structure, it can be seen that:

- Management of KKPN is currently still very centralized and located far away from the MPA's location.
- Job levels of KKPN staff are Senior Managers (Level 3), Middle Manager/Technical Specialists (Level 2), Skilled Workers (Level 1), and Unskilled Workers (Level 0).
- Currently KKPDs are still focusing mostly on designing institutional structure, adapting with new governance (provincial), and filling KKPD staff job vacancies on provincial and field levels.
- Job levels of KKPD Management Technical Unit are mostly on Level 2 (Middle Manager and Technical Specialists), with a few of Skilled Workers on Level 1.

While waiting for the confirmed institutional structure of MPA management bodies, especially KKPD, analysis and development of the roadmap took a more operational approach, which is job-based approach. Job-based approach answers the need for human resources on the field which allows for the operations of aquatic, coasts, and small islands conservation area (Widodo, *in prep.*, 2020).

Based on the discussion held on April 17, 2020, among KKHL, BKKPN Kupang, LKKPN Pekanbaru, and CTC, it was agreed that the competencies needed by the personnel in each MPA would be based on the jobs and adapted to the condition of the MPA. There are four conditions used as scenarios, which are minimum, medium, advanced, and ideal. Each condition requires a different number of MPA personnel (Table 9).

Table 9. Jobs, job description, and the number of human resources needed for each scenario.

Jobs & job description	The number of personnel needed			
	Minimum	Medium	Advanced	Ideal
Coordinator Coordinating jobs on the field and management staff.	1	1	1	1
Administrative and finance Making reports of finance, goods, and service, documenting activities.	2	2	2	2
Biophysical monitoring Routinely collecting biophysical data and making monitoring reports.	1	2	3	4
Social, economic, and cultural monitoring Routinely collecting socioeconomic and cultural data and making monitoring reports.	1	2	2	2
Service and partnership Collecting data of area resource utilization, accepting	1	1	2	2

reports from people, issuing permits for fisheries and tourism.				
Surveillance Coordinating surveillance together with stakeholders, making surveillance reports, and analyzing patterns of resource utilization in the area, reporting violations.	1	2	4	5
Community outreach Preparing materials for awareness raising based on target groups and carrying out outreach activities.	1	1	2	2
Technology and information Using TI tools and applications to collect, process, and analyze data and information.	0	0	1	2
Environmental impact analysis Regularly monitoring special habitats, analyzing carrying capacity and environmental impacts on cases of utilization within the area.	0	0	0	1
TOTAL	8	11	17	20

The total of human resources needed based on Table 9, each KKPN (10 KKPN) needs 200 people for the ideal scenario, 170 people for the advanced scenario, 110 people for the medium scenario, and 80 people for the minimum scenario. Meanwhile, for each KKPN (26 KKPD) needs 520, 442, 286, and 208 for ideal, advanced, medium, and minimum scenario respectively (Fig. 8).

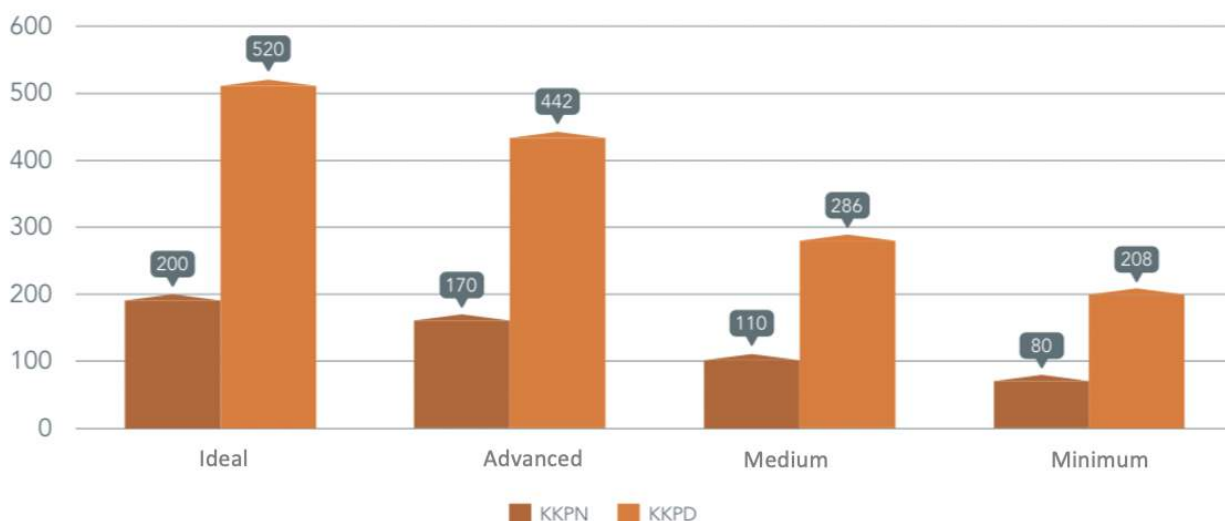


Figure 8. The number of personnel needed to run the aquatic, coasts, and small islands conservation areas (KKP3K) (national MPAs/KKPN and regional MPAs/KKPD) according to jobs.

THE DEVELOPMENT OF FUNCTION-BASED COMPETENCIES

Results obtained from the function-based competencies is that coordinator needs to possess 11 topics out of 20 topic competencies. In comparison, service and partnership personnel need to possess 10 topics out of 20 topic competencies. MPA personnel who are served in the field of biophysical and socioeconomic monitoring, administration and finance, community outreach, surveillance and technology and information need to possess 9, 7, 7, 6, and 2 topics out of 20 topic competencies respectively. The Management Planning for operative personnel or known as MPA Principles and the MPA Effectiveness Monitoring and Evaluation are the two competencies needed the most. The topics of Seagrass and Megabenthos Monitoring are needed only by MPA personnel who are served in the field of biophysical monitoring (Appendix 7).

This analysis also covered the number of human resources who need to undergo training/competence assessment in each competence topic at KKPN. For KKPN staff, the topics that needed to be taken the most are MPA Management Effectiveness Monitoring and Evaluation (70 people), Technology and Information (60 people), and Management Planning for Operative Personnel (57 people). Meanwhile, the topics needed to be taken by least are Management Planning for Technicians and Biophysical Monitoring of Seagrass which are needed by only five people each, and the topic of Biophysical Monitoring of Megabenthos needed by only six people. To see more detailed information for each KKPN, please see Appendix 8.

For KKPD staff, the topics needed to be taken the most are MPA Management Effectiveness Monitoring and Evaluation (182 people), Technology and Information (156 people), and Management Planning for Operative Personnel (145 people). On the other hand, the topic of Biophysical Monitoring in particular for Coral Fish and Megabenthos topics are needed by only 16 and 21 people respectively. Appendix 9 shows the information for each KKPD.

AVAILABILITY OF LEARNING MATERIALS, COMPETENCE STANDARDS, TRAINERS, AND ASSESSORS

In building the capacity of human resources, competence certification, competence standards and test materials, competence assessors, competency-based learning materials, and trainers are needed. Assessment on the availability of learning materials and competence standards were carried out on 20 competence topics (Tabel 10).

Availability of learning materials and competence standards. Learning materials consist of curriculum and modules (both competency-based and non-competency based), while materials refer to presentations, videos, and others. Table 10 presents different results. Topics with complete curriculum/modules and certification standards are Management Planning, Biophysical Monitoring, Socioeconomic Monitoring, and Marine Ecotourism. The three first topics are indeed most relevant in the process of initiation and establishment of MPAs, so they were prioritized in the provision of learning materials. Competences of Community Involvement and Awareness Raising and Communication are needed during the whole process of MPA management. However, there has been no competency-based curriculum/modules issued by the Ministry of Marine Affairs and Fisheries.

Going forward, the existing SKKNI will be used as a direction or guidance in the development of curriculum and modules. Concerning MPA utilization and economic development, there are already learning materials and competence standards for Marine Ecotourism and Fish Cultivation. The topic of Operational Management, Technology and Information, and Human Resource Development can be categorized as essential competencies for the running of an organization or institution. However, it is not the task nor the function of a ministry to possess learning materials about the topics. The existence of SKKNI means competency assessment can be held, but the scheme needs to be provided.

Table 10. Availability of learning materials and competence standards.

No.	Competence topics	Learning material availability		Competence standard availability
		Curriculum, modules	Materials	
1	The principles of marine protected areas or MPA101 or Management Planning for Operative Personnel	+	+	SKKK KP 9/2013
2	Management Planning for Technicians	+	+	
3	Management Planning for Experts	+	+	
4	Biophysical Monitoring – Coral Reef	+	+	SKKNI 638/2016 & 139/2019
5	Biophysical Monitoring – Coral Fish	+	+	SKKNI 638/2016 & 154/2019

6	Biophysical Monitoring – Seagrass Meadow	+	+	SKKNI 638/2016 & 185/2019
7	Biophysical Monitoring – Mangrove	+	+	SKKNI 638/2016 & 227/2019fs
8	Biophysical Monitoring – Megabenthos	+	+	SKKNI 179/2019
9	Socioeconomic aspect monitoring	+	+	SKKNI 638/2016
10	Marine Ecotourism	+	+	SKKNI 99/2018 & 146/2019
11	Management Effectiveness Monitoring and Evaluation	-	+	-
12	Collaborative Management	?	+	-
13	Surveillance of Marine Resource Use	?	+	-
14	Operational Management	?	?	SKKNI 183/2016
15	Technology and information	?	?	SKKNI 183/2016
16	Human Resource Management	?	?	SKKNI 183/2016 & 307/2014
17	Sustainable Funding	+	-	-
18	Fish Cultivation	+	+	SKKNI 77/2016; 283/2016; 1/2018, etc.
19	Community Involvement	-	+	SKKNI 96/2018
20	Community Awareness Raising and Communication	-	+	SKKNI 96/2018; 629/2016

Note: + = available; - = not available; ? = further information needed

The Marine Professional Certification Institution (LSP Kelautan) and the Marine and Fisheries Professional Certification Institution (LSP-KP) provide and have competence assessment in the field of marine affairs and fisheries. LSP Kelautan provides schemes for Management Planning, Marine Ecotourism, Outreach Officer, and Monitoring and Evaluation of Coastal Resources (including Biophysical and Socioeconomic aspects). Meanwhile, LSP-KP provides schemes for Ecosystem Approach for Fisheries Management (EAFM) and MPA Management Planning; the rest are schemes in Capture Fisheries and Fish Cultivation.

Availability of competence assessors. As of 2020, there are 120 assessors under the LSP Kelautan. LSP Kelautan does not distinguish the subjects or topic specializations, so all of their assessors can run assessments on the 20 competence topics. As of 2019 LSP-KP has 2,179 assessors, 132 among them having expertise in marine affairs and the rest in fisheries. In total, the number of assessors in the fisheries field is 252 people. The number is considered sufficient for running the certification schemes that are currently available in the two certification institutions.

Availability of trainers. We recorded the number of trainers available from NGOs that have held training (Carter, 2014). That year, there were 82 trainers distributed unevenly in NGOs (Table 11). However, the data needs to be updated because some of the trainers may be no longer working for the same NGO in the last six years.

Table 11. Availability of trainers for each conservation institution in Indonesia.

No.	Institution	Number (People)
1.	Conservation Indonesia	13
2.	Coral Reef Alliance	2
3.	Coral Triangle Center	16
4.	Manta Watch	4
5.	Rare	8
6.	Reef Check Indonesia	11
7.	Startling Resources	4
8.	The Nature Conservancy	6
9.	Wildlife Conservation Society (WCS)-IP	5
10.	World Wild Fund for Nature (WWF)	3
11.	The Indonesian Nature Foundation (LINI)	4
12.	Terumbu Karang Indonesia (TERANGI)	6
13.	The Ministry of Marine Affairs and Fisheries	137

Source: Carter, 2014; KKP, 2020.

According to the information from Puslatluh, the Ministry of Marine Affairs and Fisheries has 48 Widyaiswara (WI) and 89 Instructors in 2019 (KKP, 2020). Most of them are in capture fisheries and cultivation. However, there is no information about whether any of them is specialized in conservation. From CTC's notes, some WI is able and have the capability of giving training in conservation. Such as 2-3 people in BPPP Ambon and Tegal and 1 person in BPPP Banyuwangi. Some of the WI are alumni of the training held by CTC and NOAA-KKP.

This assessment has not been able to conclude whether there are enough trainers for the 20 topic competencies because the data are not yet sufficient and updated. So far, competence topic numbers 1-11 (Table 10) has been often held by both the government and NGOs, even though the database is limited to conclude on a sufficient number. Trainer exchange also happens between parties that hold the training. For instance, trainers from the government might give training in an activity held by an NGO and vice versa. For the time being, it is estimated that there are enough trainers for the 11 topic competencies. As for the other nine competencies topic number 12-20 (Table 10) still need the latest data about the number of trainer per institution, the topics of training that they are mastered, and the coverage areas.

A PROPOSED CAPACITY BUILDING ROADMAP

Capacity Building roadmap was developed as a directive in the drafting of work plans and budgeting for MPAs, especially in terms of human resource development, both at the central level and at the regional level. The roadmap also serves as a directive in the effort to narrow the gap of human resource quantity and quality between one protected area and another. The roadmap was developed for the national MPA (KKPN) and regional MPA (KKPD) for a period of five years from 2020 to 2024.

In summary, the MPA Capacity Building Roadmap 2020-2024 covers these five milestones as follow (more detailed information can be found in Table 12, Figure 9):

- The minimum and medium conditions are met through training/competence assessment (2020-2022).
- The availability of competency-based curriculum and modules (2021-2022).
- The standardization of competencies (2021-2022).
- Preparation of Marine Protected Area Staff Training and Courses (2023).
- Institutionalization of MPA Staff Training and Courses in BPPP (2024).

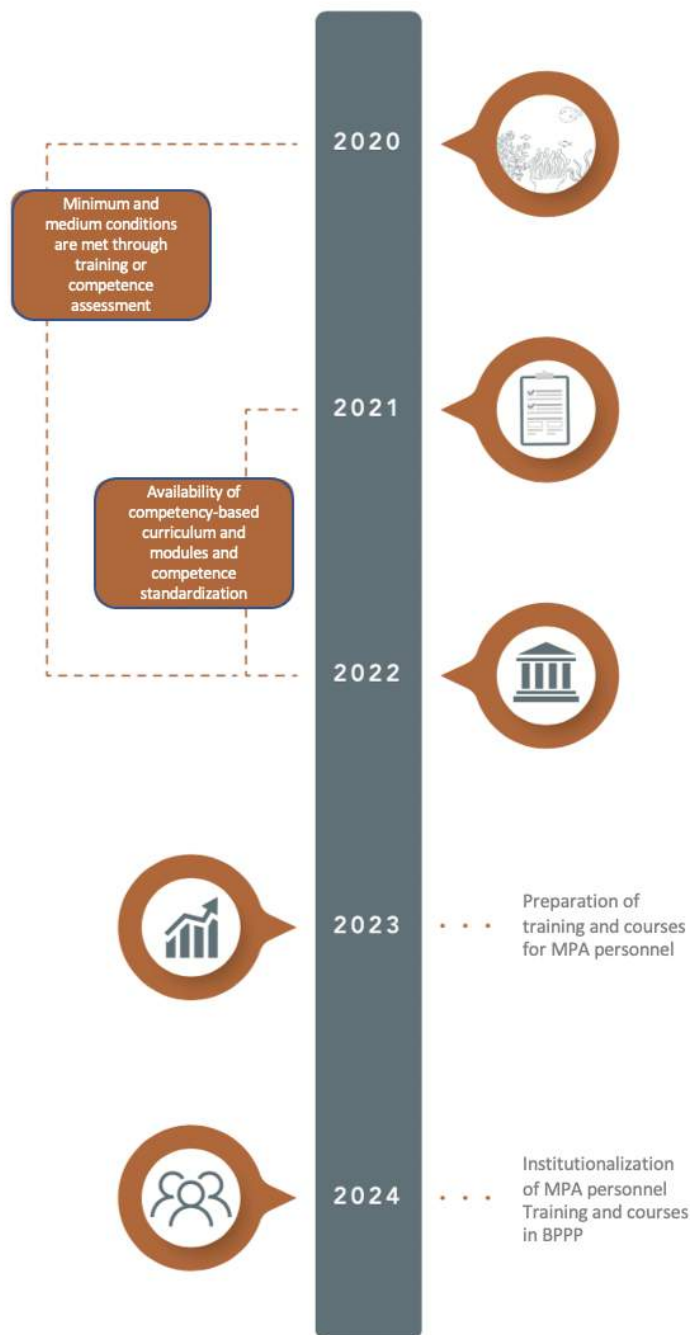


Figure 9. A proposed capacity building roadmap for aquatic, coasts, and small islands conservation areas.

Table 12. MPA Capacity Building Roadmap 2020-2024.

Milestone	Activities	2020	2021	2022	2023	2024
First. The minimum and medium conditions are met through training/competencies assessment	Management planning (3 levels)	KKPN 80 KKPD 145	KKPD 96			
	Biophysical monitoring (5 aspects)	KKPN 67	KKPD 200			
	Socioeconomic monitoring	KKPN 40	KKPD 104			
	Community involvement	KKPN 20 KKPD 52				
	Raising community awareness and communication	KKPN 40 KKPD 104				
	Marine ecotourism		KKPN 32 KKPD 104			
	MPA effectiveness monitoring and evaluation		KKPN 70	KKPD 182		
	Surveillance of natural resource utilization	KKPN 36		KKPD 104		
	Information technology		KPPN 60 KKPD 156			
	Collaborative management		KKPN 30	KKPD 78		
	Sustainable funding		KKPN 40	KKPD 104		
	Fish cultivation		KKPN 30	KKPD 78		
	Operational management		KKPN 30	KKPD 78		
	Human resource management		KKPN 20	KKPD 52		
Second. The availability of competency-based curriculum and modules	The development of competence based curriculum and modules		X			
	Training for trainers		X			
	Improvement or revision of curriculum and modules based on the latest national competence standards			X		

Milestone	Activities	2020	2021	2022	2023	2024
Third. Competence standardization	The making of new regulations or revision of new regulations on standard competence		X			
	Drafting of competence assessment schemes		X	X		
	Technical competence certification of trainers		X			
	Technical competence certification of assessors			X		
Fourth. Preparation of training and courses for marine protected area staff	Formation of ad hoc team					X
	Preparation of legal umbrella for training and courses					X
	Drafting of mechanism, curriculum, and modules for training and courses					X
Fifth. Institutionalization of training and courses	Preparation of facilities and trainers					
	Execution of training and courses					
Note: * number shows the number of people. MPA: Marine Protected Area Calculation of training costs is based on general cost standards from the government.						

Explanation of each milestone is as follows:

The first milestone is to meet the minimum and medium conditions through training/competence assessment (2020-2022). Training/competence assessment for KKPN shall be held in the first two years with the number of training/test participants of 283 people in 2020 and 312 people in 2021. Meanwhile, the number of KKPD MPA personnel who need training from 2020 to 2022 are respectively 301, 660, and 676 people. When the required number of MPA personnel who have been trained and certified is met, the effectiveness of a protected area most likely will improve.

This milestone can act as an answer to the challenge of the lack of national and regional MPA staff who have undergone training or certification. Meanwhile, personnel who have been trained and certified are not proportionally distributed among the MPAs. Having the staff take part in training and competence assessment can then fulfil the EKKP3K requirement to achieve a higher management effectiveness level or status.

As many as 112 training sessions and competence assessment for 20 competence topics will be held to fulfil the need for competent staff in 36 priority MPAs. Based on CTC's experience in holding training, training can run optimally if the class consists of 20 participants and takes 4-5 days. The time needed for a competence assessment depends on the number of competence units being tested. For instance, Management Planning for Operational Personnel with six competence units usually takes two days for 20 participants who are assessed by 4-5 assessors.

The second milestone is the availability of the competency-based curriculum and modules (2021-2022). The target is to have complete learning materials, including curriculum and modules for 20 competence topics that are available by the end of 2022. The learning materials can allow MPA personnel to improve their knowledge, skills, and attitude for ensuring good management.

The milestone shall be a solution for the need for competency-based training that provides modules, curriculum, and achievement measurement for participants. The availability of a competency-based curriculum and modules will also be a solution for employment challenges because they will be derived from the national competence standards (SKKNI) and the national qualification framework (KKNI). The activities that will be carried out are as follow.

- Drafting of curriculum, learning materials, and competency-based modules for eight competence topics, which are MPA Effectiveness Monitoring and Evaluation, Surveillance of Marine Resource Utilization, Technology and Information, Collaborative Management, Operational Management, Human Resource Development, Community Involvement, and Community Awareness Raising and Communication.
- Training for trainers for the eight competences mentioned above as well as the other competencies.
- Improvement or revision of curriculum, modules, and learning materials about the latest SKKNI/SKKK for the topics of Coral Reef, Mangrove, Reef Fish, and Megabenthos Monitoring; Community Perception Monitoring; Coastal Resource Monitoring; and Marine Tourism.

The competency-based curriculum, learning materials, and modules derive from the competence standards that would allow workers to take competence assessment. Within the Ministry of Marine Affairs and Fisheries, the curriculum, learning materials, and competence modules are published by Puslatluh. Hence, a review is needed to assess whether they are in line with SKKNI or not and revision should be carried out if needed.

The third milestone is competence standardization (2021-2022). There are two targets in the standardization of competences. First, the presence of a ministerial decree or regulation on standard competencies required for MPA personnel. The ministerial decree or regulation can boost the efforts of improving MPA personnel as reflected in the working program and budget of the related institutions.

Secondly, testing tools in the form of competence assessment schemes and assessment materials from the referred SKKK and SKKNI is available. Results from the analysis show that competence standards are already available for almost all of the 20 competence topics, except for MPA Effectiveness Monitoring and Evaluation and Collaborative Management.

Activities to be carried out are as follow.

- Drafting minister regulation or decree on MPA personnel standard competencies or at least revise KP3K Directorate General's Decree No. 35 the Year 2014. This activity is vital because the directorate general's decree needs to be updated with current and future needs. The regulation will act as a legal umbrella and guide for ministries, regional governments, and partners in boosting MPA staff capacity building in both the national and the regional levels.
- Drafting assessment schemes for the topics of Human Resource Management, Operational Management, Technology and information, and community awareness raising. These activities will need intensive coordination with the related professional certification institution.
- Assessing competence at the technical level for assessors and trainers. This activity is meant to prepare trainers and assessors possessing competence certifications in the topics to be trained or tested. The assessors and the trainers must at least be competent in the topic of Management Planning (operational personnel, technicians, and experts), Biophysical Monitoring (coral reef, coral fishes, seagrass, mangrove, and megabenthos), Marine Tourism, and Outreach.

The fourth milestone is preparing training and courses for marine protected area staff (2023).

Conservation partners expressed the need for a formal process of MPA staff capacity building through training and courses (Diklat). Based on FGD conducted, Basic Diklat, Advanced Diklat (Technician Diklat), and Managerial Diklat are needed for MPA staff candidate before they are stationed in the field. The Managerial Diklat is for leaders of to-be leaders, aiming for competencies related to decision making. The training and courses will be developed in reference to IUCN's *A Global Register of Competences for Protected Area Practitioners*. This series of initiatives will be developed, starting in 2023.

The expected results obtained from Diklat is that MPA capacity building program for MPA personnel have the same standard at the international level. The activities to be carried out are as follow.

- An ad hoc team that represents the directorate generals and the agencies under the Ministry of Marine Affairs and Fisheries, MPA staff, universities, professional certification institutions, and NGOs will be formed.
- A legal umbrella for the execution of training and courses will be prepared. The legal umbrella is needed to make the training and courses a mandatory requirement for MPA staff candidate before they are stationed in the field.
- Training and courses with the competencies according to the MPA management function will be drafted. The topics of MPA Principles, Biophysical Monitoring (coral reef, coral fish, seagrass, mangrove, and megabenthos), Socio Economic Monitoring, Community Involvement, and Community Awareness Raising and Communication are required topics for the Basic Diklat. Meanwhile, Management Planning and MPA Utilization (capture fisheries, cultivation, and

ecotourism) are required for Advanced Diklat. Materials on conservation is a mandatory requirement for all MPA personnel is covered in the Management Planning topic.

The fifth milestone is the institutionalization/the execution of training and courses for marine protected area personnel (2024). The training and courses are expected to be executed in the second semester of 2024. The activities to be held are as follow.

- Facilities and trainers will be prepared. The Ministry of Marine Affairs and Fisheries have five Fisheries Training and Outreach Stations (BPPP) and one Staff Training and Courses Station (BDA). BPPP and BDA have complete and proper learning facilities. Hence, it is expected that the training and courses will be held in a BPPP or a BDA. Moreover, Wakatobi School might also be used as a place for training and courses.
- Training and courses and competency assessment will be executed.

Well executed training and courses mean that the MPA personnel with competences and full responsibilities will be available and ready to achieve conservation targets in each protected area.

FUNDING

Training and competence assessments will be held for 2,232 staff of national and regional protected areas within three years to reach the first milestone. The budget needed is Rp22,320,000,000 (twenty-two billion three hundred twenty million rupiahs). Ten million rupiah is needed for every staff to undergo training and competence test, including transport fees and accommodation both for participants and assessors. The cost calculation is based on the costs of holding training according to the government's general standard costs (SBU).

The funding can originate from the central government, including the Ministry of Marine Affairs and Fisheries and the Coordinating Ministry of Maritime Affairs and Investment, the regional governments, NGOs, the National Agency for Professional Certification (BNSP, using the subsidy for competence assessment), or other sources. In this document, the costs for the second to the fifth milestones have not been calculated, because the milestones are still flexible.

MAPPING OF PARTNERSHIP SUPPORT IN CAPACITY BUILDING

The involvement and support from various parties are needed to achieve the targets of the recommended roadmap. According to the results of FGD held on April 30, 2020, there are at least twelve partners that have pledged their commitment to support the implementation of the Roadmap for Capacity Building (Table 13). The support from the partners will come in the form of facilitating training, competency assessment, and a combination of training and competency assessments. The support is only for the topic of Management Planning, Biophysical Monitoring, Socio-economic and Monitoring, Marine Ecotourism, Surveillance, and Community Awareness Raising and Communication. The activities are planned to be held in 2020-2024 with various target participants, from the staff of priority MPAs to community members. Meanwhile, funding is obtained from the national budget and grant, including PSKK BNSP and Coremap CTI.

Table 13. The commitments pledged by the partners in capacity building program for MPA personnel.

No.	Institution name	Support form
1	LSP Kelautan	Competency assessment, 5 packages per year (1 package @ 20 people)
2	UNDP ATSEA	EAFM training
3	BPSPL Denpasar	Technical guidance with partners for regional MPAs
4	BPSPL Pontianak	Technical guidance for conservation offices, staff, and practitioners (@27 people per year)
5	KKHL	Training and competency assessment (66 people)
6	LIPI	Training and competency assessment (@ 200 people)
7	LKKPN Pekanbaru	Technical guidance and competency assessment (10-15 people per year)
8	TERANGI	Training and competency assessment @20 people
9	WCS – Indonesia Program	Training
10	Conservation International	ToT for KKPD Bintan and competency assessment with LSP Kelautan
11	Coral Triangle Center	Training and competency assessment @20-25 people per year
12	Yayasan Konservasi Alam Nusantara (YKAN)	Technical guidance on coral identification for BPSPL Denpasar

CONCLUSION

The capacity building of MPA staff in Indonesia has the purpose of creating competent, professional, and motivated human resources to work effectively in managing marine, coastal, and small islands protected areas, and to work together with stakeholders. The summary of this assessment is as follows:

1. In general, MPAs in Indonesia need more personnel and capacity building program, including training and competency assessment to allow more effective MPA management. This is because there is a lack of competent personnel for each MPA and the available competent personnel are not distributed evenly. Staff recruitment is needed to fulfil the number of MPA personnel and overcome the gap. The recruitment process can be carried out through cooperation with other institutions such as the State Employment Agency (BKN), BRSDMKP, and others. Moreover, MPAs personnel need to master all the competencies according to their level, as referred in IUCN Global Register in terms of knowledge, skills, and attitude.
2. The functions and conditions of each MPAs are categorized according to four scenarios (minimum, medium, advanced, and ideal). Based on that, the number of human resources needed for all national MPAs (10 KKPN) is 200 competent staff for the ideal scenario, 170 people for the advanced scenario, 110 people for the medium scenario, and 80 people for the minimum scenario. Meanwhile, regional MPAs (26 KKPD) need 520 people for the ideal scenario, 442, 286, and 288 competent staff for the advanced scenario, medium, and minimum scenario respectively.
3. Twenty priority topics for MPA personnel capacity building to improve the effectiveness of MPA management are the Principles of Marine Protected Areas or Management Planning for Operative Personnel, Management Planning for Technicians, Management Planning for Experts, Community Involvement, Community Awareness Raising and Communication, Biophysical Monitoring of Coral Reef, Reef Fish, Seagrass, Mangrove, and Megabenthos, Socioeconomic and Cultural Aspect Monitoring, Marine Ecotourism, Fish Cultivation, Human Resource Management, Surveillance of Marine Resource Use, Management Effectiveness Monitoring and Evaluation, Collaborative Management, Technology and Information, Operational Management, and Sustainable Funding.
4. The roadmap for MPA personnel capacity building 2020-2024 covers five milestones which are the achievement of minimum and medium conditions =through training/competencies assessment, the availability of module and competency-based curriculum, the establishment of competence standards, the preparations of Diklat for MPA personnel training and courses, and the institutionalization of MPA personnel training into the center of fisheries and extension (BPPP).
5. Staff training and courses should take the form of structured training or certification with the levels of basic (Basic Diklat), medium (Advanced Diklat), and managers (Managerial Diklat). The completion of Basic Diklat is required for all MPA staff. The competencies are Management Planning, Biophysical Monitoring (Coral Reef, Coral Fish, Seagrass Meadow, Mangrove, and Megabenthos), Socioeconomic and Cultural Aspect Monitoring, Community Involvement, and Community Awareness Raising and Communication. Advanced Diklat covers Management Planning (technician and expert levels), Marine Ecotourism, Management Effectiveness Monitoring and Evaluation, Collaborative Management, Technology and information, Fish

Cultivation, and Sustainable Funding. Meanwhile, Managerial Diklat covers two required competencies, which are Operational Management and Human Resource Management.

6. Partners' support in implementing the roadmap has been mapped. Twelve partners have pledged their commitment to implement the Roadmap for Capacity Building by facilitating training, competency assesment, and a combination of training and competency assesment. The partners are CTC, KKHL, LSPK, LSP KP, LIPI, BPSPL Denpasar, BPSPL Pontianak, LKKPN Pekanbaru, TERANGI, WCS Indonesia, CI Indonesia, and YKAN. Support by the partners will be funded through the national budget (APBN) or grant including PSKK BNSP and Coremap CTI.
7. Strategies that can be used for the implementation of the roadmap are as follow.
 - A framework for professionals who manage marine protected areas will be developed. This can be done through activities such as, a) creating a national roadmap for capacity building followed by a Directorate General's decree for the prioritized competence standards, b) exploration and coordination with the Ministry of Home Affairs and the Ministry of Environment concerning the institutional structure of MPA, c) adoption and development of occupational competence standard for both the national level and for specialities, d) preparing professional career path for MPA personnel, and e) assessing the need of personnel for every MPA according to the complexity and coverage area.
 - Capacity building for MPA personnel can be done by education and training programs both formally (education program in universities or training and courses for staff) and informally (tutoring, alumni reunion, and mentoring). Technical and managerial courses, competence assessment, and monitoring of knowledge, attitude, and skill improvement can also be made.
 - Monitoring and resource provision for professional development, which can be done in five stages. First, the creation of a database for conservation training and standard operational procedure for monitoring. Following by capacity building program for MPA personnel in the field of monitoring. Third, preparation of an institution for human resource capacity development in conservation. Next, the calculation of the fund allocation needed. Lastly, regular monitoring on program implementation and its impacts on performance and achievement of conservation targets.

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APPENDIX

Appendix 1. List of priority marine protected areas in Indonesia.

No	Names of National Marine Protected Areas (KKPN)
1	TNP Sawu Sea
2	TWP Padaido Island
3	TWP Anambas Islands
4	TWP Kapoposang
5	SAP Raja Ampat Islands
6	SAP Western Waigeo
7	TWP Pieh Island
8	TWP Banda Island
9	SAP Southeastern Aru
10	TWP Gili Matra
11	KKPD Eastern Coast of Weh Island – Sabang
No	Names of regional marine protected areas (KKPD)
12	KKPD Sawo Lahewa -North Nias
13	KKPD Bunga Laut Strait - Mentawai Islands
14	KKPD Momparang Island Cluster – East Belitung
15	KKPD Kiluan Bay - Tanggamus
16	KKM HMAS Perth - Serang
17	KKPD Penyu Pangumbahan Beach - Sukabumi
18	KKPD Ujungnegoro Roban - Batang
19	KKM Benoa Bay
20	KKPD Nusa Penida - Klungkung
21	KKPD Gili Tangkong, Gili Nanggu, and Gili Sudak – West Lombok
22	KKPD Gili Sulat and Lawang – East Lombok
23	KKPD Pantar Strait - Alor
24	KKPD Senggora Sepagar – West Kotawaringin

25	KKPD Satui, Angsa, Sungai Loban - Tanah Bumbu
26	KKPD Derawan Islands - Berau
27	KKPD Tatoareng - Sangihe Islands
28	KKPD Doboto
29	KKPD Parigi Moutong, Poso, Tojo Una-Una
30	KKPD Banggai Dalaka
31	KKPD Morowali
32	KKPD Kei Kecil Island - Maluku Tenggara
33	KKPD Raja Ampat Islands - Raja Ampat
34	KKPD Jeen Womom - Tambrau
35	KKPD Kaimana
36	KKPD Berau Bay and Nausalasi Bay - Fakfak

DAFTAR HADIR

1. Ulangan KAJIAN PENDAHULUAN RUMAH KOTA PEMERINTAH KAMPUS:

2. Siapa di rumah?

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NO.	NAMA	INSTANSI	LP	TANGGA TANGAN
16	Anangita Sherty	KKHL	P	
17	Petina A	KKHL	P	
18	Supriyadi	KKHL	L	
19	Agus Sapari	KKHL	L	
20	Dahow	KKHL	P	
21	Jati A	KKHL	L	
22				
23				

NO	NAME	POSITION	ORGANIZATION	EMAIL	SIGNATURE
1	Rizki Alfabian S	Telekomunikasi	LESP Serang	perizkiabian@gmail.com	<i>[Signature]</i>
2	Rendani Daulah	Elektronika	KEMH	rendani.daulah@gmail.com	<i>[Signature]</i>
3	Muhammad Afham	Pelatihan	WALHI	afhammuhammad@gmail.com	<i>[Signature]</i>
4	FAHARA A	Kepala	LESP Serang	faharaa@gmail.com	<i>[Signature]</i>
5	Ardian A	Aktivitas	AKRES	ardianardian@gmail.com	<i>[Signature]</i>
6	Anggita Satrio	Revisi	KKR	anggita.satrio@gmail.com	<i>[Signature]</i>
7	Hendrik Satrio	Pelatihan	LESP Serang	hendrik.satrio@gmail.com	<i>[Signature]</i>
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9	Amirul Fakhri A	Kepala	LESP Serang	amirul.fakhri@gmail.com	<i>[Signature]</i>

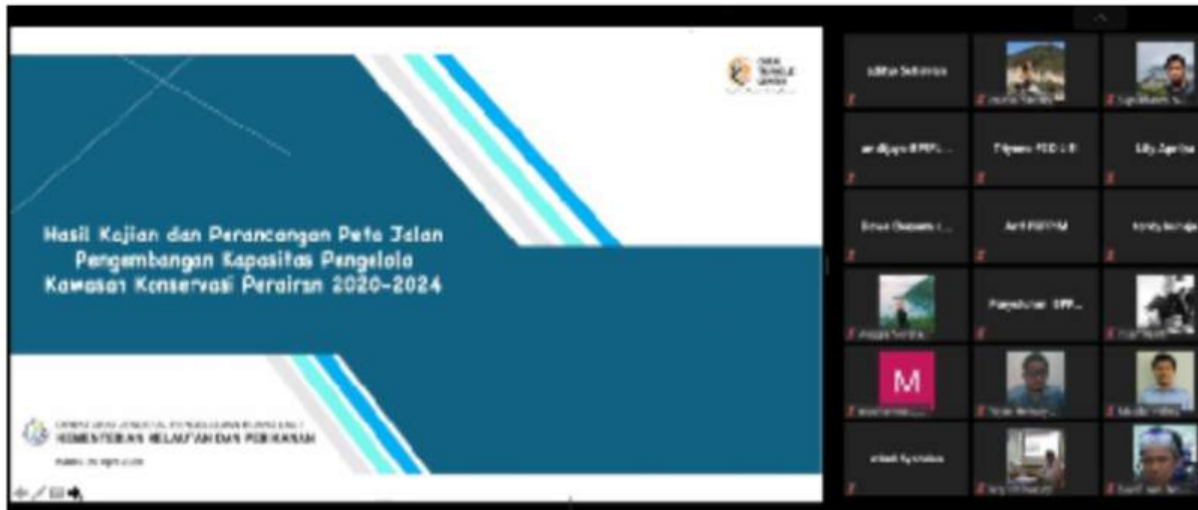
NO	NAME	POSITION	ORGANIZATION
1	Glenn Hancock	Gen Mgrs - A&M	ICPSI - RMC
2	Tony Smith	Gen. Sec. P&E, Des	
3	Forbes Ayers	Gen. Manager	Gen. Mgr
4	James Mann	ICPSI - Des - Bureau	
5	John B. Butler	ICPSI - Des - Bureau	Gen. Mgr
6	Harry Cole	ICPSI - Des - Bureau	ICPSI - Des
7	Walter Smith	ICPSI - Des - Bureau	ICPSI - Des
8	John T. Hill	ICPSI - Des - Bureau	ICPSI - Des
9	Rita Robinson	ICPSI - Des - Bureau	ICPSI - Des
10	W. H.	ICPSI - Des - Bureau	ICPSI - Des

[illegible]

NO	NAME	POSITION	CONTRIBUTION	REMARKS
01	Pada Impianmu!	Petakanan	Estimasi 10	terakhir 10 menit
02	Putri S	Wali Kelas	Wawancara	
03	Gusti-AD	Konvensi KEM	TEMPO	
04	Putri GEM	Manajemen	Perpustakaan	
05	Ayana Ramadhani	Manajemen	Perpustakaan	
06	Ayana Ramadhani	Manajemen	Perpustakaan	
07	Ayana Ramadhani	Manajemen	Perpustakaan	
08	Ayana Ramadhani	Manajemen	Perpustakaan	
09	Ayana Ramadhani	Manajemen	Perpustakaan	
10	Ayana Ramadhani	Manajemen	Perpustakaan	

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8	Elmanur Cakrab	Director	WAF	elmanur@waf.id	
9	B. I. Jagan	Director	WAF	b.ijagan@waf.id	
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NO	NAME	POSITION	ORGANIZATION	##
01	Barry Wargye-son	President		
02	Nihal Andani	Treasurer	WASH	
03	Ben Fekete's P	WASH ID - CSA	WASH	
04	Ringo Andaniyanga	VP/INTL TAC	WASH ID TAC	



Appendix 3. The number of certified MPA personnel for the management planning topic in priority MPAs by the province.

No.	Province with Priority MPAs	The number of personnel certified for management planning		
		Technicians	Operative personnel	Experts
1	Aceh	2	0	0
2	Bali	21	14	0
3	Bangka Belitung	2	0	0
4	West Java	2	0	0
5	Central Java	0	12	0
6	Riau Islands	8	0	0
7	Maluku	4	3	0
8	West Nusa Tenggara	3	34	0
9	East Nusa Tenggara	30	0	0
10	Papua	10	0	0
11	West Papua	2	0	0
12	North Sulawesi	7	0	0
13	South Sulawesi	6	0	0
14	Central Sulawesi	3	0	0
15	East Kalimantan	0	0	0
16	West Sumatra	5	0	2
17	North Sumatra	1	0	0

Data source: KKHL and CTC, 2020.

Appendix 4. Recapitulation of training held by Coral Triangle Center in 2015-2019.

Name of training	Province	Number
Fundamental Marine Protected Area	Bali	13
	Bangka Belitung	1
	Central Java	2
	Maluku	19
	North Maluku	18
	West Nusa Tenggara	16
Marine Protected Area Management Planning	Aceh	1
	Bali	10
	Bangka Belitung	1
	Banten	1
	Bengkulu	1
	DKI Jakarta	2
	Gorontalo	1
	Central Java	2
	East Java	2
	West Kalimantan	1
	Central Kalimantan	1

	North Kalimantan	1
	Riau Islands	3
	Lampung	1
	Maluku	12
	North Maluku	8
	West Nusa Tenggara	1
	East Nusa Tenggara	2
	Papua	1
	West Papua	3
	South Sulawesi	2
	Central Sulawesi	1
	North Sulawesi	3
	North Sumatra	1
Marine Eco-Tourism	Bali	12
	Maluku	6
	Southeastern Sulawesi	2

Appendix 5. The number of people in every KKPN for each competence topic.

No.	KKPN/Competence test topic	TNP Sawu Sea	TNP Padaid o Island	TWP Anambas Islands	TWP Kapoposang	SAP Raja Ampat Islands	SAP Western Waigeo	TWP Pleh Island	TWP Banda Sea	SAP Southeastern Aru Islands	TWP Gili Matra
2020											
1	Management planning (Operative personnel)	20	11	12	13	15	15	12	14	13	0
2	Management planning (Technicians)	0	0	1	2	6	6	4	5	5	0
3	Management planning (Experts)	2	2	2	2	1	1	2	1	1	2
4	Biophysical Monitoring – Coral Reef	2	6	5	0	6	6	5	8	6	6
5	Biophysical Monitoring – Reef Fish	5	6	5	6	6	6	7	8	6	6
6	Biophysical Monitoring – Seagrass	2	5	3	4	5	5	5	6	5	4
7	Biophysical Monitoring – Mangrove	2	5	0	4	5	5	2	0	5	4
8	Biophysical Monitoring – Megabenthos	1	1	0	0	1	1	0	1	1	1

9	Socioeconomic Monitoring	23	23	23	23	12	11	23	11	12	23
10	Community Involvement	23	23	23	23	11	12	11	12	23	23
11	Community Awareness Raising and Communication	23	23	23	23	12	11	12	11	23	23
12	Surveillance of Marine Resource Use	23	23	23	23	12	11	23	0	23	23
2021											
13	Ecotourism	23	23	23	23	0	0	23	12	11	23
14	Management Effectiveness Monitoring and Evaluation	23	23	23	23	12	11	23	11	23	23
15	Collaborative Management	23	23	23	23	12	11	23	11	23	23
16	Technology and Information	23	23	23	23	12	11	23	11	12	23
17	Operational Management	23	23	23	23	12	11	23	11	12	23
18	Human Resource Management	23	23	23	23	12	11	23	11	12	23
19	Sustainable Funding	23	23	23	23	12	11	23	11	12	23
20	Fish Cultivation	23	23	23	23	12	11	23	11	12	23
The number of people needing training/competency assessment		310	3212	304	307	176	167	290	166	240	299

Appendix 6. The number of people in every KKPD for each competence topic.

No.	KKPD/Competence test topic	KKPD East Coast of Weh Island- Sabang	KKPD Sawo Lahewa – North Nias	KKPD Bunga Strait – Mentawai Islands	KKPD Momparan g Island Cluster – East Belitung	KKPD Kiluan Bay – Lampung	KKPD HMAS Perth – Banten	KKPD Peny Pangumbahan Beach - Sukabumi	KKPD Ujungn goro Roban – Batang	KKM Benoa Bay
2020										
1	Management planning (Operative personnel)	17	8	15	17	23	23	18	6	0
2	Management planning (Technicians)	2	5	2	2	21	19	1	3	0
3	Management planning (Experts)	2	1	0	2	2	2	2	2	2
4	Biophysical Monitoring – Coral Reef	7	11	6	7	7	7	7	7	4
5	Biophysical Monitoring – Reef Fish	6	12	6	6	6	6	7	6	3
6	Biophysical Monitoring – Seagrass	5	11	4	5	6	6	4	5	1
7	Biophysical Monitoring – Mangrove	4	11	4	4	2	2	4	4	2
8	Biophysical Monitoring – Megabenthos	1	1	0	1	1	1	1	1	0
9	Socioeconomic Monitoring	23	12	23	23	23	23	23	23	12
10	Community Involvement	23	11	23	23	23	23	23	23	11
11	Community Awareness Raising and Communication	23	12	23	23	23	23	23	23	12
12	Surveillance of Marine Resource Use	23	12	23	23	23	23	23	23	12

2021										
13	Ecotourism	0	11	23	23	23	23	23	23	0
14	Management Effectiveness Monitoring and Evaluation	23	11	23	23	23	23	23	23	0
15	Collaborative Management	23	11	23	23	23	23	23	23	12
16	Technology and Information	23	11	23	23	23	23	23	23	11
17	Operational Management	23	11	23	23	23	23	23	23	11
18	Human Resource Management	23	11	23	23	23	23	23	23	11
19	Sustainable Funding	0	0	0	0	23	23	0	0	0
20	Fish Cultivation	0	12	23	23	23	23	0	0	11
The number of people needing training/competency assessment		251	186	290	297	344	342	274	264	115

No.	KKPD/Competence test topic	KKPD Nusa Penida – Klungkung	KKPD Gili Tangkong, Gili Nanggu, and Gili Sudak – West Lombok	KKPD Gili Sulat and Lawang – East Lombok	KKPD Pantar Strait – Alor	KKPD Senggora Sepagar	KKPD Kotabaru Tanah Bumbu	KKPD Derawan Islands – Berau	KKPD Tatoareng – Sangihe Islands
2020									
1	Management planning (Operative personnel)	0	4	4	0	23	18	17	8
2	Management planning (Technicians)	0	12	12	16	21	23	3	4
3	Management planning (Experts)	2	1	1	1	2	2	2	1

4	Biophysical Monitoring – Coral Reef	5	2	2	6	5	8	7	5
5	Biophysical Monitoring – Reef Fish	3	1	1	6	6	7	6	5
6	Biophysical Monitoring – Seagrass	1	0	0	5	5	4	5	4
7	Biophysical Monitoring – Mangrove	1	1	1	5	6	2	4	4
8	Biophysical Monitoring – Megabenthos	0	1	1	1	1	2	1	1
9	Socioeconomic Monitoring	11	9	23	16	23	23	23	11
10	Community Involvement	12	9	23	16	23	23	23	12
11	Community Awareness Raising and Communication	11	9	23	16	23	23	23	11
12	Surveillance of Marine Resource Use	11	9	23	16	23	23	23	11
2021									
13	Ecotourism	0	9	0	23	23	23	23	12
14	Management Effectiveness Monitoring and Evaluation	1	3	4	12	23	23	23	12
15	Collaborative Management	11	0	23	23	23	23	23	11
16	Technology and Information	12	1	23	16	23	23	23	12
17	Operational Management	12	9	23	16	23	23	23	12
18	Human Resource Management	12	9	23	16	23	23	23	12
19	Sustainable Funding	0	0	0	0	23	23	0	0
20	Fish Cultivation	12	9	0	0	23	23	23	23

The number of people needing training/competency assessment	117	98	211	210	345	342	298	163
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No.	KKPD/Competence test topic	KKPD Doboto	KKPD Parigi Muotong	KKPD Banggai Dalaka	KKPD Morowali	KKPD Kei Kecil Island – Southeast Maluku	KKPD Raja Ampat Islands – Raja Ampat	KKPD Jeen Womom – Tamberauw	KKPD Kalimana	KKPD Fak-fak
2020										
1	Management planning (Operative personnel)	23	6	6	6	10	5	6	6	6
2	Management planning (Technicians)	21	1	1	0	8	6	6	6	5
3	Management planning (Experts)	2	2	1	0	1	1	1	1	1
4	Biophysical Monitoring – Coral Reef	7	2	2	2	5	6	6	6	5
5	Biophysical Monitoring – Reef Fish	4	1	2	2	5	5	5	5	6
6	Biophysical Monitoring – Seagrass	4	1	1	1	2	5	5	6	5
7	Biophysical Monitoring – Mangrove	5	0	1	1	2	6	6	5	6
8	Biophysical Monitoring – Megabenthos	3	8	0	0	1	1	1	1	1
9	Socioeconomic Aspect monitoring	23	7	8	8	16	6	6	6	5
10	Community Involvement	23	8	7	8	16	5	6	6	6
11	Community Awareness Raising and Communication	23	8	7	8	16	6	5	6	6
12	Surveillance of Marine Resource Use	23	8	7	8	16	5	6	6	6

2021										
13	Ecotourism	23	8	7	8	16	6	5	6	6
14	Management Effectiveness Monitoring and Evaluation	23	8	7	8	5	6	6	6	5
15	Collaborative Management	23	7	8	8	23	5	6	6	6
16	Technology and Information	23	8	8	7	16	6	5	6	6
17	Operational Management	23	7	8	8	16	6	6	6	5
18	Human Resource Management	23	8	8	7	16	6	5	6	6
19	Sustainable Funding	23	0	0	0	0	0	0	0	0
20	Fish Cultivation	23	0	0	0	16	0	6	6	5
The number of people needing training/competency assessment		345	91	91	88	206	98	99	101	97

Appendix 7. Competences required for MPA jobs.

N o.	KKPN/Competence test topic	Coordinator	Administration and finance	Biophysical monitoring	Socioeconomic monitoring	Environmental impact analysis	Service and partnership	Monitoring	Information technology	Community outreach
2020										
1	Management planning (Operative personnel)	0	1	1	1	0	1	1	1	1
2	Management planning (Technicians)	1	0	1	1	1	0	0	0	0
3	Management planning (Experts)	1	0	0	1	1	0	0	0	0

4	Biophysical Monitoring – Coral Reef	1	0	1	0	1	0	0	0	0
5	Biophysical Monitoring – Reef Fish	1	0	1	0	0	0	0	0	0
6	Biophysical Monitoring – Seagrass	0	0	1	0	0	0	0	0	0
7	Biophysical Monitoring – Mangrove	0	0	1	0	1	0	0	0	0
8	Biophysical Monitoring – Megabenthos	0	0	1	0	0	0	0	0	0
9	Socioeconomic Monitoring	1	0	0	1	1	0	0	0	1
10	Community Involvement	0	0	0	0	0	1	0	0	1
11	Community Awareness Raising and Communication	0	0	0	1	0	1	1	0	1
12	Surveillance of Marine Resource Use	1	0	0	1	1	0	1	0	0
13	Ecotourism	0	1	0	1	0	1	0	0	1
14	Management Effectiveness Monitoring and Evaluation	1	0	1	1	1	1	1	0	1
15	Collaborative Management	1	0	0	0	0	1	1	0	0
16	Technology and Information	0	1	1	1	0	1	1	1	0
17	Operational Management	1	1	0	0	0	1	0	0	0

18	Human Resource Management	1	1	0	0	0	0	0	0	0
19	Sustainable Funding	1	1	0	1	0	1	0	0	0
20	Fish Cultivation	0	1	0	0	0	1	0	0	1
The number of people needing training/ competency assessment		11	7	9	9	7	10	6	2	7

Appendix 8. The number of people in every KKPN for each competence topic based on jobs.

No.	KKPN/Competence test topic	TNP Sawu Sea	TNP Padaid o Island	TWP Anambas Islands	TWP Kapoposang	SAP Raja Ampat Islands	SAP Western Waigeo	TWP Pleh Island	TWP Banda Sea	SAP Southeastern Aru Islands	TWP Gili Matra
2020											
1	Management planning (Operative personnel)	7	7	7	7	7	7	7	4	4	00
2	Management planning (Technicians)	0	0	0	0	2	2	0	0	0	1
3	Management planning (Experts)	2	2	2	2	2	2	0	2	2	2
4	Biophysical Monitoring – Coral Reef	0	3	3	0	3	3	2	3	3	3
5	Biophysical Monitoring – Reef Fish	2	2	2	2	2	2	2	2	2	2
6	Biophysical Monitoring – Seagrass	0	1	0	0	1	1	0	1	1	0
7	Biophysical Monitoring – Mangrove	0	2	0	1	2	2	0	2	2	2
8	Biophysical Monitoring – Megabenthos	0	1	0	0	1	1	0	1	1	1
9	Socioeconomic Monitoring	4	4	4	4	4	4	4	4	4	4
10	Community Involvement	2	2	2	2	2	2	2	2	2	2

11	Community Awareness Raising and Communication	4	4	4	4	4	4	4	4	4	4
12	Surveillance of Marine Resource Use	4	4	4	4	4	4	4	0	4	4
2021											
13	Ecotourism	4	4	4	4	0	0	4	4	4	4
14	Management Effectiveness Monitoring and Evaluation	7	7	7	7	7	7	7	7	7	7
15	Collaborative Management	3	3	3	3	3	3	3	3	3	3
16	Technology and Information	6	6	6	6	6	6	6	6	6	6
17	Operational Management	3	3	3	3	3	3	3	3	3	3
18	Human Resource Management	2	2	2	2	2	2	2	2	2	2
19	Sustainable Funding	4	4	4	4	4	4	4	4	4	4
20	Fish Cultivation	3	3	3	3	3	3	3	3	3	3
The number of people needing training/competency assessment		57	64	60	58	62	62	57	57	57	61

Appendix 9. The number of people in every KKPD for each competence topic based on jobs.

No .	KKPD/Competence test topic	KKPD Eastern Coast of Weh Island-Saban g	KKPD Sawo Lahewa – North Nias	KKPD Bunga Strait – Mentawai Islands	KKPD Momparang Island Cluster – East Belitung	KKPD Kiluan Bay – Lampung	KKPD HMAS Perth – Bantenn	KKPD Penyu Pangumbahan Beach - Sukabumi	KKPD Ujungnegoro Roban – Batang	KKM Benoa Bay
2020										
1	Management planning (Operative personnel)	7	7	7	7	7	7	7	0	7

2	Management planning (Technicians)	2	3	4	2	2	0	2	4	4
3	Management planning (Experts)	2	2	2	2	2	0	2	2	2
4	Biophysical Monitoring – Coral Reef	3	3	2	3	3	3	3	3	3
5	Biophysical Monitoring – Reef Fish	2	2	2	2	2	2	2	2	2
6	Biophysical Monitoring – Seagrass	1	1	0	1	0	1	1	1	1
7	Biophysical Monitoring – Mangrove	2	2	0	2	2	2	2	2	2
8	Biophysical Monitoring – Megabenthos	1	1	0	1	1	1	1	1	0
9	Socioeconomic Monitoring	4	4	4	4	4	4	4	4	4
10	Community Involvement	2	2	2	2	2	2	2	2	2
11	Community Awareness Raising and Communication	4	4	4	4	4	4	4	4	4
12	Surveillance of Marine Resource Use	6	6	6	6	6	6	6	6	6
2021										
13	Ecotourism	4	4	4	4	4	4	4	4	4
14	Management Effectiveness Monitoring and Evaluation	7	7	7	7	7	7	7	7	7
15	Collaborative Management	3	3	3	3	3	3	3	3	3
16	Technology and Information	4	4	4	4	4	4	4	4	4

17	Operational Management	3	3	3	3	3	3	3	3	3
18	Human Resource Management	2	2	2	2	2	2	2	2	2
19	Sustainable Funding	4	4	4	4	4	4	4	4	4
20	Fish Cultivation	3	3	3	3	3	3	3	3	3
The number of people needing training/competency assessment		66	67	63	66	65	62	66	61	67

No.	KKPD/Competence test topic	KKPD Nusa Penida – Klungkung	KKPD Gili Tangkong, Gili Nanggu, and Gili Sudak – West Lombok	KKPD Gili Sulat and Lawang – East Lombok	KKPD Pantar Strait – Alor	KKPD Senggora Sepagar	KKPD Kotabaru Tanah Bumbu	KKPD Derawan Islands – Berau	KKPD Tatoareng – Sangihe Islands
2020									
1	Management planning (Operative personnel)	0	0	0	7	7	2	6	7
2	Management planning (Technicians)	0	1	1	0	2	4	4	0
3	Management planning (Experts)	2	2	2	2	2	2	2	2
4	Biophysical Monitoring – Coral Reef	2	3	3	0	3	3	3	3
5	Biophysical Monitoring – Reefl Fish	2	2	2	2	2	2	1	2
6	Biophysical Monitoring – Seagrass	0	0	0	0	1	1	0	1
7	Biophysical Monitoring – Mangrove	2	2	2	0	1	2	0	1
8	Biophysical Monitoring – Megabenthos	0	1	1	0	0	1	1	1
9	Socioeconomic Monitoring	4	4	4	4	4	4	4	4

10	Community Involvement	2	2	2	2	2	2	2	2
11	Community Awareness Raising and Communication	4	4	4	4	4	4	4	4
12	Surveillance of Marine Resource Use	6	6	6	6	6	6	6	6
2021									
13	Ecotourism	4	4	4	4	4	4	4	4
14	Management Effectiveness Monitoring and Evaluation	7	7	7	7	7	7	7	7
15	Collaborative Management	3	3	3	3	3	3	3	3
16	Technology and Information	4	4	4	4	4	4	4	4
17	Operational Management	3	3	3	3	3	3	3	3
18	Human Resource Management	2	2	2	2	2	2	2	2
19	Sustainable Funding	4	4	4	4	4	4	4	4
20	Fish Cultivation	3	3	3	3	3	3	3	3
The number of people needing training/test		54	57	57	57	66	63	63	66

No.	KKPN/Competence test topic	KKPD Doboto	KKPD Parigi Muotong	KKPD Banggai Dalaka	KKPD Morowali	KKPD Kei Kecil Island – Southeast Maluku	KKPD Raja Ampat Islands – Raja Ampat	KKPD Jeen Womom – Tambrau	KKPD Kalimana	KKPD Fak-fak
2020										
1	Management planning (Operative personnel)	7	7	7	7	4	7	7	7	7

2	Management planning (Technicians)	2	1	1	1	0	2	0	2	2
3	Management planning (Experts)	2	2	2	2	2	2	2	2	2
4	Biophysical Monitoring – Coral Reef	3	2	2	2	3	3	3	3	3
5	Biophysical Monitoring – Reef Fish	2	2	2	2	2	2	2	2	2
6	Biophysical Monitoring – Seagrass	1	0	0	0	1	1	1	1	1
7	Biophysical Monitoring – Mangrove	2	1	1	1	2	2	2	2	2
8	Biophysical Monitoring – Megabenthos	1	1	1	1	1	1	1	1	1
9	Socioeconomic Monitoring	4	4	4	4	4	4	4	4	4
10	Community Involvement	2	2	2	2	2	2	2	2	2
11	Community Awareness Raising and Communication	4	4	4	4	4	4	4	4	4
12	Surveillance of Marine Resource Use	6	6	6	6	6	6	6	6	6
13	Ecotourism	4	4	4	4	4	4	4	4	4
14	Management Effectiveness Monitoring and Evaluation	7	7	7	7	7	7	7	7	7
15	Collaborative Management	3	3	3	3	3	3	3	3	3
16	Technology and Information	4	4	4	4	4	4	4	4	4
17	Operational Management	3	3	3	3	3	3	3	3	3
18	Human Resource Management	2	2	2	2	2	2	2	2	2

19	Sustainable Funding	4	4	4	4	4	4	4	4	4
20	Fish Cultivation	3	3	3	3	3	3	3	3	3
The number of people needing training/competency assessment		66	62	62	62	61	66	64	66	66

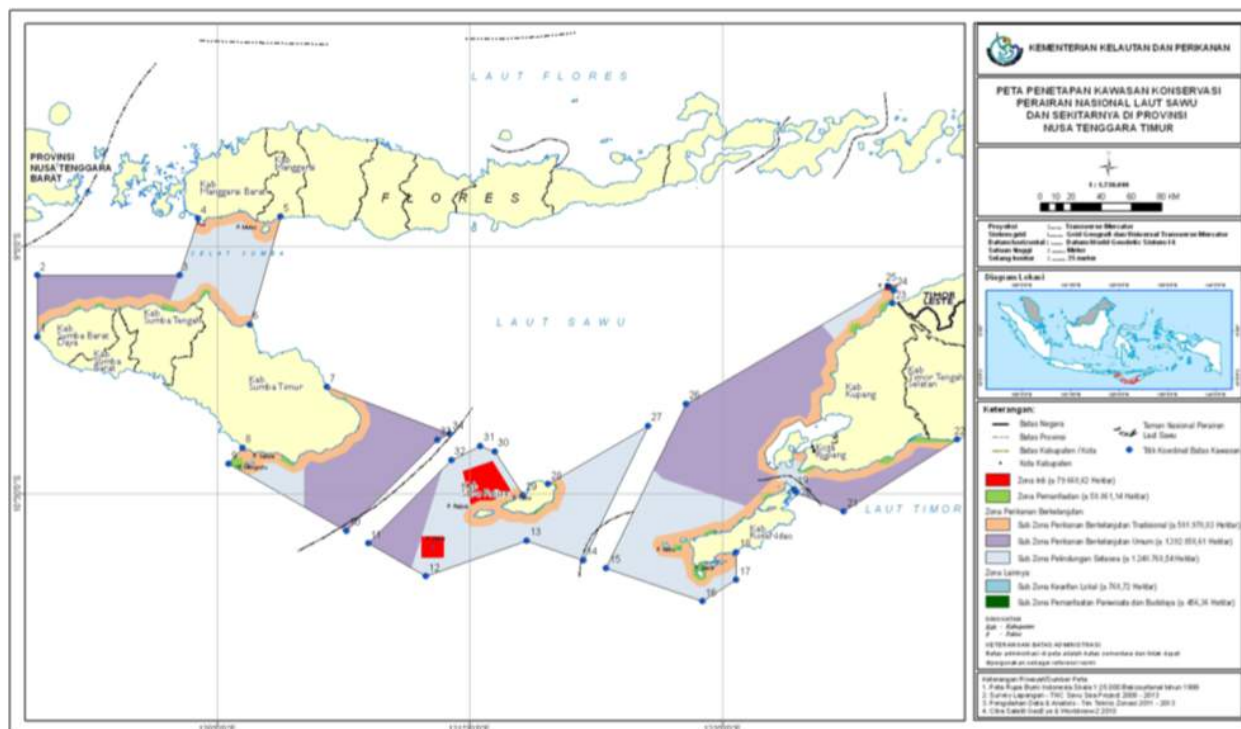
Appendix 10. Short profiles of priority marine protected areas in Indonesia.

TNP Sawu Sea

Marine National Park (TNP) Sawu Sea directly shares a border with the western coast of Timor Leste and the area of the Indonesian Throughflow (Arlindo). This geographical position is beneficial because it translates into a high abundance of marine resources and diverse fish. TNP Sawu Sea is also an important habitat to charismatic species such as manta rays, dugongs, turtles, and various marine mammals. TNP Sawu Sea is reserved with the KEPMEN KP number KEP.38/MEN/2009 with an area of 3,521,130.01 hectares.

The park consists of Sumba Strait Maritime Area (567,165.64 hectares) and Sabu-Rote-Timor-Batek Islands Maritime Area (2,953,964.37 hectares). The maritime area of Sumba Strait and its surroundings includes six regencies, namely East Sumba, West Sumba, Central Sumba, Southwest Sumba, Manggarai, and West Manggarai. Meanwhile, the maritime area of Sabu-Rote-Timor-Batek Islands and their surroundings includes four regencies, namely the East Sumba, Rote Ndao, Kupang and the city of Kupang, and South Central Timor. Five years after the Reservation Decree, TNP Sawu Sea was established by the Minister of Maritime Affairs and Fisheries through SK Number 5/KEPMEN-KP/2014 with zonation plan Number. 6/KEPMEN-KP/2014, which can be accessed in full here

(https://peraturan.bkpm.go.id/jdih/userfiles/batang/6_KEPMEN_KP2014.pdf).

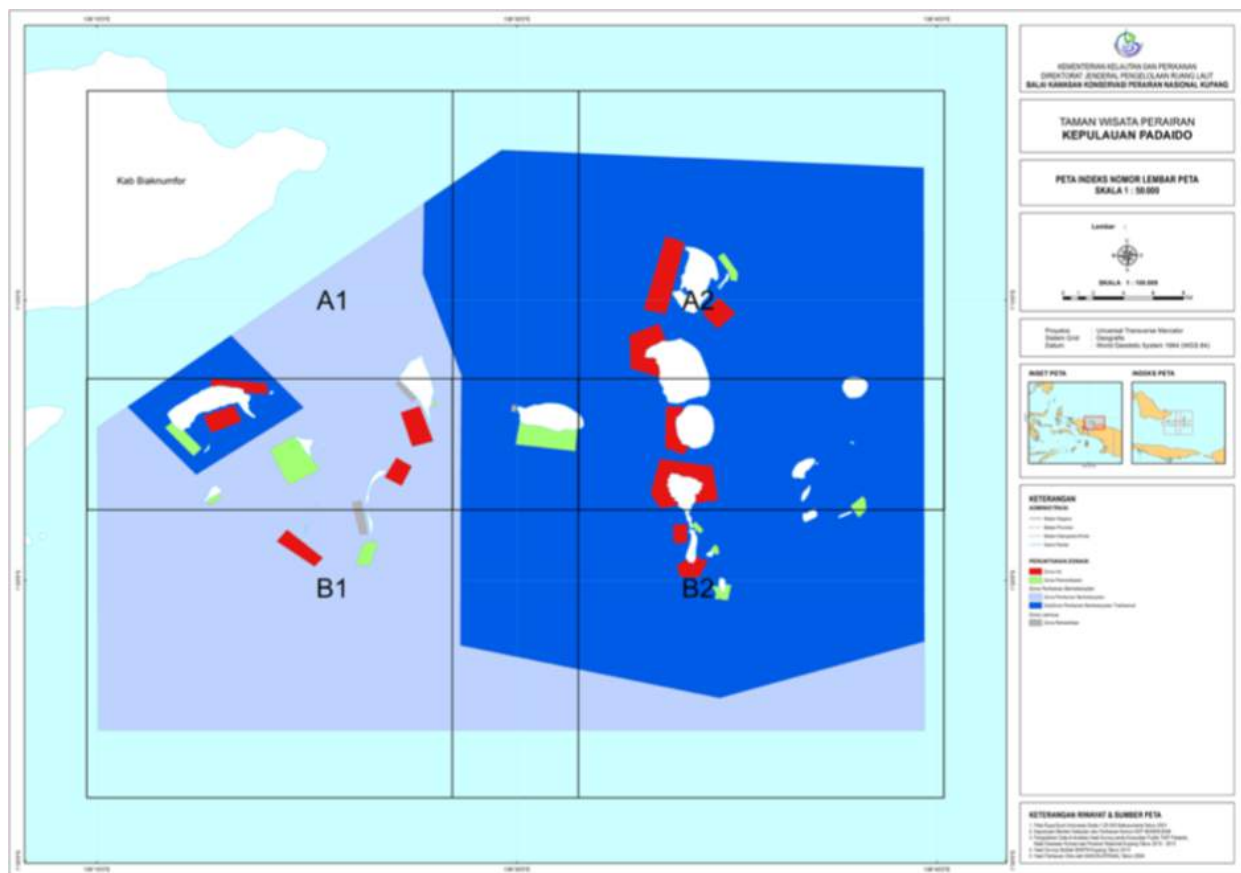


TWP Padaido Island

Marine Tourism Park (TWP) Padaido Island was established with the KEPMEN Number KEP.68/MEN/2009. TWP Padaido Island and the sea around it in the province of Papua has an area of

about 183,000 hectares. The island is part of the Biak Numfor Regency. Geographically, TWP Padaido Island is to the north of Cenderawasih Bay and borders the Pacific Ocean. To the south, it borders the Yapen Strait; East Biak District is to its west while the Pacific Ocean is to its east.

TWP Padaido Island boasts various protected animals, especially land animals such as sulphur-crested cockatoo (*Cacatua galerita*), white-bellied sea eagle (*Haliaeetus leucogaster*), common tern (*Sterna hirundo*), osprey (*Pandion haliaetus*), and others. As for marine animals, TWP Padaido Island has four types of coral reefs, namely fringing reefs, barrier reefs, atolls, and patch reefs with ninety species of stony corals. Furthermore, nine species of seagrasses—*Thalassia hemprichii*, *Enhalus acoroides*, *Cymodocea serrulata*, *C. rotundata*, *Halodule universis*, *H. pimfolia*, *Holophtla ovalis*, *H. spinulosa*, and *Syringodium isoetifolium*—can be found in relatively well condition. According to studies, the management of TWP Padaido Island is regulated in zoning plan Number 62/KEPMEN-KP/2014 that can be accessed in full here (<http://jdih.kkp.go.id/peraturan/62-kepmen-kp-2014.pdf>).

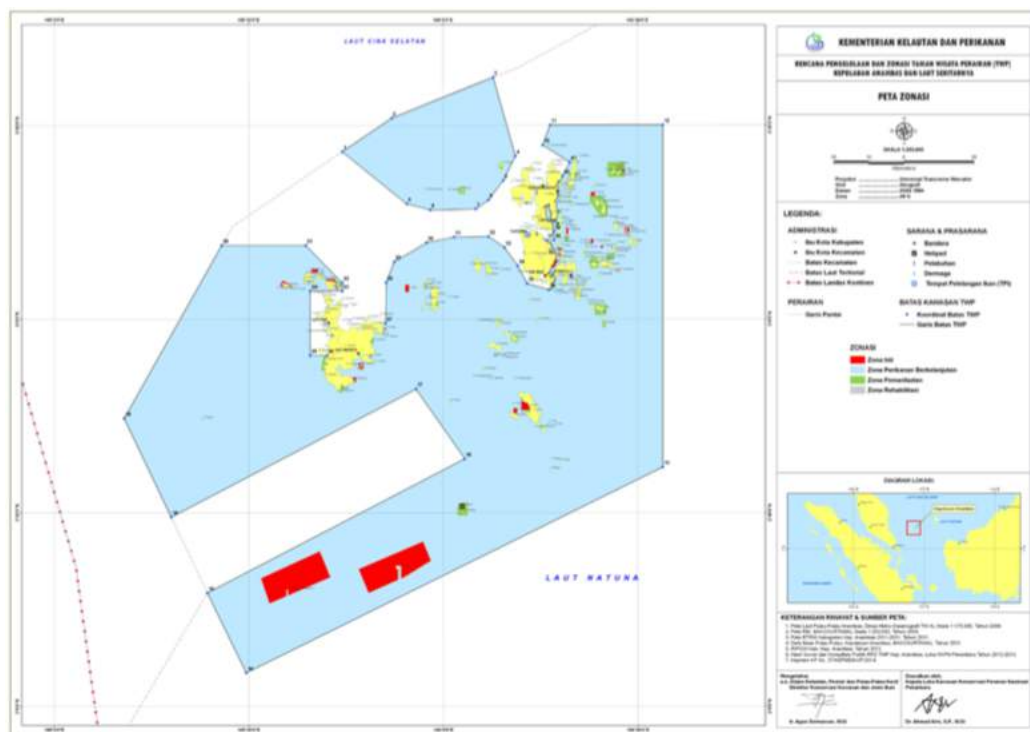


TWP Anambas Islands

TWP Anambas Islands was reserved as a protected area through the KEPMEN KP Number KEP.35/MEN/2011 with an area of 1,262,686.2 hectares. The islands are surrounded by the Natuna Sea and are distanced far from each other in the province of the Riau Islands. In 2013, National Marine Protected Area Substation (LKKPN) Pekanbaru carried out observation in 116 sites and found that the condition of the coral cover can be categorized as medium to very good in 113 observation sites. As many as 578 species of reef fish were identified, with five new species strongly suspected: *Stalix* sp.,

Heteroconger sp., *Myersina* sp., *Paracheilinus* sp., and *Helcogramma* sp. Other than catching fish traditionally, fishermen in TWP Anambas Islands also cultivate reef fish such as trout, grouper, and napoleon.

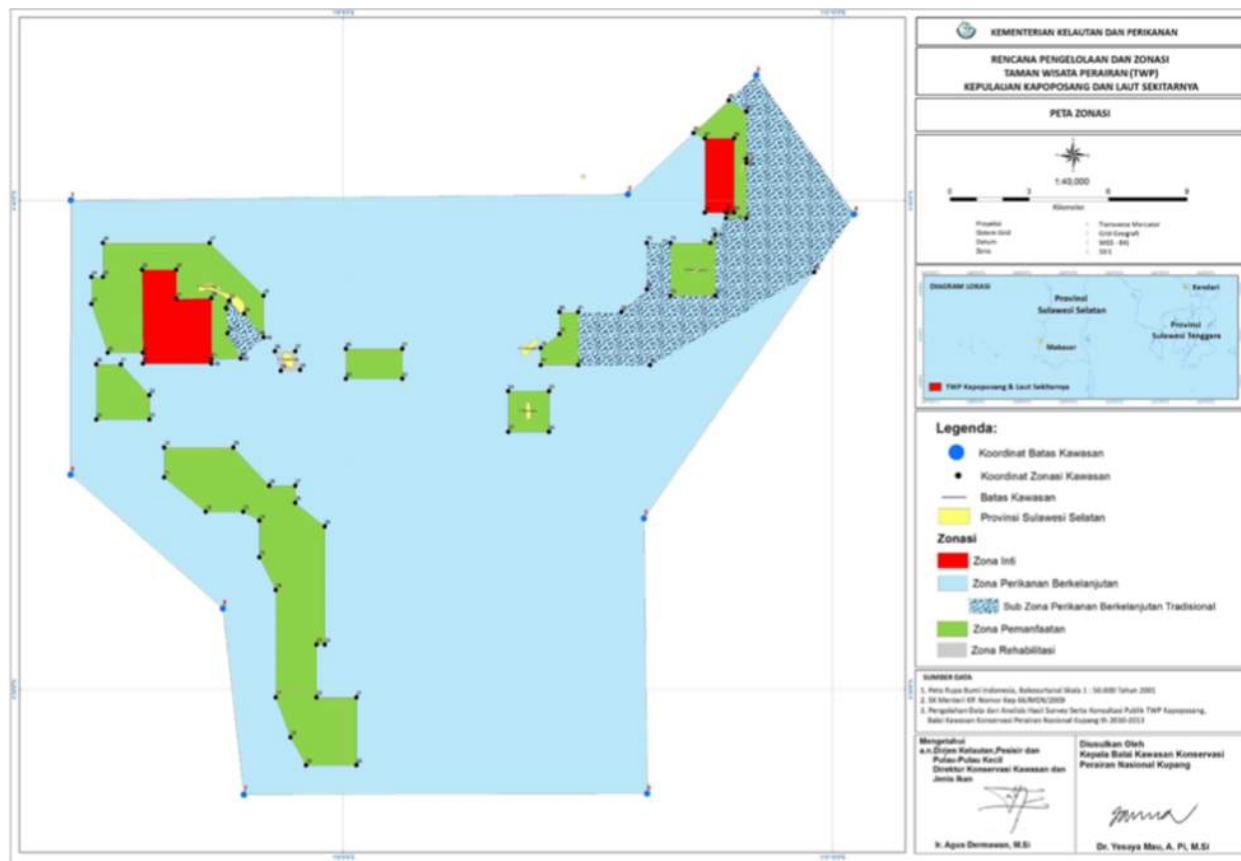
Beautiful natural scenery and several wonderful diving spots completed with waterfalls, hill-climbing activities, traditional dances, and historical locations of Vietnamese refugee camp make up the tourism potentials of TWP Anambas Islands. However, the education level of the people living in the area should be a shared concern in the management of the potentials, since 66.9% of the population only graduated from elementary school. Another challenge is destructive fishing activities that still uses damaging equipment and materials such as bombs, potassium, trawls, and compressors. Considering those, to manage the potentials the Ministry of Marine Affairs and Fisheries of the Republic of Indonesia decreed the zoning plan for TWP Anambas Islands in 2014, Number 53/KEPMEN-KP/2014 which can be accessed in full here (<http://jdih.kkp.go.id/peraturan/53-kepmen-kp-2014-ttg-pengelolaan-zonasi-taman-wisata-.....pdf>).



TWP Kapoposang

TWP Kapoposang was established with the KEPMEN KP Number KEP.66/MEN/2009 with zoning plan regulated in KEPMEN KP Number Kep.59/MEN/2014. TWP Kapoposang Islands and the surrounding sea covers an area of 50,000 hectares in South Sulawesi and consists of the islands of Kapoposang, Papandangan, Tambakhulu, Gondong Bali, Pamanggangan, and Suranti. TWP Kapoposang is located in Liukang Tupabbiring District across two different villages, Mattiro Ujung village in the west and Mattiro Matae village in the east.

Generally speaking, TWP Kapoposang has a damaged coral reef cover, high percentage of seagrass cover, but mangrove area can be found only in Kapoposang Island. As many as 224 species of corals, 8 species of seagrasses, 26 species of birds, 14 species of reptiles, and 7 species of mammals were found. More information about the zoning plan of TWP Kapoposang can be read here (<http://jdih.kkp.go.id/peraturan/59-kepmen-kp-2014.pdf>).

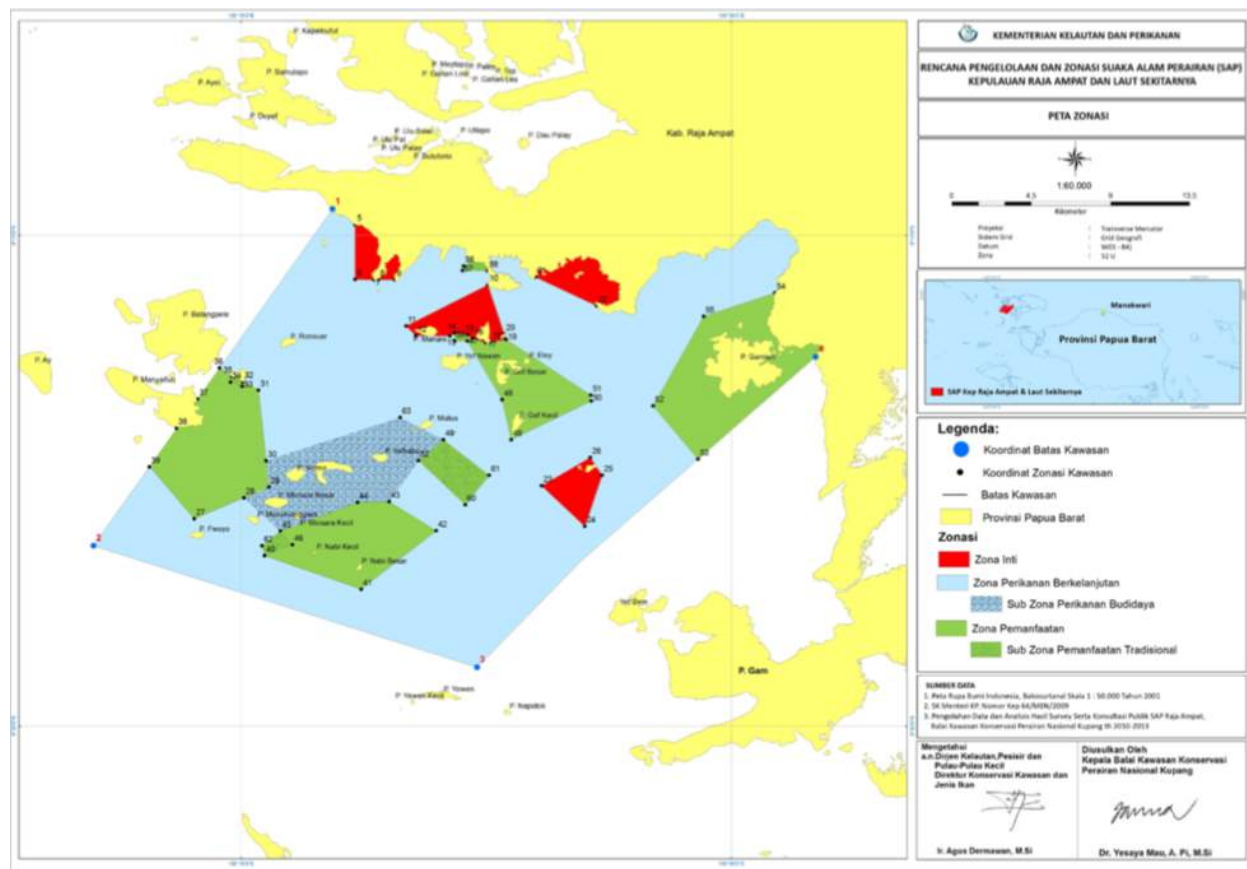


SAP Raja Ampat Islands

Marine Nature Reserve (SAP) Raja Ampat Islands was established with the KEPMEN KP Number KEP.64/MEN/2009 with an area of 60,000 hectares. To the north of SAP Raja Ampat is Waigeo Island, to its south is the sea of Fam Islands, to its east is the sea of Gam Island, while to its west is the sea of Batangpele and Maijafun Islands. In certain area of SAP Raja Ampat still has up to 70% live coral cover with a unique feature in several locations where the coral reef borders directly with seagrass and mangrove.

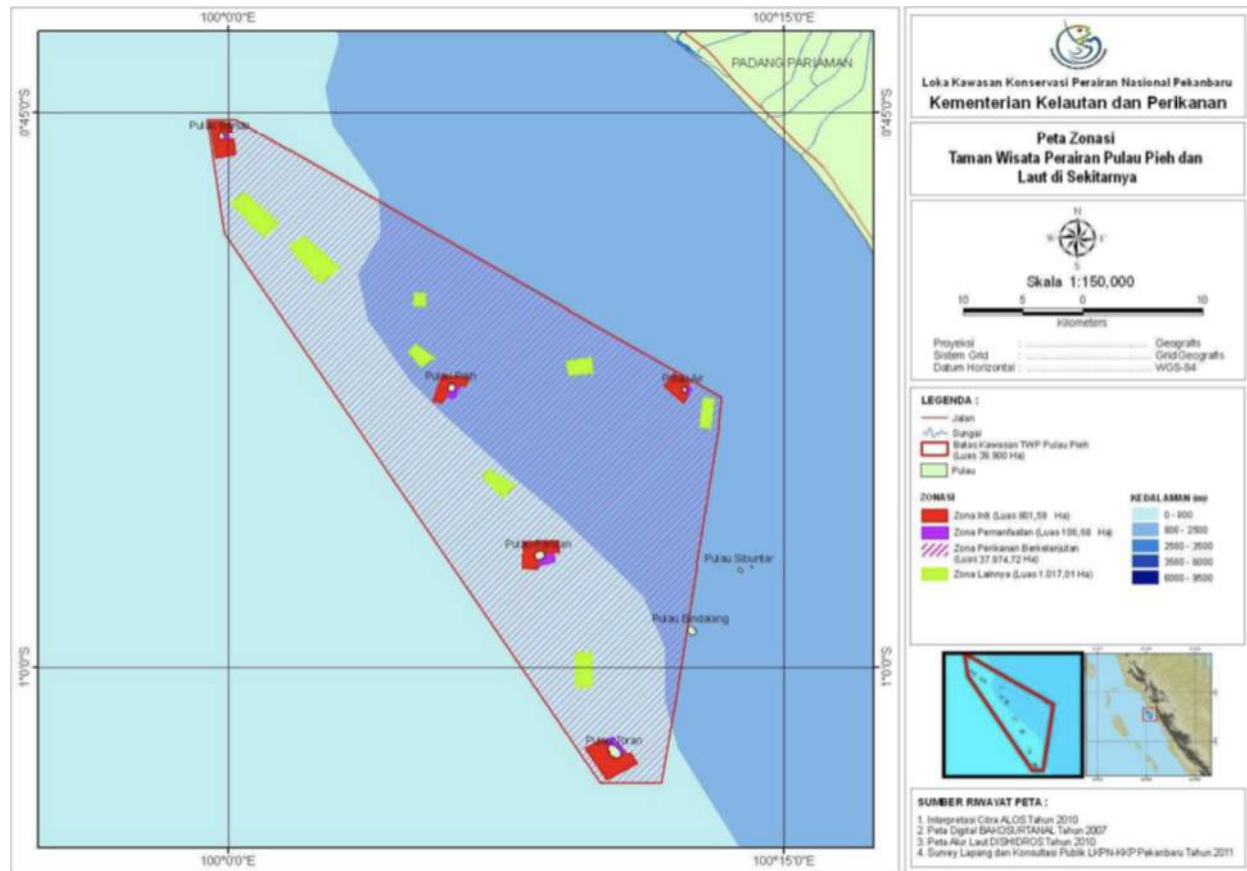
Another unique feature is the presence of marine lakes in Misool Islands and its surroundings (Becking, 2011). The lakes contain unique and endemic species such as the stingless jellyfish (*Mastigias papua*) which deserves to be protected or conserved (Maas, et al. 2020). Moreover, SAP Raja Ampat Islands also boasts protected organisms such as green turtle (*Chelonia mydas*), hawksbill sea turtle (*Eretmochelys imbricata*), various marine mammal species, giant clam (*Tridacna gigas*) and some areas are that are

suspected as spawning grounds for groupers. The potential resources and other locations are regulated in zoning plan for SAP Raja Ampat Number 63/KEPMEN-KP/2014 which can be accessed in full in (<http://jdih.kkp.go.id/peraturan/63-kepmen-kp-2014.pdf>).



SAP Western Waigeo Islands

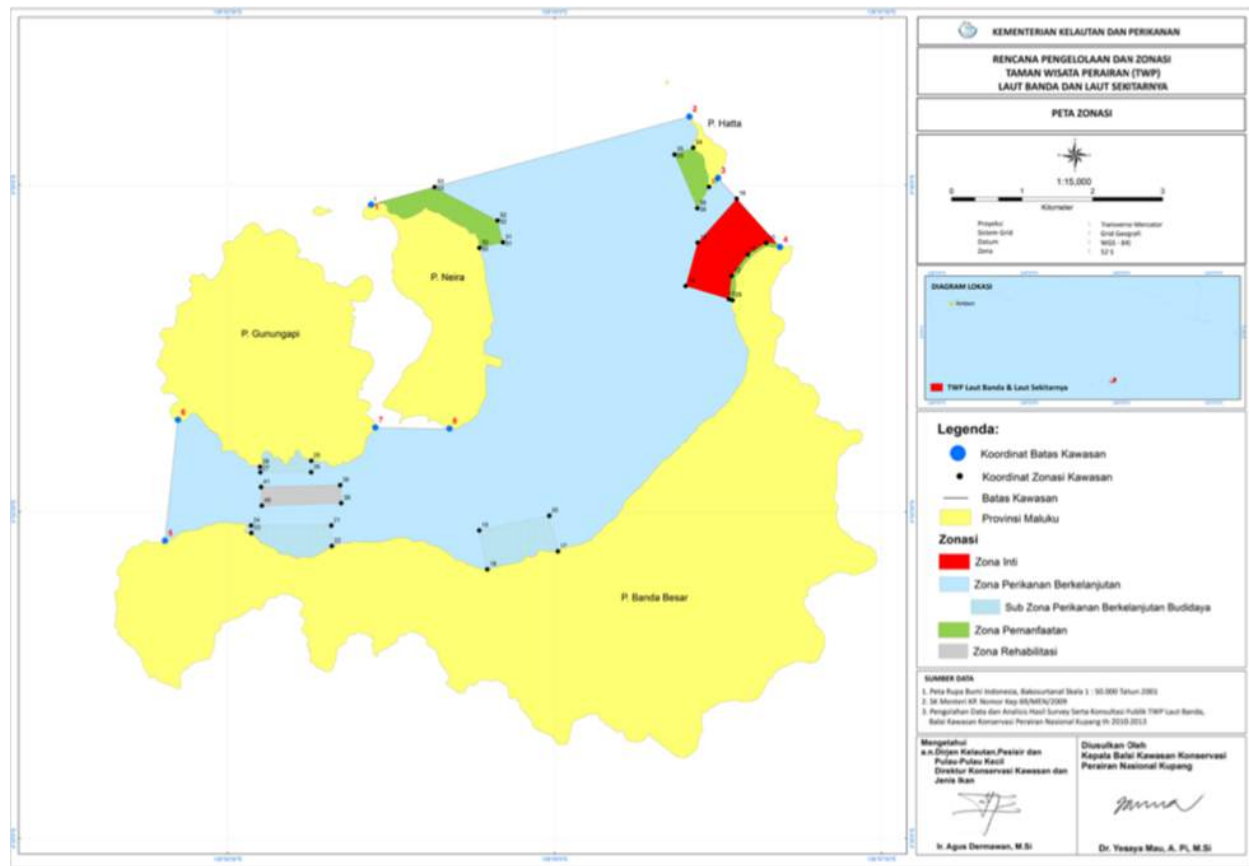
SAP Western Waigeo Islands and the surrounding sea occupy an area of 271,630 hectares, as established with the Decree of the Minister of Marine Affairs and Fisheries Number KEP.65/MEN/2009. The islands are located to the west of equatorial Pacific Ocean and to the east of the inflow of the Indonesian Throughflow. SAP Western Waigeo Islands consists of a hundred uninhabited karst islands, except for Piai Island and Sayang Island. This area is suspected as the feeding ground of hawksbill sea turtle (*Eretmochelys imbricata*), leatherback sea turtle (*Dermochelys coriacea*), dugong (*Dugong dugon*), and green turtle (*Chelonia mydas*). More information about the zoning plan of SAP Western Waigeo Islands can be read in PerMen NUMBER 60/KEPMEN-KP/2014 that can be accessed here (<http://jdih.kkp.go.id/peraturan/60-kepmen-kp-2014.pdf>).



TWP Banda

The Decree of the Ministry of Marine Affairs and Fisheries Number: KEP. 69/MEN/2009 established the TWP Banda in the province of Maluku with an area of 2,500 hectares. The TWP was established after the handover of the nature reserve area and nature conservation area of the Banda Sea Nature Reserve from the Ministry of Forestry to the Ministry of Marine Affairs and Fisheries Number L BA.01/Menhut-IV/2009-BA.108/MEN.KP/III/2009 dated March 4, 2009.

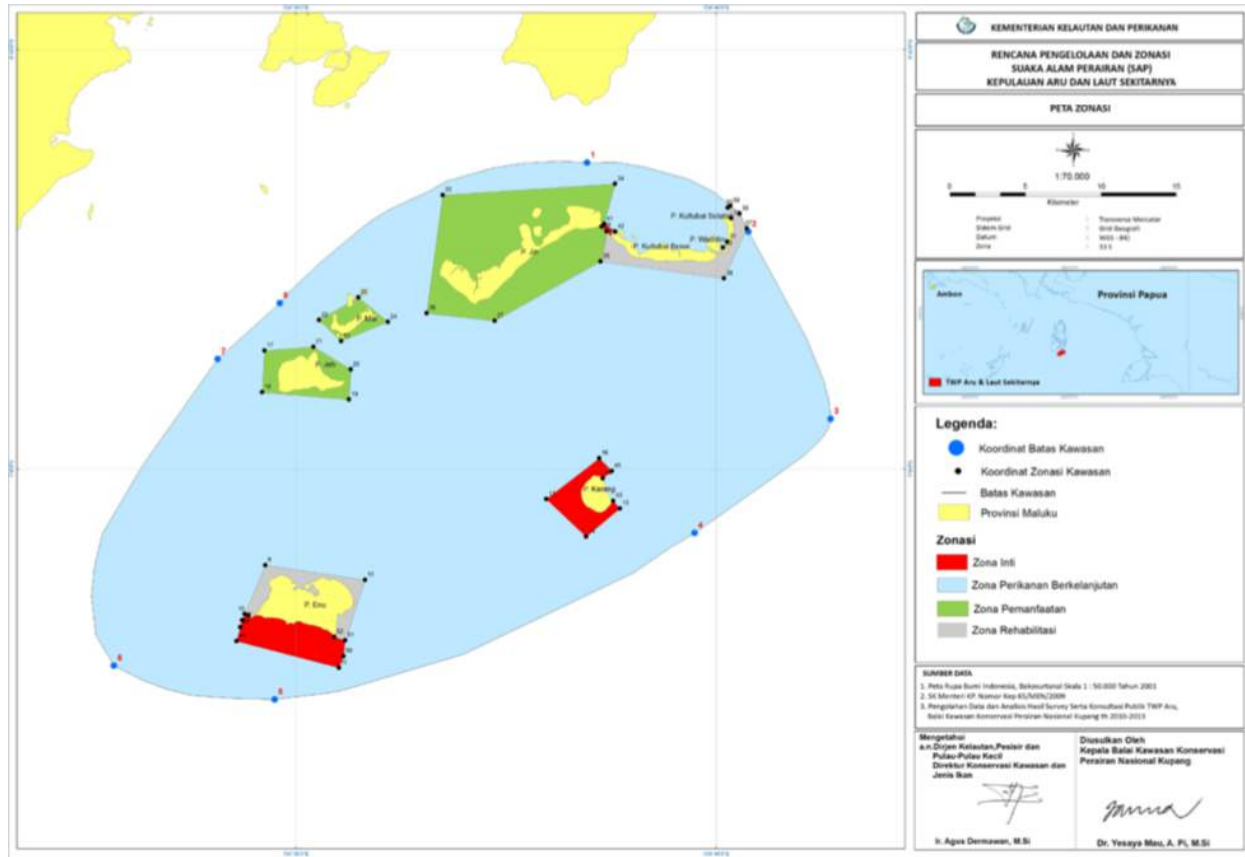
In general, the coral reefs found in TWP Banda Sea are fringing reefs with the characteristics of oceanic reefs, influenced by the all-year waves from the east and the west directions of the Banda Islands. As many as 223 coral species, 500 fish species, 8 seagrass species, and various sea mammals are found in TWP Banda Sea. The TWP Banda is even more impressive because of the existence of historical sites such as the Belgica Fort and the local, unique cultures, and customs. TWP Banda management and zoning are regulated in the ministerial decree NUMBER 58/KEPMEN-KP/2014. More information can be read here (<http://jdih.kkp.go.id/peraturan/58-permen-kp-2014-ttg-disiplin-pegawai-aparatur-sipil-negara.....pdf>).



SAP South-eastern Aru

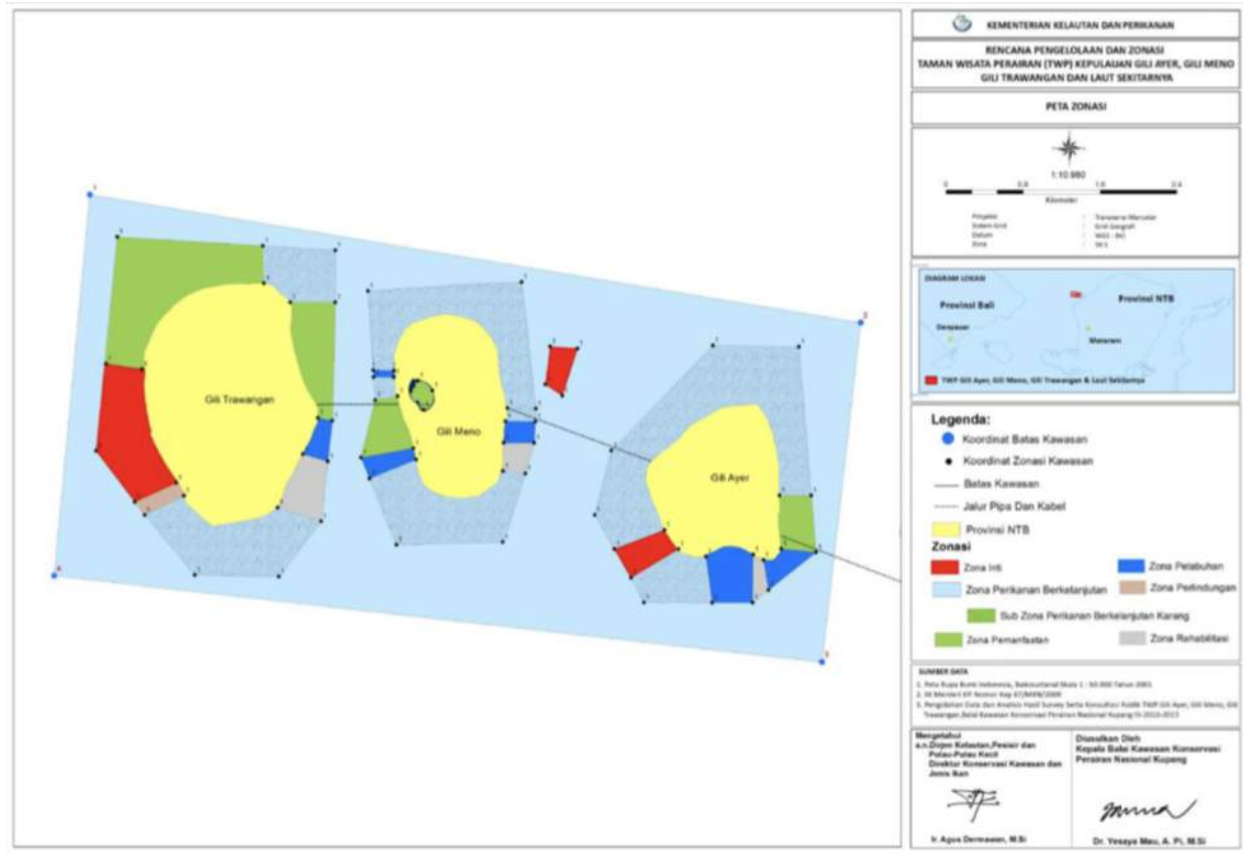
SAP South-eastern Aru Islands and the Surrounding Seas in the province of Maluku with an area of 114,000 hectares was established as a national marine protected area with the KEPMEN KP Number: KEP.63/MEN/2009. The Aru Islands regency has an area of 55,270.22 km², consisting of 6,426.77 km² of land and 48,070 km² of seas. There are 187 islands in the area with a generally flat topography with swamps.

The purpose of this nature reserve is to protect the population of the green turtle (*Chelonia mydas*) and the hawksbill sea turtle (*Eretmochelys imbricata*). It is also to protect habitat and other marine species, such as dugong, pearl oyster, and other high economic value species. Hence, the nature reserve can also function as a 'reservoir'. The management and zoning plan is laid out in ministerial decree Number 64/KEPMEN-KP/2014 that can be read in full here (<http://jdih.kkp.go.id/peraturan/64-kepmen-kp-2014.pdf>).



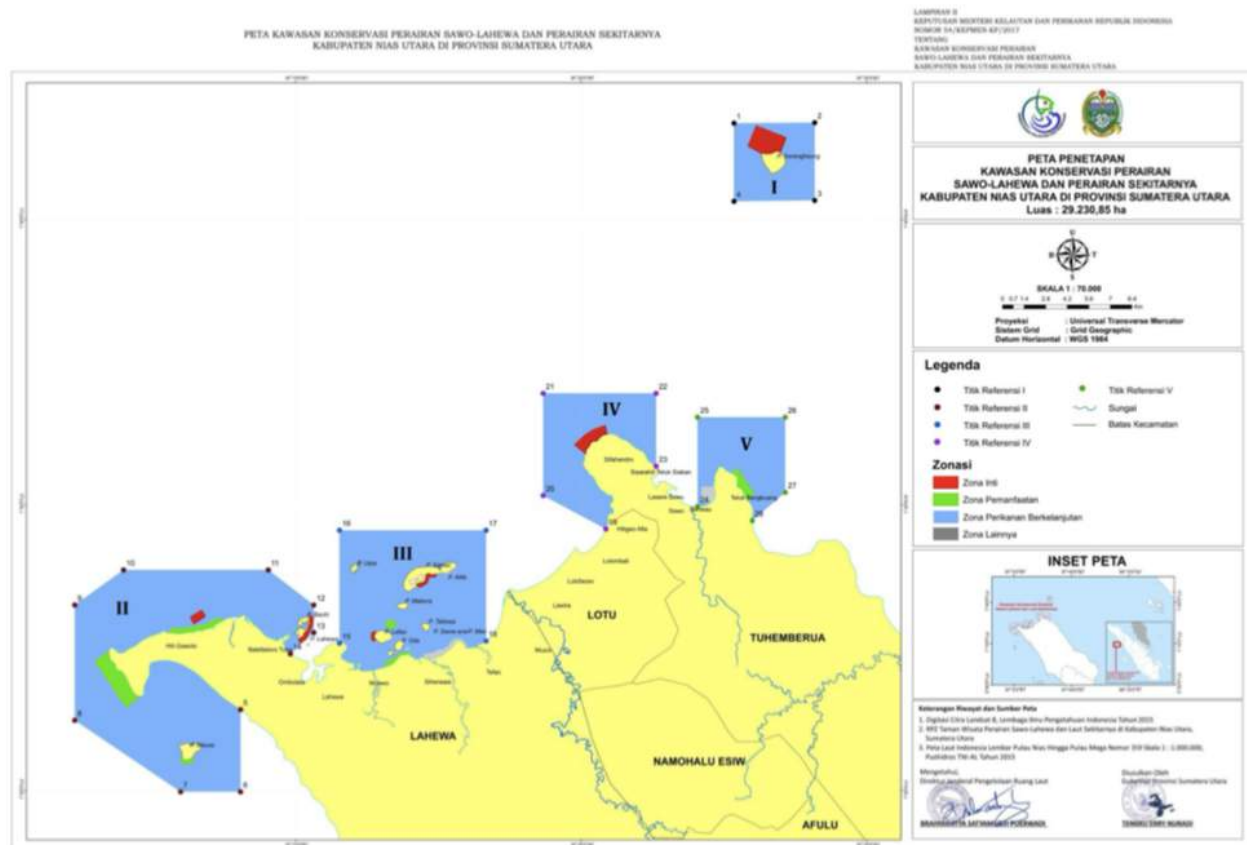
TWP Gili Mantra

KEPMEN KP Number: KEP. 67/MEN/2009 established TWP Gili Ayer, Gili Meno, and Gili Trawangan and their surroundings in the province of West Nusa Tenggara as a national marine protected area with an area of 2,954 hectares. TWP Gili Meno, Gili Ayer, and Gili Trawangan are commonly known as Gili Matra or TWP Gili Indah. The area consists of 665 hectares of land while seas make up the remaining. It has the potential of diverse flora and fauna such as mangrove, seaweed, and birds like kingfisher, dove, and eagle. The vast swathes of white sand are also an icon of TWP Gili Matra. Information about management and zoning plan of the TWP can be found in ministerial decree NUMBER57/KEPMEN-KP/2014 (<http://jdih.kkp.go.id/peraturan/57-permen-kp-2014-ttg-perubahan-kedua-atas-per-30-men-2012.....pdf>).



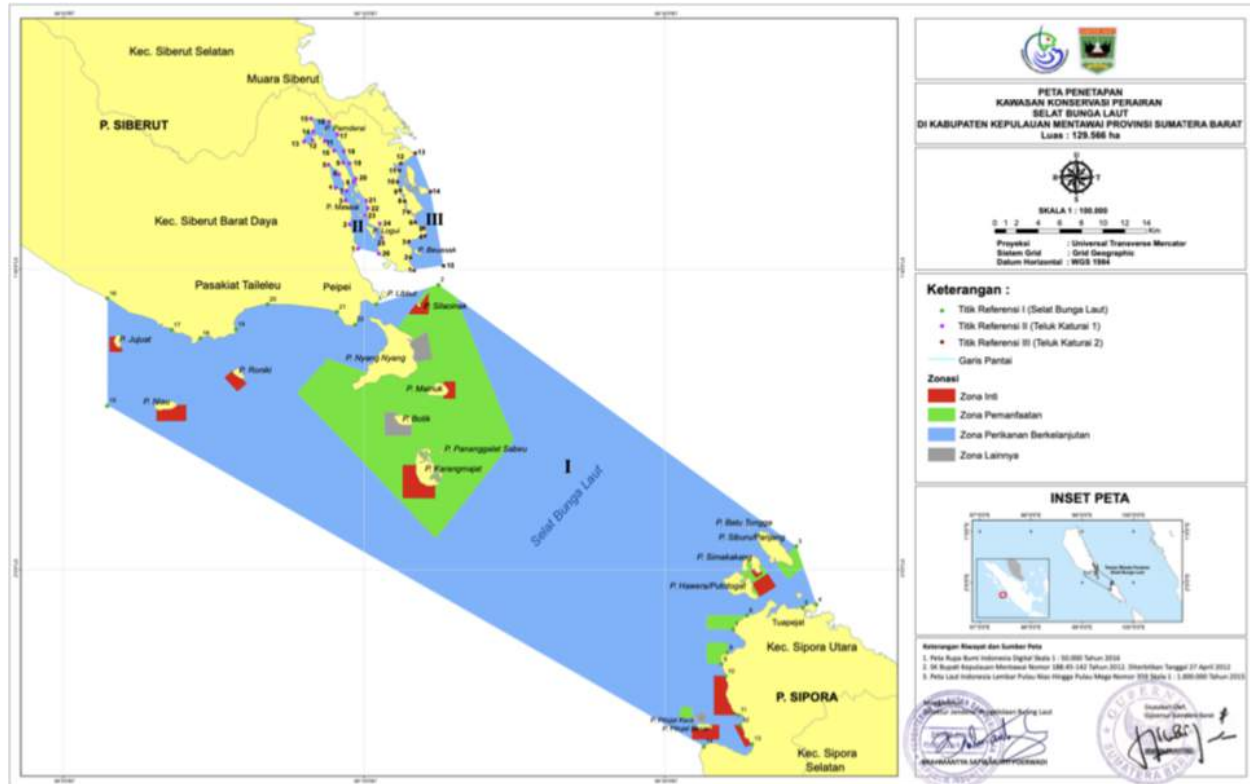
KKPD Eastern Coast of Weh Island

KKPD Eastern Coast of Weh Island was established as an MPA with the KEPMEN KP Number 57/KEPMEN-KP/2013 with an area of 3,207.98 hectares. Before the establishment with the KEPMEN, KKPD Eastern Coast of Weh Island was already managed by the people with the involvement of the Panglima Laôt (“sea commanders”). This has resulted in the rich, well-maintained biodiversity in KKPD Eastern Coast of Weh Island. Two protected species live in the area, the hawksbill sea turtle (*Eretmochelys imbricata*) and the humphead wrasse (*Cheilinus undulatus*). Moreover, the coral reef ecosystem dominates almost along the coast of Weh Island, with 336 species of reef fish and 84 species of other fish which are economically important. Information about the management planning for KKPD Eastern Coast of Weh Island can be accessed here (<http://kkji.kp3k.kkp.go.id/index.php/en/dokumen/publikasi/buku/finish/2-buku/818-buku-ii-rencana-pengelolaan-kkp-pesisir-timur-weh-final>).



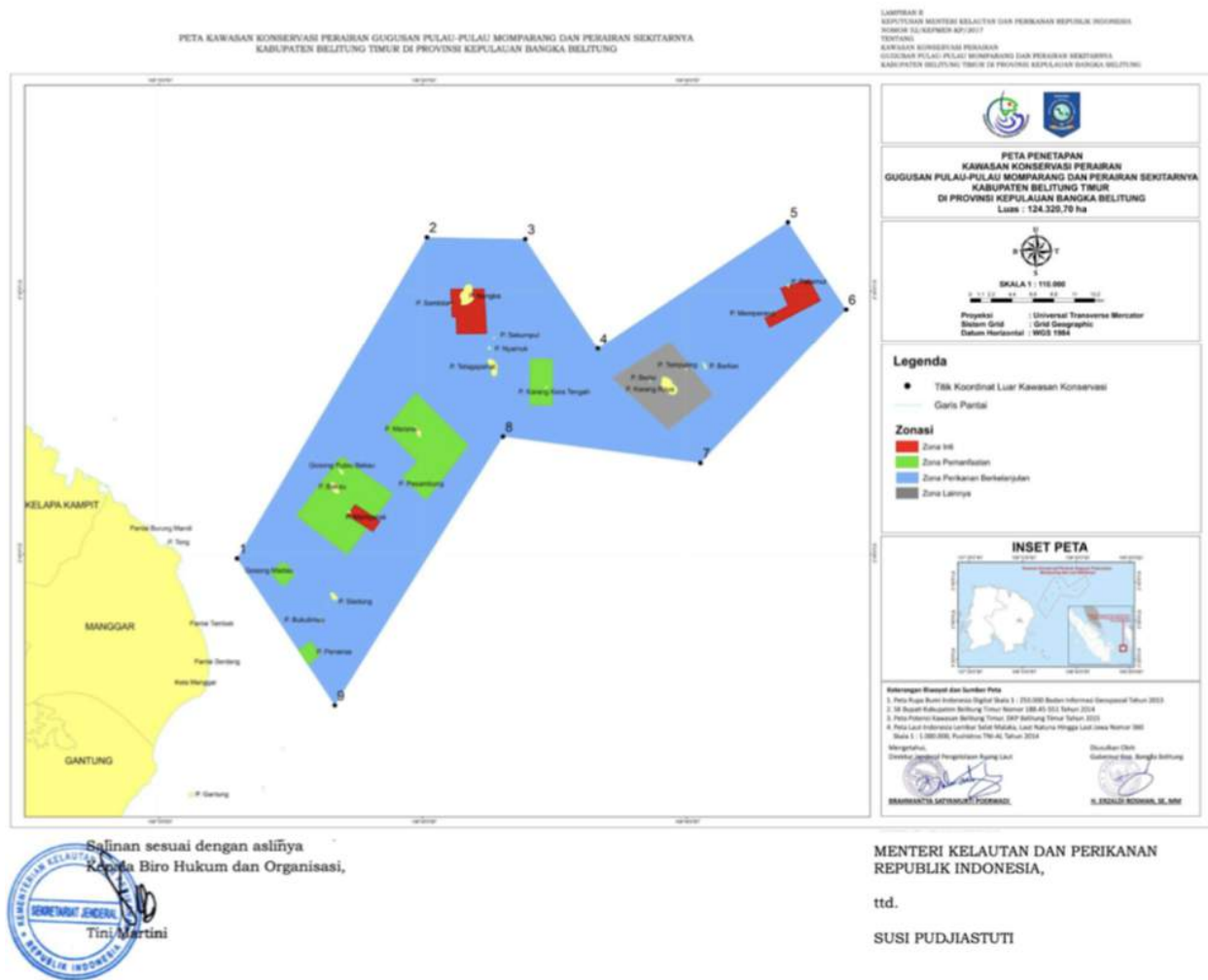
KKPD Bunga Laut Strait – Mentawai Island

KKPD Bunga Laut Strait was regulated based on Mentawai Islands Regent's Decree No.178/Year 2006 which was updated as Number 188.45/42 Year 2012. The area then established by KEPMEN KP Number 22/KEPMEN-KP/2018 with an area of 129,566 hectares. According to the decree, the Saibi Samukop area is prioritized for supporting sustainable fisheries. In contrast, the Katurai area is prioritized for supporting marine tourism, mainly because the conservation approach used is a combination of biodiversity and aesthetic potentials. In Siberut Strait, Katurai I Bay, and Katurai II Bay lay critical habitat and fisheries and other resources like mangrove (15 species), coral reefs (1,157 species), maroon clownfish, and napoleon. Other priority species protected in KKPD Bunga Laut Strait include turtles, giant clams, and top shells.



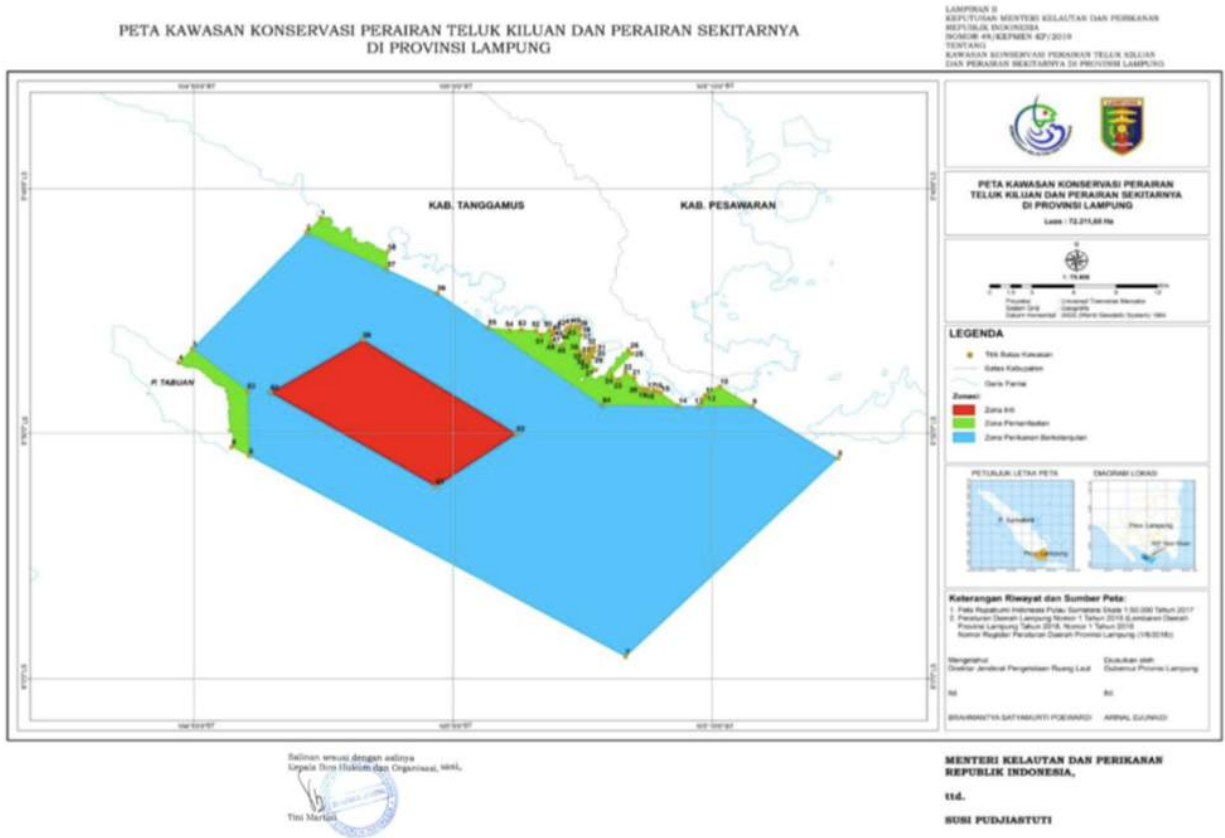
KKPD Momparang Island Cluster – East Belitung

KKPD Momparang Island Cluster in the province of Bangka and Belitung was established based on East Belitung Regent's Decree Number 188.45/551/2014 and as a KKPDA with the Ministry of Marine Affairs and Fisheries' KEPMEN KP Number 52/KEPMEN-KP/2017 with an area of 124,320.70 hectares. The core zone of this area is situated in the three islands of Memperak, Nangka, and Pasemut, with turtles and napoleon as conservation target.



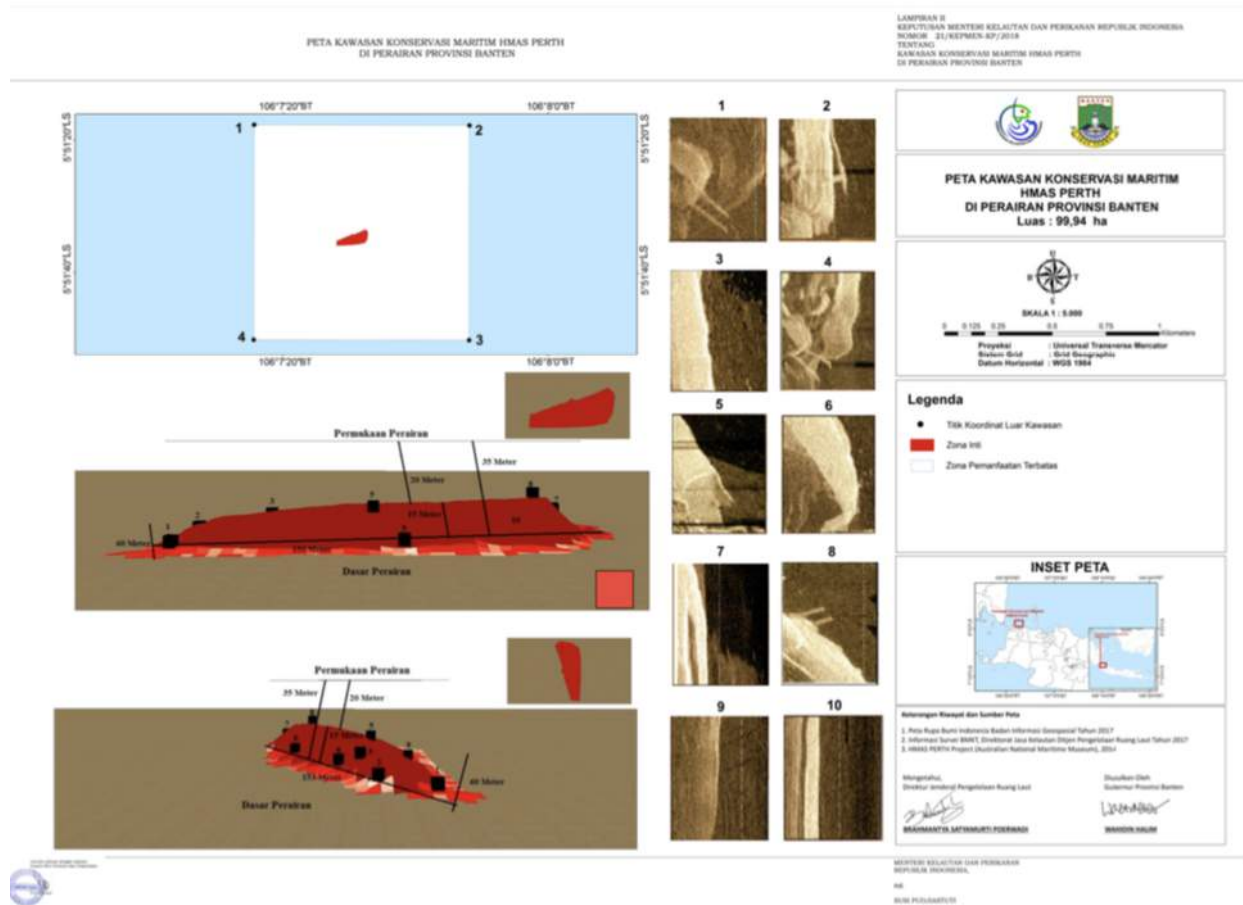
KKPD Kiluan Bay – Tanggamus

Based on Tanggamus Regent's Decree No.B.399/32/11/2014 and KEPMEN KP Number 49/KEPMEN-KP/2019, Kiluan Bay in the province of Lampung was allocated as KKPD Kiluan Bay with an area of 72,211.68 hectares. The area is divided into 8,824.22 hectares of the core zone, 4,711.76 hectares of utilization zone, and 58,615.70 hectares of sustainable fisheries zone. Kiluan Bay is part of Semangka Bay. The Kiluan Bay area boasts biodiversity that includes coral reef around Kelapa Island, mangrove, hawksbill sea turtle and green turtle, long-beaked dolphins and bottlenose dolphins within the bay area.



KKM HMAS Perth – Serang

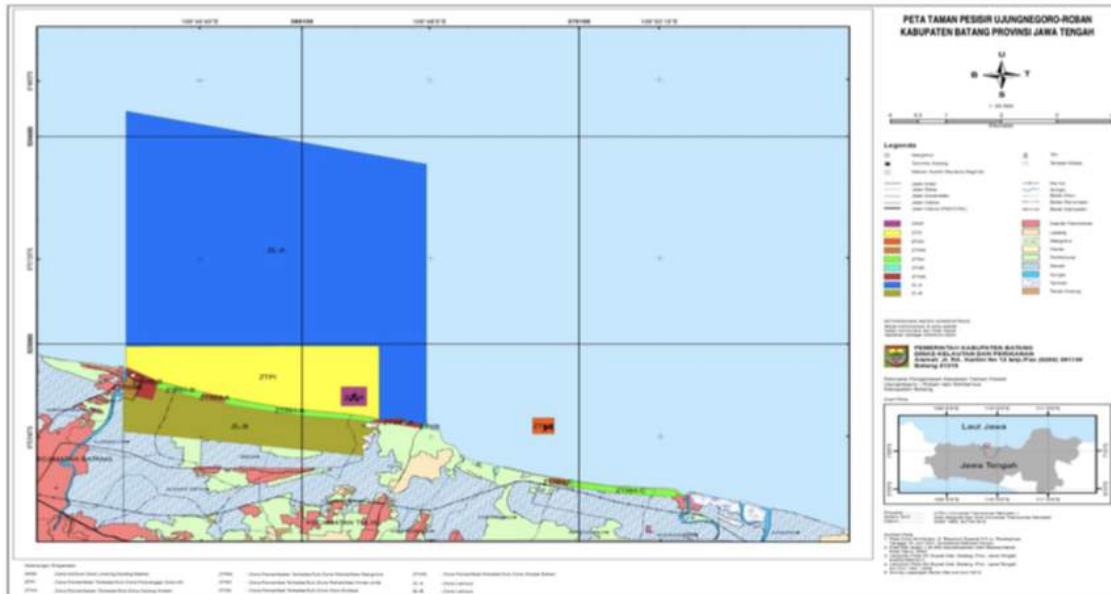
The HMAS Perth in Serang, Banten Province was established as an MPA classified as a maritime conservation area (KKM) with the KEPMEN KP Number 21/KEPMEN-KP/2018, covering an area of 99.94 hectares. The area is set aside for maritime cultural protected area that is divided into a core zone and a limited use zone. The KKM was established to utilize shipwreck as an educational site about the sinking of the HMAS Perth in 1942.



KKPD Penyu Pangumbahan Beach – Sukabumi

Penyu Pangumbahan Beach in the province of West Java was established as a regional marine protected area with the Decree of the Minister of Marine Affairs and Fisheries Number 5/KEPMEN-KP/2016 with an area of 270,609 hectares. The area has a high biodiversity of turtles and is the habitat of all sea turtle species that can be found in Indonesia. The six species are leatherback sea turtle (*Dermochelys coriacea*), hawksbill sea turtle (*Eretmochelys imbricata*), olive ridley sea turtle (*Lepidochelys olivacea*), loggerhead sea turtle (*Caretta caretta*), flatback sea turtle (*Natator depressus*), and green turtle (*Chelonia mydas*).

LAMPIRAN II
KEPUTUSAN MENTERI KELAUTAN DAN PERIKANAN
REPUBLIK INDONESIA
NOMOR KEP.29/MEN/2012
TENTANG PENETAPAN KAWASAN KONSERVASI PESISIR
DAN PULAU-PULAU KECIL UJUNGNEGORO-ROBAN
KABUPATEN BATANG DI PROVINSI JAWA TENGAH



Salinan sesuai dengan aslinya
Kepala Biro Hukum dan Organisasi,

Hanung Cahyono



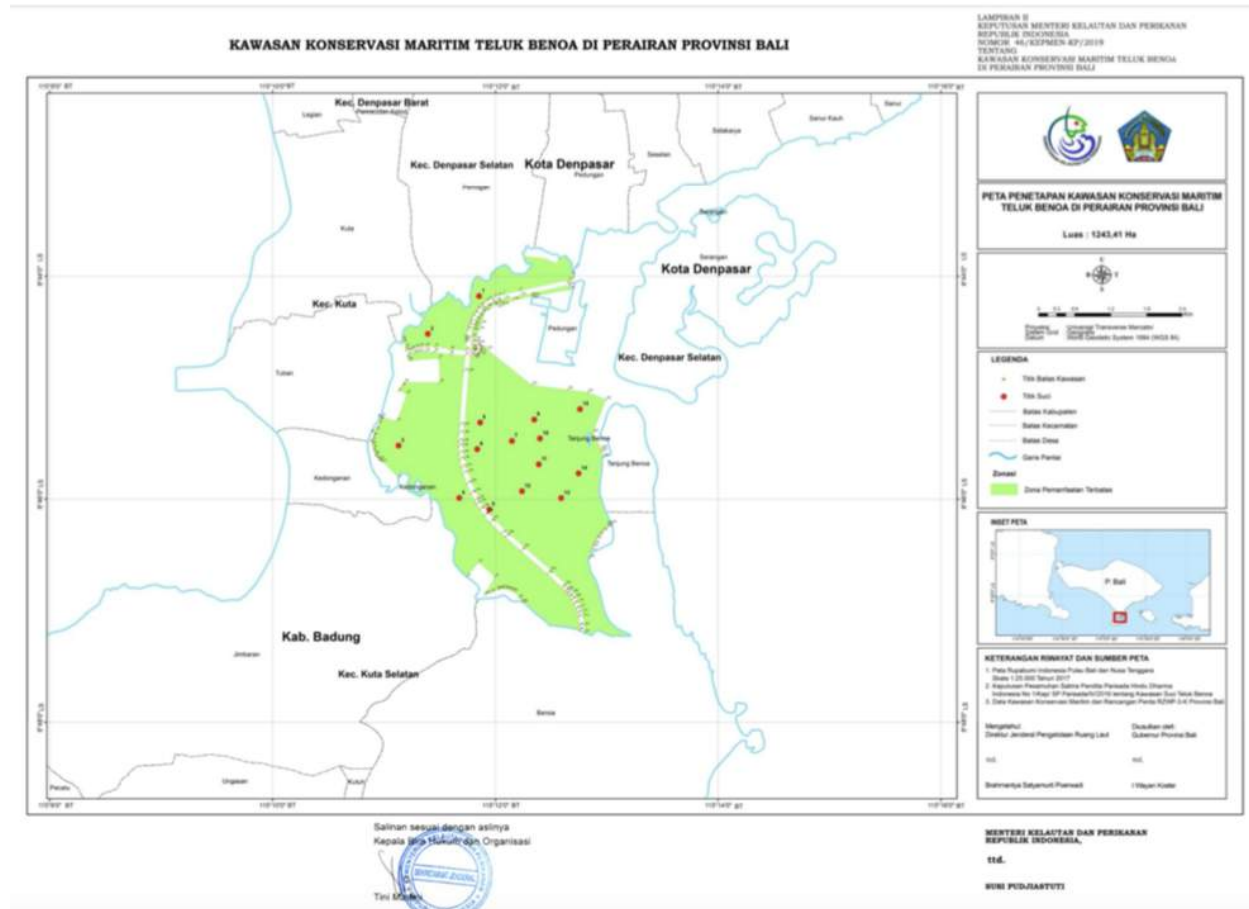
MENTERI KELAUTAN DAN PERIKANAN
REPUBLIK INDONESIA,

.ttd

SHARIF C. SUTARDJO

KKM Benoa Bay

Benoa Bay was established as a maritime protected area (KKM) through KEPMEN KEP Number 46/KEPMEN-KP/2018 with an area of 1,243.41 hectares. The area consists of fifteen locations that are divided into a core zone and a limited utilization zone. The fifteen locations reflect the fifteen *munting* spots, the local people's sacred worship places. Places for religious or customary rituals that are related to maritime culture can indeed be established as protected areas so that the local culture and wisdom can also be preserved. However, as of now, the zoning plan of the coastal area and the small islands for the management of KKM Benoa Bay is still under deliberation.

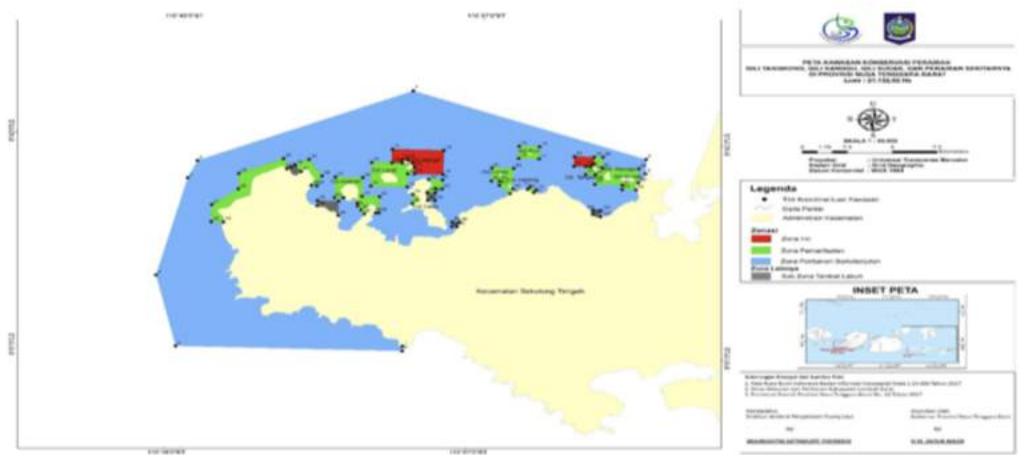


KKPD Nusa Penida – Klungkung

KKPD Nusa Penida was established with the Decree of the Minister of Marine Affairs and Fisheries Number 90/KEPMEN-KP/2018 after it is reserved through the Klungkung Regency Regulation Number 12 Year 2010 with an area of 20,057 hectares. KKPD Nusa Penida possesses high biodiversity, especially coral and reef fish (576 species, five of them newly found). There are also a relatively large area of mangrove and seagrass meadow as well as charismatic animals such as sunfish and manta ray that are some of the protected organisms in KKPD Nusa Penida. Long-term management planning and zoning of KKPD Nusa Penida can be found in the Decree of Bali Governor Number 1828/03-L/HK/2017.

LAMPIRAN II
KEPUTUSAN MENTERI KELAUTAN DAN PERIKANAN
REPUBLIK INDONESIA
NOMOR 93/KEPMEN-KP/2018
TENTANG
KAWASAN KONSERVASI PERAIRAN GILI TANGKONG, GILI
NANGGU, GILI SUDAK, DAN PERAIRAN SEKITARNYA DI
PROVINSI NUSA TENGGARA BARAT

PETA KAWASAN KONSERVASI PERAIRAN GILI TANGKONG, GILI NANGGU, GILI SUDAK,
DAN PERAIRAN SEKITARNYA DI PROVINSI NUSA TENGGARA BARAT



Salinan sesuai dengan aslinya
Kepala Biro Hukum dan Organisasi,
Tini Martini

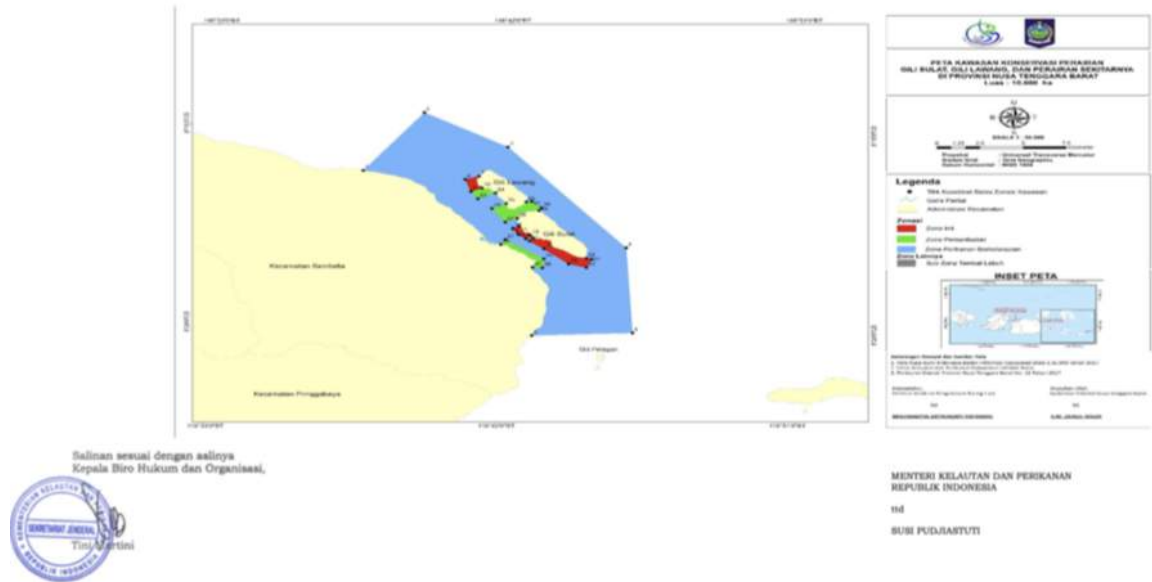
MENTERI KELAUTAN DAN PERIKANAN
REPUBLIK INDONESIA,
td.
BUDI PUDJASTUTI

KKPD Gili Sulat and Lawang – East Lombok

KKPD Gili Sulat and Lawang in East Lombok was established with the East Lombok Regent's Decree Number 188.45/332/KP/2014 dated July 11, 2013 and KEPMEN KP Number 92/KEPMEN-KP/2018 with an area of 10,000 hectares. The area is divided into 344.8 hectares of the core zone, 410.2 hectares of utilization zone, 9,235.2 hectares of sustainable utilization zone, and 9.8 hectares for other purposes including mooring subzone. The area is being directed to become a marine protected area and a marine eco park with its swathes of white sand and beautiful coral ecosystem. The long-term mission for this area is to become an area for conservation, tourism, education/research, and people's economic activities.

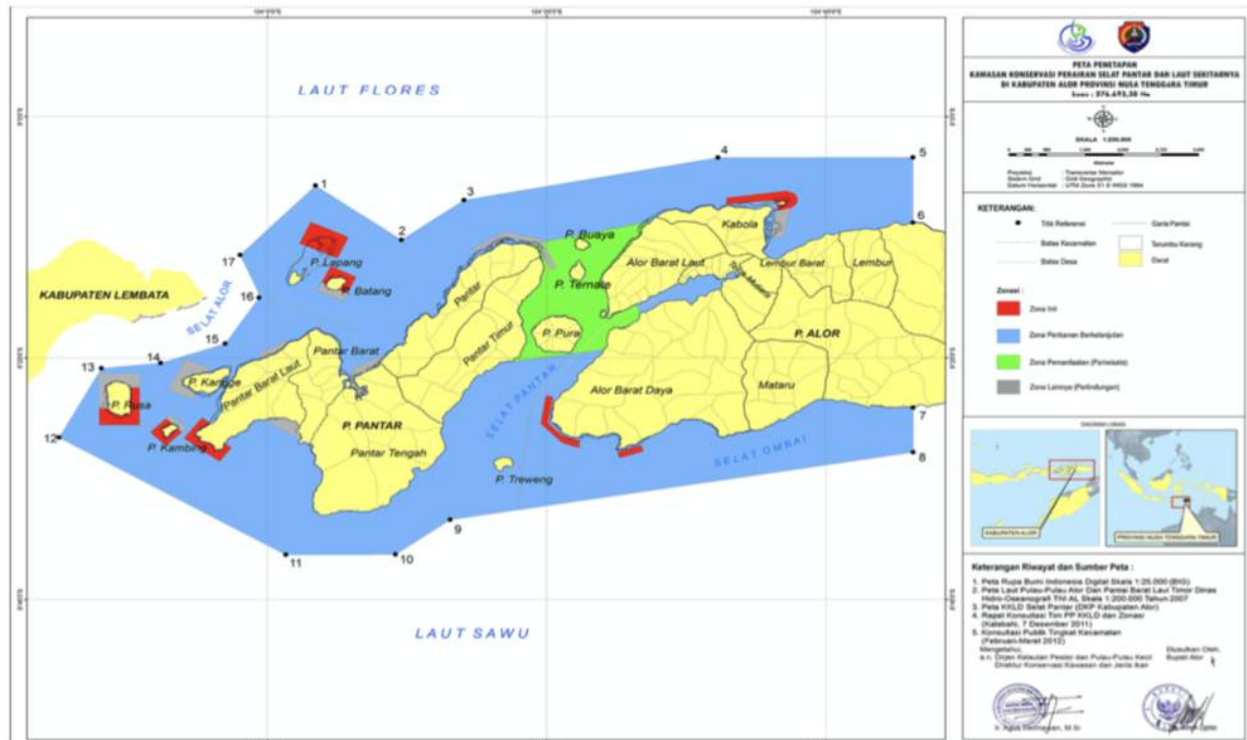
LAMPIRAN II
KEPUTUSAN MENTERI KELAUTAN DAN PERIKANAN
REPUBLIK INDONESIA
NOMOR 92/KEPMEN-KP/2018
TENTANG
KAWASAN KONSERVASI PERAIRAN GILI SULAT DAN GILI
LAWANG, DAN PERAIRAN SEKITARNYA DI PROVINSI NUSA
TENGGARA BARAT

PETA KAWASAN KONSERVASI PERAIRAN GILI SULAT DAN GILI LAWANG,
DAN PERAIRAN SEKITARNYA DI PROVINSI NUSA TENGGARA BARAT



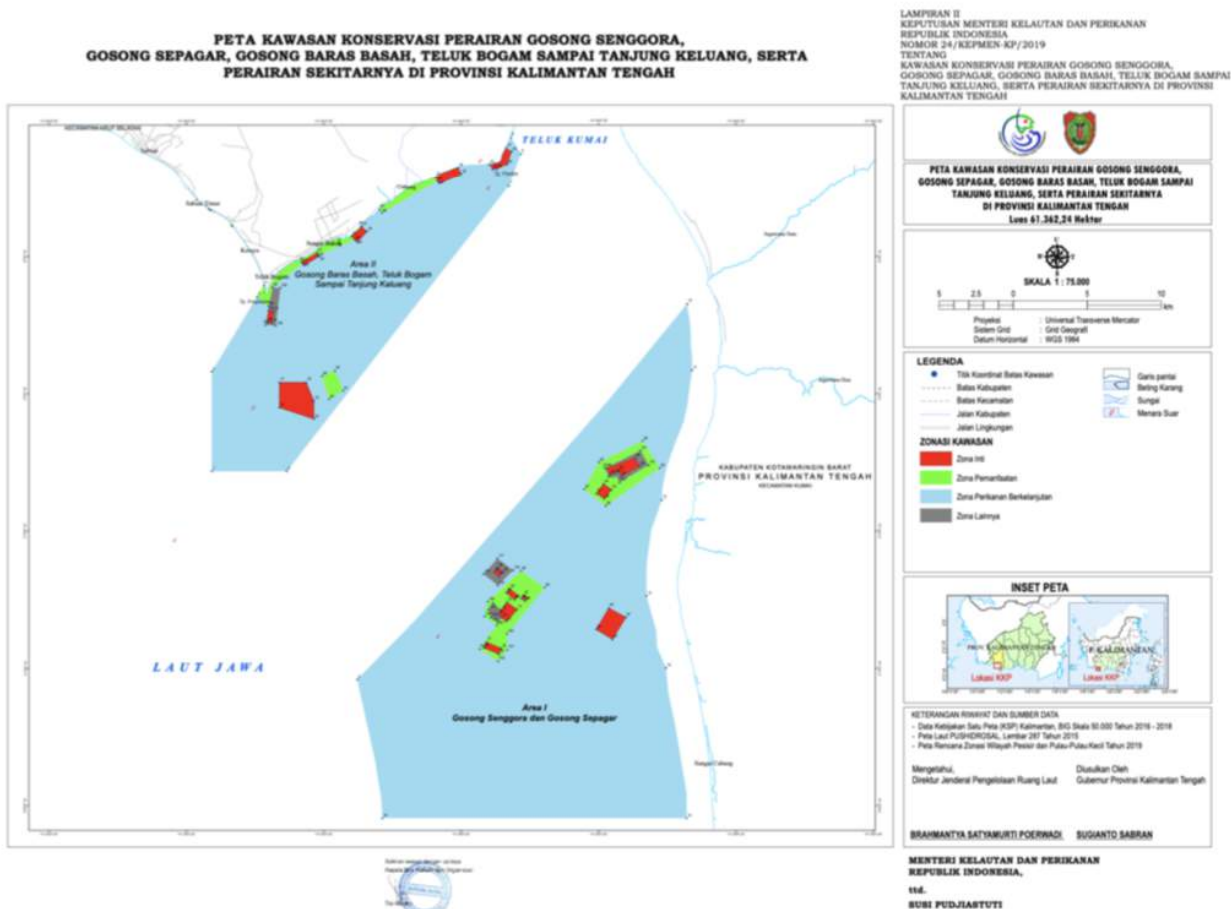
KKPD Pantar Strait – Alor

KKPD Pantar Strait in Alor was established with KEPMEN KP Number 35/KEPMEN-KP/2015 with an area of 276,693.38 hectares. The area is unique because in certain seasons it serves as migration routes for marine mammals such as the blue whale and other whale species. In the future, the area is expected to support the management of larva protection (larva nursery ground). Also served as a feeding area and spawning ground to become a dispersion centre for the recruitment of larva of exploited species. It is expected to maintain fisheries stability, to renew the ecology that is lost due to ecosystem impacts, and to improve the people's socioeconomic. KKPD Pantar Strait is also unique for being a critical habitat for the pelagic thresher (*Alopias pelagicus*) which is exploited by the local people (Shidqi *et al.*, 2019).



KKPD Senggoro Sepagar – West Kotawaringin

Senggoro Sandbar, Sepagar Sandbar, Baras Basah Sandbar, Bogam Bay, to Keluang Cape and the surrounding seas in the province of Central Kalimantan was established as a KKPD with KEPMEN KP Number 24/KEPMEN-KP/2019 with an area of 61,362.64 hectares. The KKPD is divided into two areas: The 43,257.05-hectare Area I covers Senggoro Sandbar and Sepagar Sandbar and the 18,105.9-hectare Area II covers Baras Basah Sandbar, Boga, Bay, and Keluang Cape. The targeted species for conservation in KKPD Senggoro Sepagar are dugong, turtle, sea cucumber, and giant clam. Species of economically important fish, corals, and seagrass are also prioritized for protection and sustainable utilization.

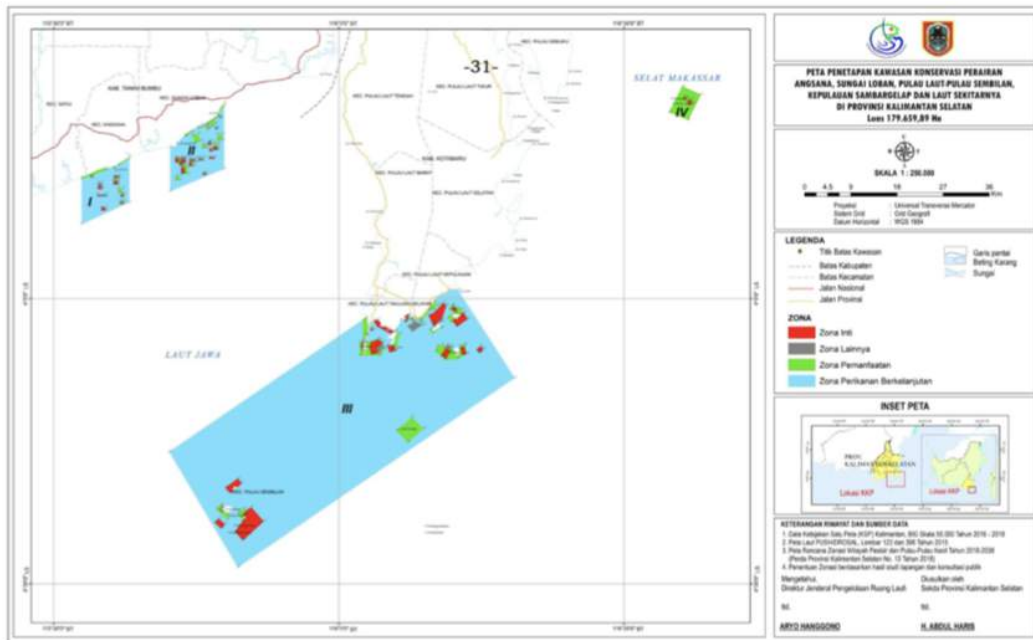


KKPD Satul, Angsana, Sungai Loban – Tanah Bumbu

The governor of South Kalimantan issued a bylaw of South Kalimantan Province Number 13 Year 2018 on the zoning plan of coastal and small islands region in South Kalimantan, including the area of Satul, Angsana, and Sungai Loban. Then, through KEPMEN KP Number 69/KEPMEN-KP/2020, the area of Angsana, Sungai Loban, Laut Island-Sembilan Island, Sambargelap Islands, and the surrounding seas declared as a KKPD with an area of 179,659.89 hectares. The KKPD is divided into the 8,138.45-hectare Angsana (Area I), the 10,613.23-hectare Sungai Loban (Area II), the 158,717.40-hectare Laut Island-Sembilan Island (Area III), and the 2,190.81-hectare Sambargelap Islands (Area IV). Considerations for the KKPD establishment include the fisheries potential and the presence of important habitats such as coral, seagrass, and mangrove. Moreover, some protected marine organisms such as napoleon, sea turtle, bamboo coral, and giant clam provide another substantial reason for the establishment of a protected area in Satui, Angsana, and Sungai Loban.

PETA KAWASAN KONSERVASI PERAIRAN ANGSA, SUNGAI LOBAN, PULAU LAUT-PULAU SEMBILAN, KEPULAUAN SAMPARGELAP, DAN LAUT SEKITARNYA DI PROVINSI KALIMANTAN SELATAN

LAMPIRAN II
KEPUTUSAN MENTERI KELAUTAN DAN PERIKANAN
REPUBLIK INDONESIA
NOMOR 69/KEPMEN-KP/2020
TENTANG
KAWASAN KONSERVASI PERAIRAN ANGSA, SUNGAI LOBAN, PULAU LAUT-PULAU SEMBILAN, KEPULAUAN SAMPARGELAP, DAN LAUT SEKITARNYA
DI PROVINSI KALIMANTAN SELATAN



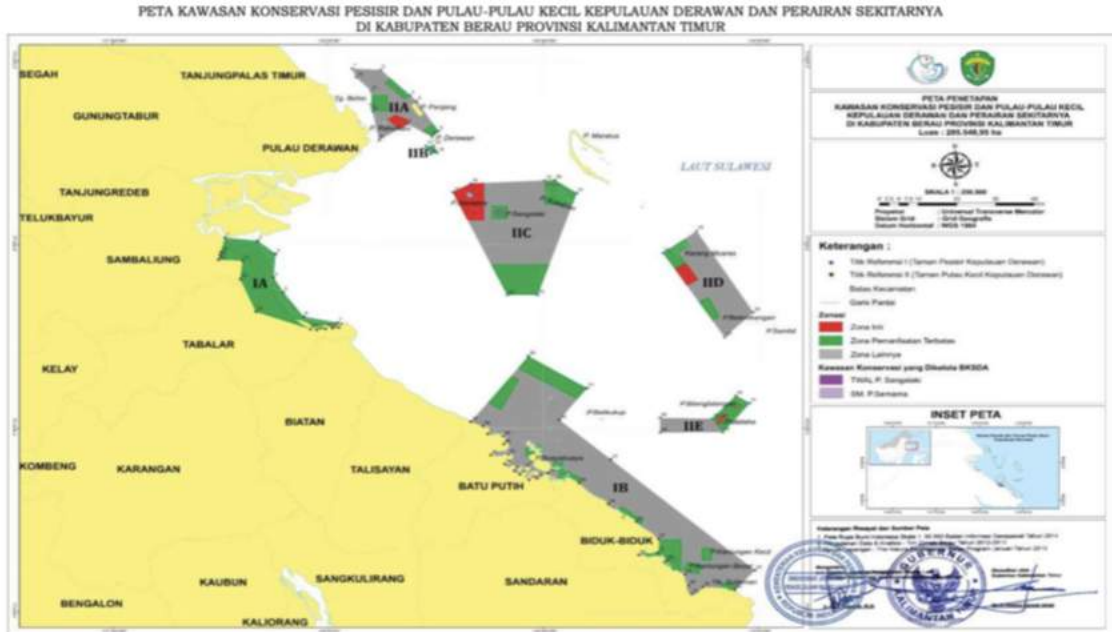
Salinan sesuai dengan aslinya
Kepala Biro Hukum dan Organisasi
Titi Mulya

MENTERI KELAUTAN DAN PERIKANAN
REPUBLIK INDONESIA,
ttd.
EDHY PRABOWO

KKPD Derawan Islands – Berau

Derawan Islands in Berau, East Kalimantan has been established through KEPMEN KP Number 87/KEPMEN-KP/2016 as a KKPD with an area of 285,548.95 hectares. The area is divided into two, Coast Park with an area of 151,859.57 hectares and Small Islands Park with an area of 133,689.38 hectares. Kakaban Island has marine lakes and along the island mangrove, coral reef, and seagrass can be found. The island is uninhabited but often used by fishermen as a place to catch fish for its abundance of economically important fish such as grouper, red snapper, napoleon, and others. KKPD Derawan boasts biodiversity that is relatively high varying from turtles, corals, seagrasses, mangrove, to jellyfish species of *Mastigias papua*, *Cassiopeia ornata*, and *Aurelia aurita*. That is why the area is important to be utilized sustainably by making it a protected area. Management and zoning plan of KKPD Derawan Islands can be accessed here (<http://dkp.kaltimprov.go.id/download/13>).

LAMPIRAN II:
KEPUTUSAN MENTERI KELAUTAN DAN PERIKANAN
REPUBLIK INDONESIA
NOMOR 87/KEPMEN-KP/2016
TENTANG
KAWASAN KONSERVASI PESISIR DAN PULAU-PULAU KECIL
KEPULAUAN DERAWAN DAN PERAIRAN SEKITARNYA DI
KABUPATEN BERAU PROVINSI KALIMANTAN TIMUR



MENTERI KELAUTAN DAN PERIKANAN
REPUBLIK INDONESIA,

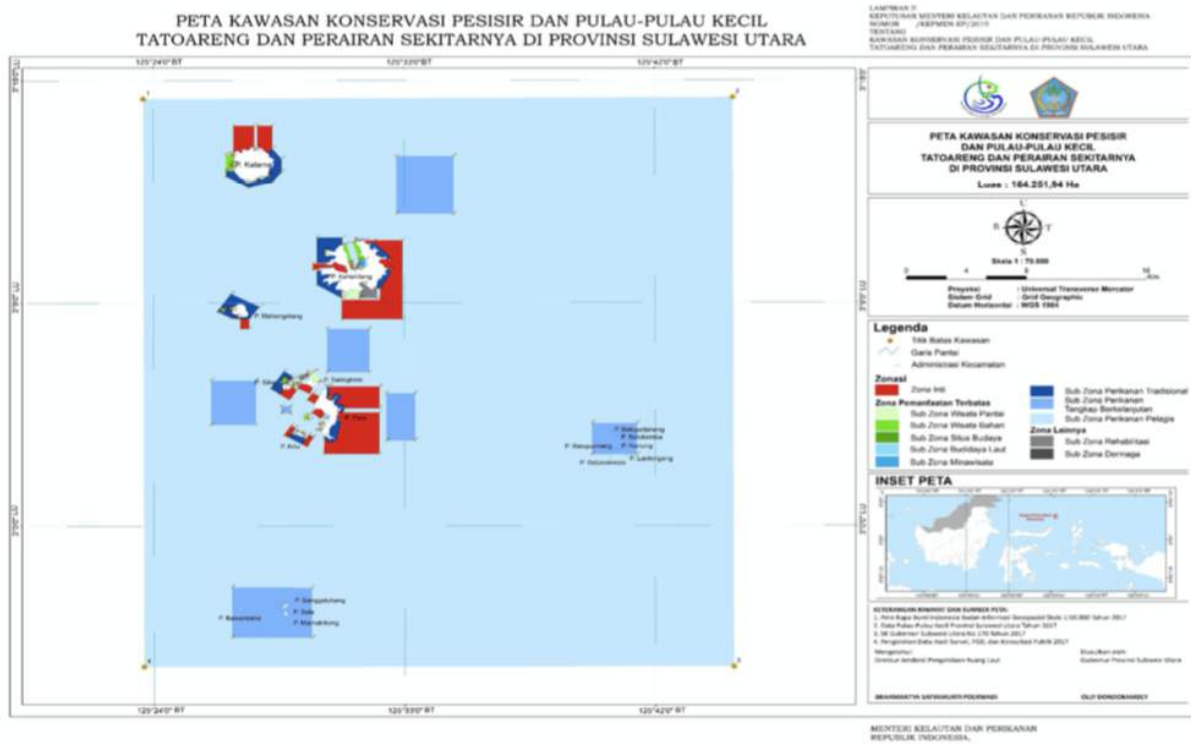
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SUSI PUDJIASTUTI



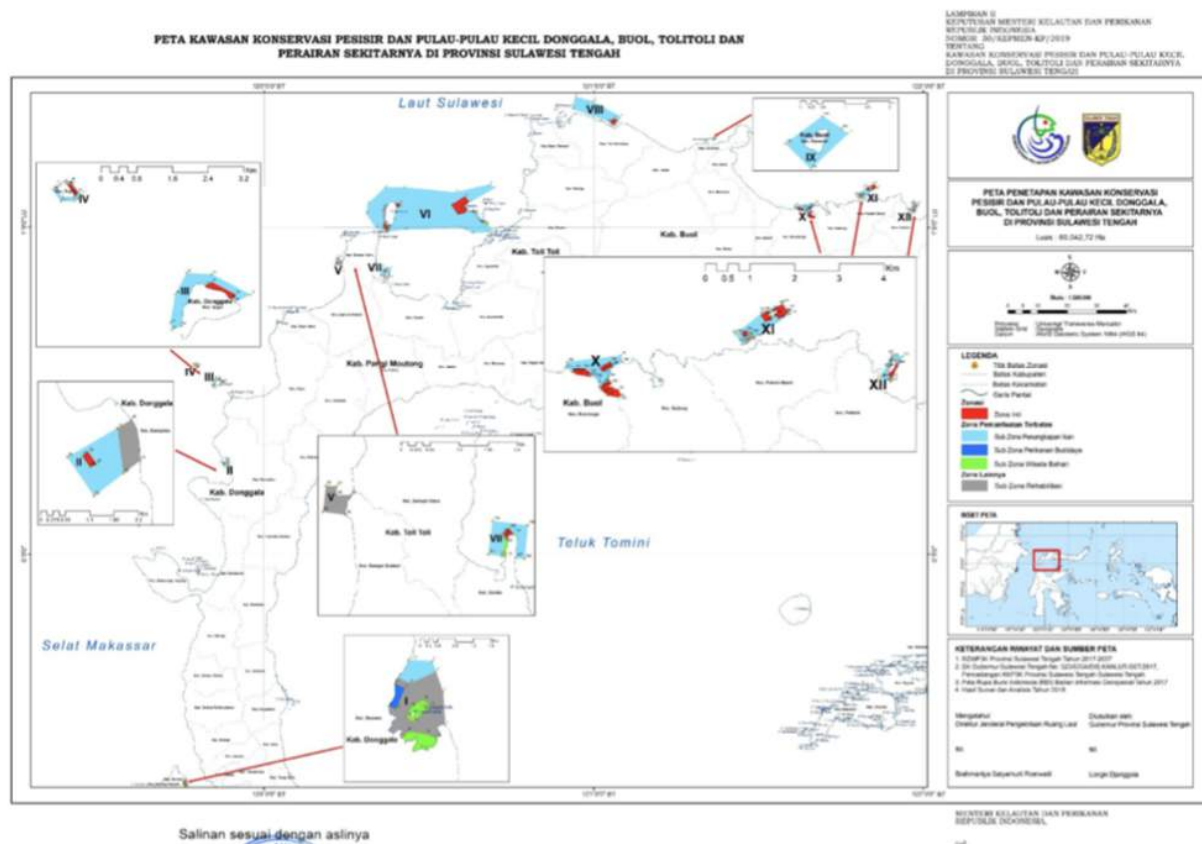
KKPD Tatoareng – Sangihe Islands

The process to establish Tatoareng as a KKP is still ongoing. On August 27, 2019 in Jakarta, the establishment of KKP Tatoareng was evaluated and deliberated by the Director of Marine Conservation and Biodiversity of the Ministry of Marine Affairs and Fisheries in the hope of accelerating it. In the draft KEPMEN KP, 164,251.94 hectares were reserved as KKP with three zones, namely the core zone, the limited utilization zone, and the zone for other purposes. Tatoareng was proposed to be made into a KKP because of its marine biodiversity potentials such as coral reef, seagrass, mangrove, napoleon, dugongs, dolphins, turtles, and sharks. The draft can be accessed here (http://jdih.kkp.go.id/bahanrapat/bahanrapat_13092019132353.pdf).



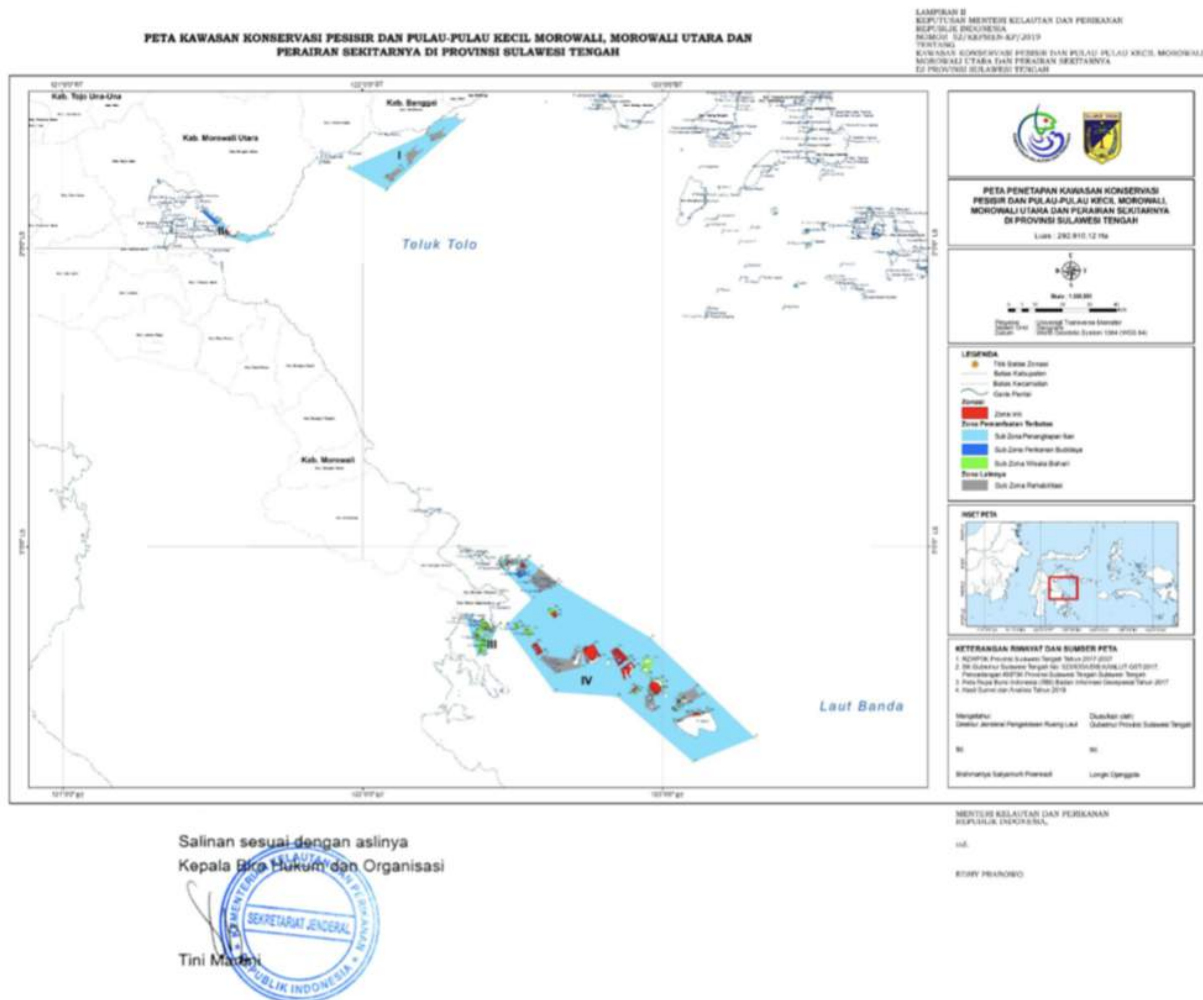
KKPD Doboto (Donggala, Buol, Tolitoli)

The local government has made the Donggala, Buol, and Tolitoli (Doboto) area into a protected area and it was established as a KKPD with an area of 60,042.72 hectares with the KEPMEN KP Number 50/KEPMEN-KP/2019. Economically important fish such as spine foot, fusiliers, emperors, groupers, red shrimp and protected organisms such as giant clam and turtles are targeted for conservation.



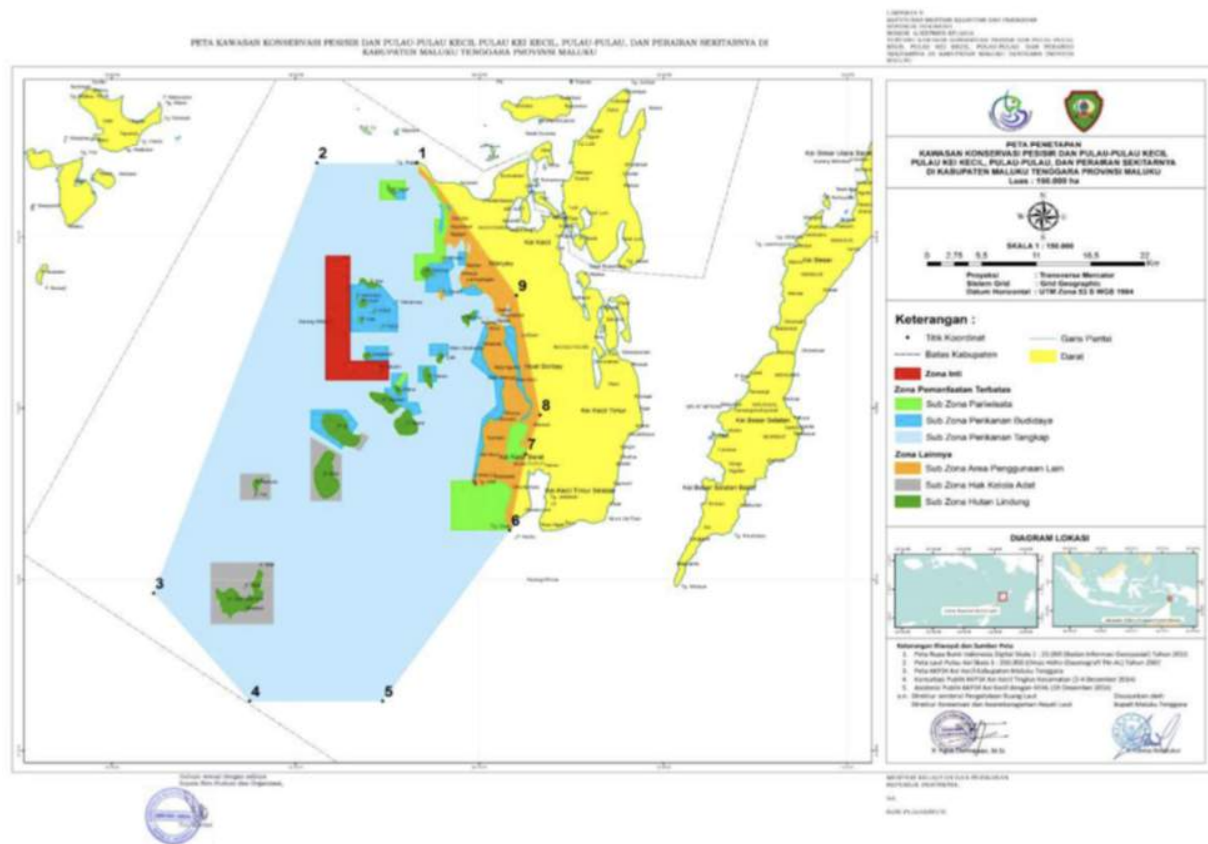
KKPD Parigi Moutong, Poso, Tojo Una-Una

On the same day that KKPD Doboto was established, the Minister of Marine Affairs and Fisheries also signed the KEPMEN KP NUMBER 51/KEPMEN-KP/2019 that established Parigi Moutang, Poso, Tojo Una-Una as a KKPD with an area of 128,689.86 hectares. The KKPD is divided into Area I Parigi Moutong with an area of 112,146.52 hectares, Area II Parigi Moutong with an area of 7,735.71 hectares, Area III Parigi Moutong with an area of 1,311.37 hectares, Area IV Poso with an area of 29.17 hectares, Area V Poso with an area of 47.37 hectares, Area IV Poso with an area of 6.32 hectares, and Area VII Tojo Una-Una with an area of 7,413.40 hectares. The presence of turtles, giant clams, bamboo corals, and eel migration route makes KKPD Parigi Muotong, Poso, and Tojo Una-Una a unique entity among the other KKPDs.



KKPD Kei Kecil Island – Southeast Maluku

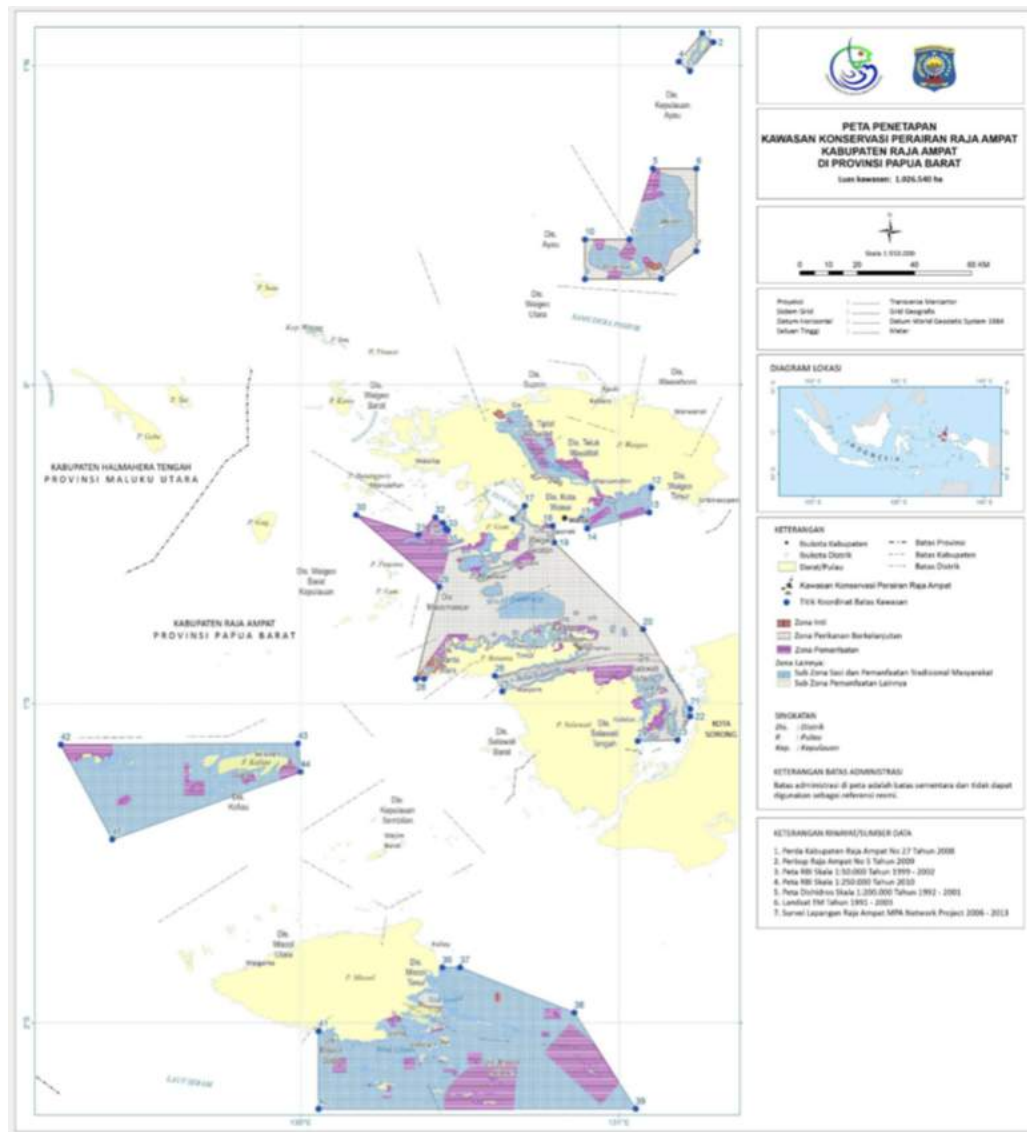
Kei Kecil Island and its surroundings in Southeast Maluku regency were established as a KKPD with KEPMEN KP Number 6/KEPMEN-KP/2016 with an area of 150,000 hectares. Conservation targets in KKPD Pulau Kei include important habitats and organisms such as coral, mangrove, seagrass, whale, turtle, dugong, and pelican. The sea to the west of Kei Kecil is a migratory habitat for leatherback sea turtle (*Dermochelys coriacea*), which is called *tabob* by the local people. *Tabob* has cultural values for the people of Nufit. However, their population keeps declining due to hunting by the people. More information about the local people of Kei Kecil Island can be read here (<http://kkji.kp3k.kkp.go.id/index.php/dokumen/finish/77-5-2-kei-kecil/750-studi-kelembagaan-masyarakat-lokal-kei-kecil-bagi-an-barat>).



KKPD Raja Ampat Islands – Raja Ampat

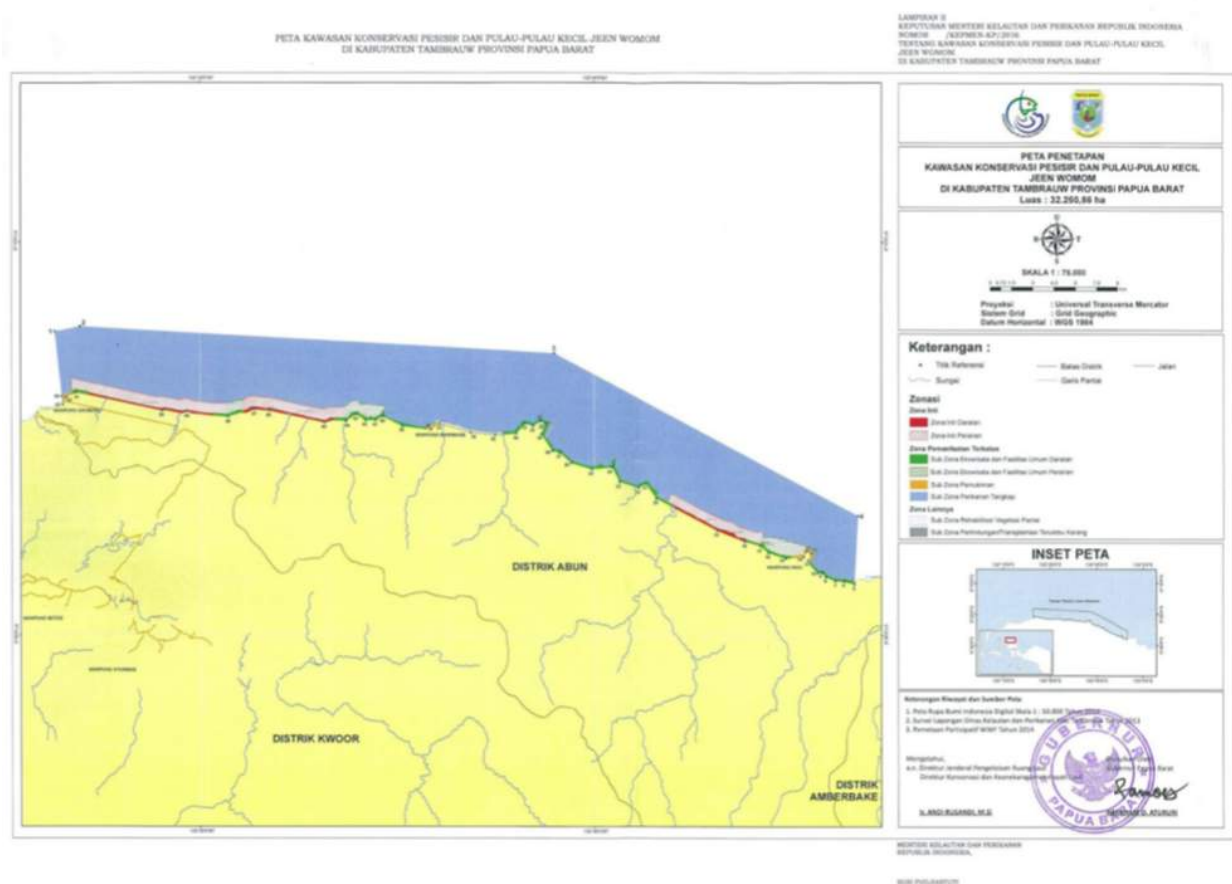
The KEPMEN KP number 36/KEPMEN-KP/2014 established the KKPD Raja Ampat Islands in the province of West Papua with an area of 1,026,540 hectares. The KKPD is divided into several areas, which are: the 101,440-hectare Area I (Ayau-Asia Islands), the 53,100-hectare Area II (Mayalibit Bay), the 336,000-hectare Area III (Dampier Strait), 366,000-hectare Area IV (the seas of Misool Islands), and the 170,000-hectare Area V (the seas of Kofiau and Boo Islands).

The KKPD is located at the heart of the world's coral triangle with the highest coral diversity and more than a thousand reef fish species. Conservation activities in KKPD Raja Ampat Islands are supported by the local people with their local wisdom, such as *sasi*, which has been proven to support the effectiveness of a protected area (McLeod *et al.*, 2009). The high diversity of marine organisms, the unique features, and the astonishing natural scenery provides attractiveness for economic activities of tourism in KKPD Raja Ampat Islands.



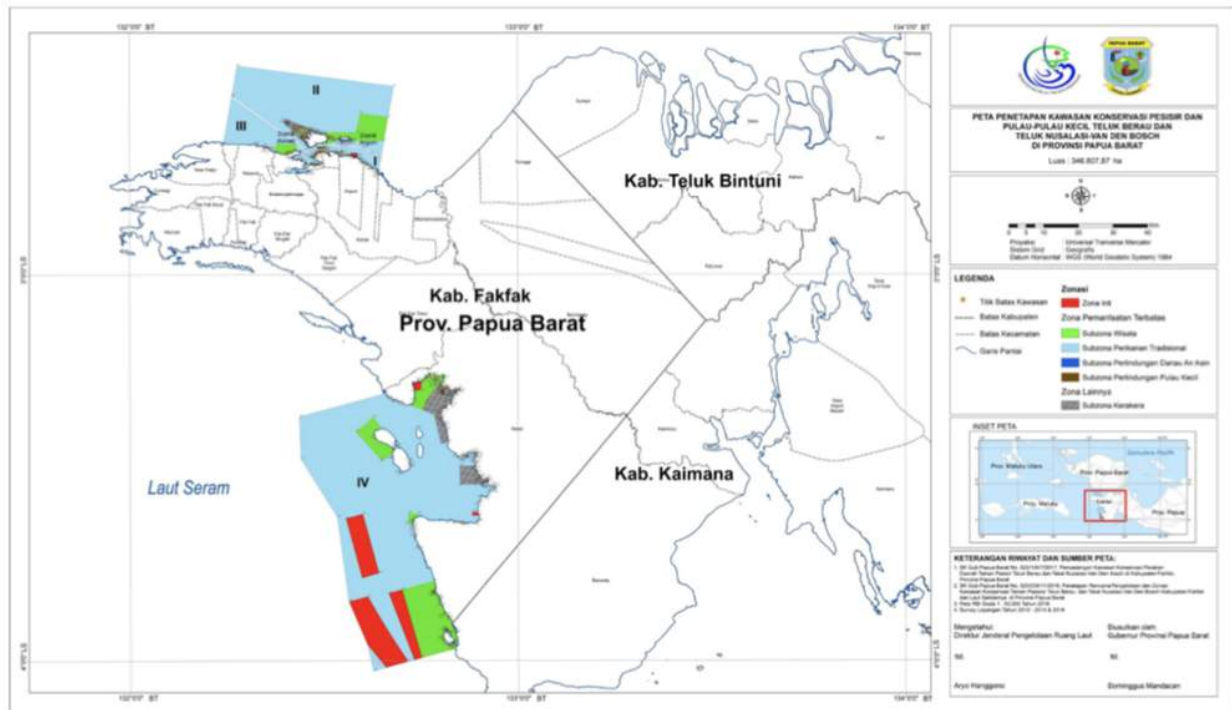
KKPD Jeen Womom – Tamberau

The area was established as Coastal and Small Islands Protected Area Jeen Womom in Tamberau Regency and the Surrounding Seas in the province of West Papua through the issuance of KEPMEN KP/53/KEPMEN-KP/2017 with an area of 32,250.68 hectares that covers Jamursba Medi and Warmon beaches. The two beaches were merged into Jeen Womom, the name of which was taken from the local language that means ‘the beach of turtles’. The name change was made official in Regent’s Decree No.522/3030 Year 2015. The area is a critical habitat for leatherback sea turtle (*Dermochelys coriecea*), olive ridley sea turtle (*Lepidochelys olivacea*), loggerhead sea turtle (*Caretta caretta*), green turtle (*Chelonia mydas*), and hawksbill sea turtle (*Eretmochelys imbricata*).



KKPD Kaimana

In 2008, Kaimana Regency was reserved by the Kaimana regent through Regent Regulation Number 4 Year 2008 as a marine protected area. Later in 2019, Buruway, Arguni, Kaimana, Etna Bay, and the Surrounding Seas in the province of West Papua was established as a KKPD through the KEPMEN KP Number 25/KEPMEN-KP/2019 with an area of 499,804.13 hectares. KKPD Kaimana will implement fisheries management with integrated tradition-based fisheries with a catch that includes skipjack tuna, Spanish mackerels, fusiliers, sea cucumbers, top shells, and green turbans.



Appendix 11. List of the people involved in the making of the document of Roadmap for Capacity Building of protected areas (in alphabetical order).

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