

**Coral Triangle Initiative  
Costing of the National Plan of Action**

INDONESIA

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## List of Acronyms

ADB	Asian Development Bank
CC	Climate change
CCRF	Code of Conduct for Responsible Fisheries
CI	Conservation International
CITES	Convention on International Trade in Endangered Species
CTC	Coral Triangle Center
CTI	Coral Triangle Initiative
CTI – CFF	Coral Triangle Initiative on Coral Reef, Fisheries and Food Security
CTMPAS	Coral Triangle Marine Protected Areas System
EAFM	Ecosystem approach to fisheries management
FAO	Food and Agriculture Organization of the United Nations
FMA	Fishery Management Areas
IUCN	International Union for the Conservation of Nature
IUU	Illegal, Unreported, Unregulated
JMC	Joint Monitoring Committee
KEMENKO	<i>Kementerian Koordinator Bidang Kemaritiman</i> / Coordinating Ministry for Maritime Affairs
LEAP	Local Early Action Planning
LRF	Live reef fish
LRFT	Live reef fish trade
MCS	Monitoring, Control and Surveillance
MM	Ministerial Meeting
MMAF	Ministry of Marine Affairs and Fisheries
MPA	Marine protected area
MSP	Marine spatial planning
MOEF	Ministry of Environment and Fisheries
NCC	National Coordinating Committee
NPOA	National Plan of Action
PES	Payments for Environmental Services
RETA	Regional Technical Assistance
RPOA	Regional Plan of Action
SEA	Sustainable Ecosystems Advanced
SSME	Sulu Sulawesi Marine Ecoregion
UNIA	United Nations Implementing Agreement
USAID	United States Agency for International Development
WCS	World Conservation Society
WG	Working Group
WPP	Wilayah Pengelolaan Perikanan (Fishery Management Areas)

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## 1. Background

As part of its support to the Coral Triangle Initiative, in particular to the Financial Resources Working Group, ADB pledged to support processes towards the costing of the National Plans of Action. ADB RETA 7813 supported the costing exercise for the Philippines and is now implementing the same for Malaysia and Indonesia.

Resulting from the recommendations of the Financial Resources Working Group Meeting held in March 2015 and the CTI Financial Architecture Study presented by Consultant AECOM during said meeting, Indonesia NCC communicated their readiness to cost their CTI National Plan of Action in January 2017, when the updating of the NPOA process was almost accomplished.

## 2. Approach and methodology

The processes leading to the preparation of this report consist of a series of costing workshops/meetings which is closely linked to the National Plan of Action (NPOA) updating process, also described in brief. Also described in this section is the general approach to costing, ie., use of basic cost components, as well as the classification of costs according to 7 sub-categories.

### *Costing Workshop, February 23-24, 2017*

The Indonesia costing workshop was attended by about 25 participants from all the 5 working groups plus two cross cutting working groups (Food Security and Monitoring and Evaluation), newly created per revised NPOA. A costing template was introduced and applied to the updated NPOA which already had preliminary costing. These were based on existing budgets as well as contributions of NGOs to some of the actions. Most working groups completed 50% of their costing during the workshop proper and continued working on the matrices up to July 2017.

### *NCC Meeting and Specific Meetings of the 5 working groups, July 2017*

En banc meeting of the NCC was organized on July 11, 2017 to agree on the contents/outline of the Costing Report, determine required inputs from the five working groups, and arrange subsequent meetings to finalize the costing report together with the ADB consultant. On July 12, individual working group meetings were arranged with the Species Group, the MPA group, and the Seascape group while on July 13, meetings were arranged with Fisheries and Climate Change. The ADB consultant prepared draft reports for each of the Working groups and communicated individually with the focal persons.

### *Updating of the NPOA*

The implementation period for the Indonesia NPOA on Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security (CTI-CFF) ended in 2014. Unfortunately, the NPOA was not updated in 2015 due to Indonesia's commitment as Host Country to support the transition of Interim Regional Secretariat of CTI-CFF to its permanent status. Despite this, the working groups have been continuously meeting since August 2016 to commence the updating process. Presently, the updated NPOA covers an implementation period from 2016 to 2020 and maintains consistency with the Regional Plan of Actions (RPOA).

### *Cost components*

During the costing workshop, ADB consultant recommended the use of budget items and codes according to standard government rules such as that of the budget or audit agencies. Likewise, the costing exercise recommended for some specificity in estimation – such as determination of unit costs and quantities. This will facilitate cost adjustments whenever required. Standard costs identified included the following:

- Travel (Airfare, Perdiem, Local Transport, Accommodation)
- Package Meetings (meeting room, meals, etc)
- Resource person
- Supplies and materials
- Honorarium (local transport)
- Assets (equipment, land, building, machines)

### *Sub categories of costs*

- Assessments : all forms of data collection, surveys, assessments, establishment of databases, and geographic information systems
- Training and capacity building : includes all activities that improve human resources capacity such as workshops, trainings, formal education, etc. and those that support institutional strengthening; national and international events / conferences
- Awareness raising : information and communication
- Policy formulation and advocacy : preparation/ analysis of policy options, strategies, road maps; planning; relevant consultations, coordination between and among relevant ministries, and with partners and other CTI countries – including trans-boundary programs
- Infrastructure : regular definition of infrastructure such as equipment, buildings, public infrastructure such as roads but also including site-based works such as habitat restoration and enhancement

- Enforcement and surveillance : includes patrols, monitoring and surveillance particularly of illegal activities, and related investments in hardware and software
- Financing : all activities seeking to determine, estimate, plan for financing mechanisms to support further action

### 3. Costing of the National Plan of Action

#### 3A. Seascapes

##### Background

Limited space of the ocean frequently results in conflicts between sectors, users, or priorities. A Seascape is a large, multiple-use marine area, scientifically and strategically defined, in which governments, communities, private organizations, and other stakeholders cooperate, collaborate, and coordinate to manage for sustainable development, biodiversity conservation, and human well-being. Functionally, seascapes provide a platform to coordinate the various policies, laws, and regulations within the marine space such as navigation, fishing, mining, and traditional and cultural uses.

Seascapes are areas in which the management and conservation of natural resources can coexist to provide a pathway towards sustainable economic development. The integrative nature of seascapes allows for the pursuit of a multitude commitments, target, and goals to improve ecological and socio-economic well-being. A range of planning tools can be utilized to pursue seascapes.

Given that seascapes are large, typically across political boundaries (whether districts, provinces, or countries), and involve users from multiple sectors, their effective implementation requires management that is comprehensive, integrated, and transparent. In developing seascapes in Indonesia, Government of Indonesia utilizes Marine Spatial Planning (MSP) as a tool for achieving comprehensive planning and management. MSP is a public process of analyzing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic, and social objectives that are usually specified through a political process. MSP has been widely used to resolve conflicts between development and conservation needs by helping to: 1) manage current and potential conflicting uses; 2) anticipate and plan for the impacts of human activities; 3) promote the protection of marine resources; and 4) increase the transparency of planning processes.

In formulating MSP in Indonesia, the geographical scope needs to be determined. This is important for scaling-up and scaling-down the information level and substantial elements of the plan. In this context, seascapes can play the role as the geographical scope of MSP. Seascapes can be delineated based on specific administrative boundaries (national, strategic area, provincial) or geographical boundaries (trans-boundary areas covering more than one province such as Bay, Strait, and Sea; and trans-national/regional covering two or more countries such as Sulu-Sulawesi, Lesser Sunda, Bismarck-Solomon Seas).

### Status

Several seascapes in Indonesia's jurisdiction are already established, focusing on conservation and community development, including:

- (1) Bird's Head Seascape, which encompassing the areas of West Papua and parts of Papua
- (2) Lesser Sunda Seascape, which covers the chain of islands in Bali, the Nusa Tenggara, and the south of Sumba and Rote

In addition, there are trans-national seascapes covering several countries including the Sulu-Sulawesi Seascape, which encompasses areas of Indonesia, Malaysia, and the Philippines; and Bismarck-Solomon Sea Ecoregion, which includes Solomon Islands, Papua New Guinea, and Indonesia. Management arrangements have also been established to support the Arafura-Timor Sea Ecosystem Action Cooperative Program involving Timor-Leste, Indonesia and Australia.

In the future, several seascapes could still be declared as such, including the Sunda-Banda Seascape covering marine area and islands from Bali to Nusa Tenggara area, Southeast Maluku, Kupang and up to the north covering the southern part of Sulawesi Island; Anambas-Natuna Seascape encompassing the islands of Anambas and Natuna in Riau Islands province; and West Coast of Sumatera.

Since marine spatial planning will be utilized as planning tool of Seascapes in Indonesia, it is also important to recognize its present status. National marine spatial plan is at the final formulation process and will be soon legalised through Government Regulation. In the level of provincial marine spatial plan, North Sulawesi is the only province having legalised marine spatial plan; 10 provinces are in the final phase of the formulation process; while the 23 rest provinces are still at the beginning step of the plan development. Likewise, marine spatial plans for 20 outer islands and specific trans-provincial regions are in the development process, including Makassar Strait, Java Sea, Batam-Bintan-Karimun region, Jabodetabekpunjur region. In the next years, marine spatial plans for 15 more trans-provincial regions and some national strategic areas will be developed.

## Location

The development of seascapes in Indonesia will be conducted in several established seascapes such as Bird's Head Seascape, Lesser Sunda Seascape, Sulu-Sulawesi Seascape, and Bismarck-Solomon Sea Ecoregion; also in several potential locations like Arafura-Timor Sea, Sunda-Banda Seascape, Anambas-Natuna Seascape. Some efforts will also be arranged to streamline seascapes and fisheries management area (FMA) or *wilayah pengelolaan perikanan (WPP)*, , taking WPP 715 as the location of pilot project.

Seascapes in Indonesia, which utilize MSP as planning tool, cover several levels of planning based on administrative or geographical boundaries. Administratively, the 34 provinces have to formulate and legalised their marine spatial plans. North Sulawesi is the only province having legalised its marine spatial plan; while the rest of the provinces are still at the development process. Geographically, there are several marine spatial plans at the national level which still needs to be formulated, and later assigned as trans-provincial seascapes, such as bay/gulf, strait, and inner sea.

## Policy Framework

Since seascapes in Indonesia utilize Marine Spatial Planning as a planning tool, therefore the existing policy framework is in the context of marine spatial planning as follows:

*Law Number 1 of 2014 amending Law Number 27 of 2007 concerning the Management of Coastal and Small Islands*

In this law, a marine spatial plan is stated as one of the plans that must be formulated in order to manage the coastal zone and small islands sustainably. Here, an MSP determines the course of resource exploitation of each unit of planning accompanied by the establishment of space structure and pattern in the planning area containing permitted and prohibited activities, and activities that require licenses and/or permits. Marine spatial planning consists of space allocation within the Public Exploitation Area, Conservation Area, Particular National Strategic Area, and sealanes.

*Law Number 32/2014 concerning Marine Affairs*

Article 43 of the law specifies that MSP in Indonesia includes national level marine spatial planning, coastal and small islands, and marine spatial plan of specific regions. National marine spatial planning is the authority of central government, while marine spatial plan of coastal and small islands have to be formulated by local government and legalised through their regional decree. Marine spatial plan of specific region includes marine spatial plan of national strategic area, marine spatial plan of particular national strategic area, and marine spatial plan of trans-provincial area, which must all be developed by state government.

### Issues in Seascapes Management

Among the main issues seascapes are seen to address include various inter-sectoral overlapping usage of the ocean. This overlap is reflected in the nested levels of governance involved in seascape management, i.e, provincial, national, regional/trans-boundary, all of which have specific mandates that may at times conflict. Seascapes cover large areas requiring substantial financial, human resources, and data needs- especially since it magnifies the issues plagued by the coastal resources at present including degraded ecosystems and vulnerability to climate change and natural disasters. Added to these challenges are socio-economic issues that also contribute indirectly to the overexploitation and misuse of coastal resources and vulnerabilities of communities.

Given these issues, the seascape actions defined in this exercise of NPOA costing optimizes the advances in existing seascapes and at the same time acknowledges the potential for more seascapes to be established. One important aspect of the work of Indonesia NCC is the ability to operationalize the seascape concept by applying MSP tools.

### NPOA Actions and Summary Costs

The NPOA has two targets and 8 actions in total (Box 1). Central to the seascape management model is the operationalization and unpacking of the seascape concept as follows : (i) harmonization with fisheries management areas and (ii) utilization of marine spatial planning (MSP) as a management tool.

Target 1 covers a series of scientific characterization for delineating new seascapes, notably Sunda-Banda, Sawu Seascape, and Bird's Head Seascape ; harmonizing the seascape concept with that of fisheries management areas; and identification/assessment of transboundary seascapes.

**Target 1. "Priority Seascape" Designated and Effectively Managed**

- Seascape designated will be streamlined with the existing fisheries management areas (*wilayah pengelolaan perikanan - WPP*)
- Conduct series of scientific characterization to identify and delineate several new seascapes within Indonesia's jurisdiction, for example: Sunda - Banda and Sawu Seascape, Bird's Head Seascape (BHS)
- Conducting series of scientific characterization to identify and delineate seascapes with potential trans-boundary issues

**Target 2. Marine and Coastal Resources within All "Priority Seascapes" are Being Sustainably Managed**

- Maintaining the on-going management of existing seascapes for improved quality of marine and coastal resources
- Lesson learned mechanism from existing seascape for replication in Indonesia will be in place
- Mobilize new and additional funding to support priority seascape program
- Implementation of existing regional seascapes (SSME and BSSE) program within Indonesian jurisdiction
- Conduct periodic monitoring and evaluation on the effectiveness of seascapes

**Box 1. Targets and actions for Goal 1, Seascapes**

The harmonization of the seascape concept with the fisheries management area concept is planned for Birds Head Seascape and WPP 715, jointly with Coral Triangle Center (CTC) and Conservation International (CI), while discussions between provincial and district governments to synchronize their fisheries, MSP, and MPA related work plans will be implemented in the Arafura Sea-Ambon, North Maluku area, involving USAID Sustainable Ecosystems Advanced (SEA) Project, Worldwide Fund for Nature (WWF), CTC, and World Conservation Society (WCS).

Seventeen potential seascapes are being considered for establishment with MSP integrated as a tool. Preparation of MSP for 17 new seascapes<sup>1</sup> undergoes a

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<sup>1</sup> (1) Java Sea; (2) Banda Sea; (3) Natuna Sea; (4) Flores Sea; (5) Sawu Sea; (6) Sulawesi Sea; (7) Maluku Sea; (8) Aru Sea; (9) Seram Sea; (10) Bali Sea; (11) Halmahera Sea; (12) Makassar Strait; (13) Sunda Strait; (14) Sumba Strait; (15) Malacca Strait; (16) Tomini Bay; (17) Bone Bay; and (18) Cendrawasih Bay.

standard process beginning with the preparation of a draft MSP, consultations, finalization of MSP and development of policy through a presidential regulation.

Marine spatial plans shall also be prepared for 34 provinces in various stages of implementation. Three provinces, i.e Maluku, North Maluku, West Papua, are currently supported by WCS and USAID SEA PROJECT through technical assistance (data collection, groundchecking, regular meetings, public and technical consultation meetings). Meanwhile, 15 provinces, namely Aceh, North Sumatera, Riau, Kepulauan Riau, Jambi, South Sumatera, Bengkulu, Bangka Belitung, Daerah Istimewa Yogyakarta, Bali, West Kalimantan, East Kalimantan, Gorontalo, Southeast Sulawesi, Papua will start from a zero knowledge base. As such the costing reflects basic oceanographic and water quality surveys, habitat assessments for coral reefs, seagrass and mangroves, and fisheries assessments for both pelagic and demersal stocks. All these assessments shall inform the preparation of the MSP which will undergo a series of consultations before finalization and endorsement as a policy. Eight provinces (West Sumatera, West Java, East Java, Central Sulawesi, South Sulawesi, North Kalimantan, Central Kalimantan, South Kalimantan) already have a draft MSP while 8 Provinces (Banten, DKI Jakarta, Lampung, Central Java, North Sulawesi, West Sulawesi, West Nusa Tenggara, East Nusa Tenggara) already have a final MSP; what is currently reflected is the cost of legislation at the province level.

Lastly, Target 1 actions include further assessments to allow identification and delineation of seascapes with potential trans-boundary issues. Among some of these actions are as follows: (i) biodiversity assessment of the Arafura Seas (supported by WWF); (ii) data collection migratory species such as sea turtles, whale sharks, manta, cetaceans, and, sharks, in the SSME, Sunda-Banda seascape, and Bird's Head Seascape; and (iii) development of a seascape diagnostic Analysis, which was recommended by the Coordinating Ministry for Maritime Affairs or Kementerian Koordinator Bidang Kemaritiman (Kemendo).

Target 2 strives for sustainable management of existing seascapes, specifically the Sulu Sulawesi Seascape and the Bird's Head Seascape, deriving lessons learned for replication, securing a steady stream of financial support, and monitoring and evaluation. Sustainable financing studies are planned to be tested in the Lesser Sunda, Banda Sea, Anambas Natuna, and Bird's Head Seascape.

A total of USD 11.8 million<sup>2</sup> is required to fully implement Goal 1 of the Indonesia NPOA from 2017-2020 with Target 1 requiring 80% of the total costs. As shown by the activities mapped out for both targets, data collection including surveys, habitat assessment, oceanographic surveys, fisheries surveys – are key towards the preparation of marine spatial planning both at the provincial and seascape levels. These same data requirements are needed also to determine trans-boundary issues. Assessments comprise 53% of total costs for Target 1 while another 46%

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<sup>2</sup> Rupiah equivalent to 1 USD = 13342.

consists of activities related to policy formulation and planning, specifically related to MSP consultations and policy development.

For Target 2, an annual meeting is planned for all years from 2017-2020 in order to foster shared learning between SSME and Bird's Head Seascapes. Further capacity building involves updating the scientific design of the Lesser Sunda MPA network, campaigns related to Savu Sea conservation, biodiversity monitoring training, and development of business plans for sustainable financing. Measuring the effectiveness of seascape management was likewise identified but not costed for this iteration of the NPOA due to the lack of knowledge on management effectiveness parameters. No costs for infrastructure or any site-based civil works and enforcement as well as surveillance costs were identified mainly because basic assessments and studies need to be accomplished prior.

**Table 1. Estimated costs for seascape targets**

Sub-Categories	Target 1, 2017-2020	Target 2, 2017-2020	TOTAL, T1 and T2
Assessments	4,941,538.00	2429641.96	7,371,179.96
Training and capacity building	86,943.49	127417.18	214,360.67
Awareness raising	0	2998.05	2,998.05
Policy formulation and advocacy	4,241,688.13	0	4,241,688.13
Infrastructure	0	0	0.00
Enforcement and surveillance	0	0	0.00
Financing	0	7495.13	7,495.13
<b>TOTAL</b>	<b>9,270,169.62</b>	<b>2,567,552.32</b>	<b>11,837,721.94</b>

### 3B. Ecosystem approach to fisheries management

#### Background

In 2003, the United Nations Food and Agriculture Organization (FAO) defined EAFM as — *“an approach to fisheries management and development that strives to balance diverse societal objectives, by taking into account the knowledge and uncertainties about biotic, abiotic, and human components of ecosystems and their interactions and applying an integrated approach to fisheries within ecologically meaningful boundaries”*

EAFM merges fisheries management with ecosystem management; thus, broadening the focus on providing food and livelihoods for humans with protecting

and conserving ecosystem structure and functions. Some elements of EAFM are already being done through conventional fisheries management. However, EAFM builds further on these existing management approaches to address the range of issues beyond simple management of target species within a fishery. With EAFM, some assessments, decision-making and management are done differently to take a more integrated approach to fisheries management that includes managing the interactions between the fishery - fish and fishers - and the other essential components of marine ecosystems that are critical for sustaining the fishery such as conserving biological diversity and ecological resilience. EAFM helps to align fisheries management with natural and human systems.

As its commitment towards Goal 2 of the CTI, Indonesia implemented several activities including (i) EAFM Indicator development to monitor and evaluate progress; (ii) application of EAFM indicators; and (iii) Learning and Information Center including development of training modules on data collection and analysis. EAFM indicators are (1) fish resource; (2) habitat; (3) fishing technique; (4) social; (5) economic; and (6) institutional. These EAFM indicators have been tested by experts in several Fisheries Management Areas with some summary results available on the website of the MMAF<sup>3</sup>. Using color codes, information on particular fisheries and / or FMA is presented as follows: dark green (very good), light green (good), dark yellow (medium), yellow (not good), and red (bad).

While the poverty rate declined by 1% annually from 2007 to 2011, since 2012 poverty has declined by an average of only 0.3 percentage points per year. Hence out of a population of 252 million, more than 28 million Indonesians still live below the poverty line. Approximately 40% of the entire population remain vulnerable of falling into poverty, as their income hover marginally above the national poverty line.

Perhaps the only CTI program with direct poverty intervention is COASTFISH. Poverty among fishers is prevalent across the Coral Triangle countries. As an archipelagic country, Indonesia has vast coastal areas which are inhabited by about two million fishermen and farmers. It is estimated that 60% of the fishermen in villages still have average incomes below the minimum requirements<sup>4</sup>.

## Status

Indonesia has 11 Fisheries Management Areas (FMA) or *wilayah pengelolaan perikanan (WPP)* which is consistent with the FAO Statistical Fishing Areas (Fig. 1). Each FMA is established by ministerial decree under Law 31 amending Law 45 of 2009. Ministerial regulations recognizing fisheries management areas # 711, #713, #714, #715, #716, #717 have been enacted.

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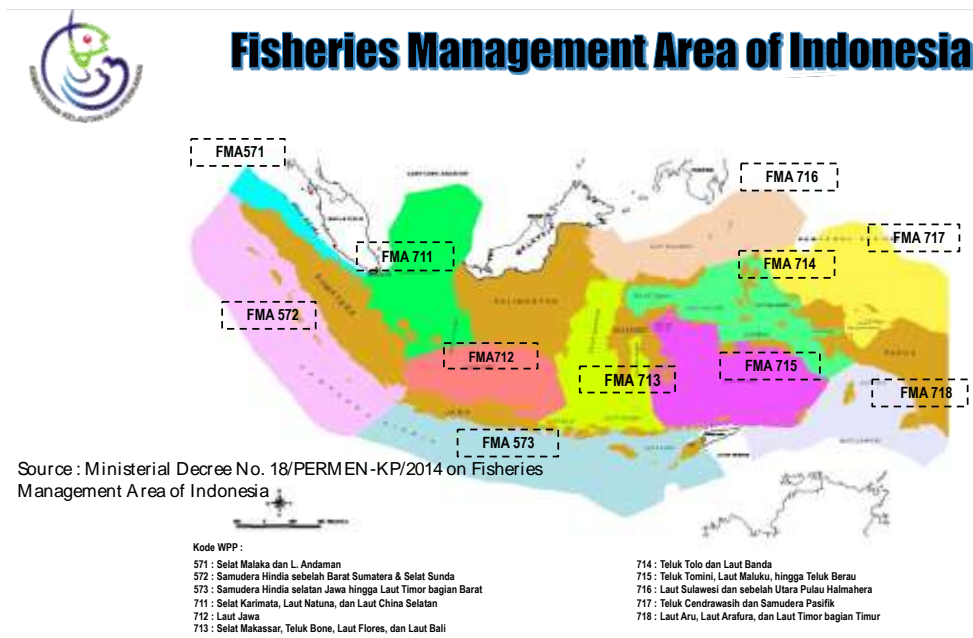
<sup>3</sup> <http://www.eafm-indonesia.net/>

<sup>4</sup> Wekke and Cahaya (2015). Fishermen Poverty and Survival Strategy: Research on Poor Households in Bone Indonesia. *Procedia Economics and Finance* 26 ( 2015 ) 7 – 11

Ministerial decree No. 47/KEPMEN-KP/2016 establishes potential fisheries resources, total allowable catch, and exploitation rates for every FMA. Based on the information provided, the status of overexploitation for all fishery management areas is summarized in Table 2. Penaeid shrimp is fully exploited (greater than 1.5) in FMA 714, 716, and 717. Small pelagic fish reached its highest exploitation level of 1.64 in FMA 711 but in most other FMAs, exploitation is only half of potential. The same is true for large pelagics which attained highest exploitation level in FMA 715 at 1.58. Meanwhile reef fishes are only threatened in FAM 573 and 716, and the rest are underexploited. The highest level of exploitation for squid (*Cumi cumi*) is observed in FMA 711.

**Table 2. Summary status of exploitation**

Fishery Management Areas	Overexploitation Ratio		
	Greater than 1.5	Between 1.25 and 1.5	Between 1 and 1.25
571	Penaeid	Lobster and crab	Small pelagics, demersals
572	Penaeid	Large pelagics, lobster, blue swimming crab	
573		Penaeid, reef fish, crab, squid	
711	Small pelagics, squid	Penaeid, crab	lobster
712	Squid	Penaeid, lobster, crab, blue swimming crab	Large pelagics
713	Penaeid, squid	Lobster, crab, blue swimming crab	
714	Crab		Blue swimming crab
715	Large pelagics, crab, squid	Penaeid, lobster, blue swimming crab	Small pelagics
716			Squid, blue swimming crab, reef fish
717		Blue swimming crab, lobster	
718		Reef fish, lobster, penaeid	



**Figure 1. Fisheries management areas (FMA) of Indonesia**

## Policy framework

The EAFM approach, particularly to fisheries management in Indonesia, is called for through Law No. 31/2004 on Fisheries; Law No. 27/2007 on Coastal Management; and Government Regulation No. 60/2007 on Fish Resources Conservation. Act No. 31 of 2004 on Fisheries as amended by Act No. 45 of 2009 states that fish resources conservation are needed to guarantee the existence, stock and continuity of fishery resources, including their ecosystems, species and genetics. The government can establish a site as a conservation area, in the form of aquatic nature reserve, national water park, water recreation park, and/or fishery reserve. Government Regulation No. 60 of 2007 on Fishery Resources Conservation regulates three conservation activities: ecosystem conservation, conservation of fish species, and conservation of fish genetics. Ecosystem conservation consists of the ocean, seagrass beds, coral reefs, mangroves, estuaries, coastal swamps, rivers, lakes, reservoirs, ponds, and artificial aquatic ecosystems. Conservation of fish species is intended to protect endangered fish species, maintain fish species diversity, preserve the balance and stability of ecosystems, and utilize fishery resources sustainably. Conservation of fish genetics requires maintenance, breeding, research and preservation of genetic resources. This regulation is followed by Decree of the Minister of Marine Affairs and Fisheries No. 30 of 2010 that regulates plans for management and zonation of MPAs, and Decree of the Minister of Marine Affairs and Fisheries No. 17 of 2008 that regulates protected areas in coastal and small islands areas.

Central also to fisheries management are policies on decentralization, notably Act No. 32 (2004) which specifies the power of the regional government and ensures financial balance between national and regional governments. In 2014, Act No. 23 (2014) redefines intra-governmental relations that includes fisheries and MPA management. Also viewed as attempts towards “recentralization”, Act 23 transfers authority for fisheries management (as well as other natural resources) to the provinces, with the governor acting as a representative of national government. Further guidance and discussions on how this policy will affect fisheries management is ongoing.

Management of tuna, skipjack, and neritic tuna resources are in accordance with the principles adopted in Code of Conduct for Responsible Fisheries (CCRF), FAO 1995. Based on Article 6.2 of the CCRF, FAO 1995, responsible fisheries management should ensure the quality, diversity, and adequate fish resources availability, for the current and future generation, in order to achieve food security, poverty reduction, and sustainable development. Considering tuna and tuna-like species are highly migratory fish stocks and/or straddling fish stocks (straddling fish in or between Exclusive Economic Zone of one or more countries and high sea), thus tuna management must be done through regional and/or international collaboration. Article 10 paragraph (2) of Law Number 31 on Fisheries as amended by Law Number 45 of 2009 states that the government shall play an active role in the membership of regional and international agencies/institutions/organizations in the framework of cooperation in the regional and international spheres. In addition, the government has issued Law Number 21 of 2009 on Ratification of Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (United Nations Implementing Agreement – (UNIA, 1995). Ratification of UNIA 1995 is the commitment of Indonesia to collaborate with various countries in the world for sustainable tuna management.

Some of the regional organizations which Indonesia is a member of and with specific provisions on tuna management include:

- a. Indian Ocean Tuna Commission that manages tuna and tuna-like species in Indian Ocean;
- b. Commission for the Conservation of Southern Bluefin Tuna that manages the southern bluefin tuna;
- c. Western and Central Pacific Fisheries Commission that manages tuna and tuna-like species in Western and Central Pacific;
- d. Inter-American Tropical Tuna Commission that manages tuna and tuna-like species in Eastern Pacific;
- e. International Commission for the Conservation of Atlantic Tuna that manages tuna and tuna-like species in Atlantic Ocean.

## Issues

The current version of the CTI-NPOA acknowledges that Indonesia's oceans are at or near maximum sustainable fisheries yields. Overfishing is the most commonly observed result of fisheries development with dire consequences in the social, economic, cultural and ecological realm.

The following constraints affect fisheries management and aquaculture development: overfishing in both marine and inland fisheries waters; low income and standard of living for fishers and fish farmers; lack of financial support in terms of credit schemes; weak fisheries management, particularly concerning monitoring, surveillance and enforcement (MCS). Illegal, unreported and unregulated (IUU) fishing is a major problem in the country.

In terms of development, there is a seeming imbalance with development of fisheries in the western part of the country occurring faster than in the eastern part. This is related to the fact that in the Eastern part there is a lack of infrastructure such as port facilities, electricity, transport facilities and fuel supply for vessels. Moreover, the western part is closer to markets, especially to Java. A shortage of markets may be the main constraint for the development of fisheries in the eastern part. When the Eastern part will be better provided for in terms of fisheries infrastructure, including those that facilitate market access, it is likely that fisheries production of the country will increase appreciably.

**Target #1 : Strong Legislative, Policy and Regulatory Frameworks in Place for Achieving an Ecosystem Approach to Fisheries Management (EAFM)**

**Action 1.** Develop regulations related to the EAFM supporting Law No. 27/2007 on coastal and small island management and Law No. 31/2004 on Fisheries (By 2020)

**Action 2.** Address and enforce legislation and regulations in combating IUU fishing and related issues (By 2019)

**Action 3.** Implementation of National Plan of Action derived from international Plan of Actions such as IPOA on Fishing Capacity (By 2020).

**Action 4.** Incorporate EAFM and payments for environmental services (PES) in bilateral and regional commitments on fisheries management (By 2020).

**Target #2: Improve The Income, Livelihoods and Food Security Of 50 Million People Living In Coastal Communities Across The Region Through A New CTI Sustainable Coastal Fisheries and Poverty Reduction Initiative (“COASTFISH”)**

**Action 1.** Continue existing and, as needed, develop alternative income generating program, including capacity building and support for the small-scale enterprise at the community level (e.g., marketing) (By 2020).

**Action 2.** Additional funds and/or capital small-scale enterprise at the community level (By 2020).

**Action 3.** Develop integrated coastal fisheries communities to achieve sustainable fisheries (By 2020)

**Action 4.** Facilitate ecolabel certifications schemes to establish responsible fisheries through implementation of best fisheries practices and fisheries improvement projects (By 2020)

**Action 5.** Improve existing collaborative funds and/or capital for small scale fisheries (By 2020).

**Action 6.** Strengthening collaborative market information for small scale fisheries product (By 2020).

**Target #3 : Effective Measures in Place to Help Ensure Exploitation of Shared Tuna Stocks is Sustainable, with Tuna Spawning Areas and Juvenile Growth Stages Adequately Protected**

**Action 1.** Strengthen on Tuna Fisheries Management (By 2020).

Action 2. Encourage participation of Tuna Association (By 2020).

**Target #4 : More Effective Management and More Sustainable Trade in Live-Reef Fish and Reef-Based Ornamentals Achieved**

Action 1. Develop baseline data of aquarium fish and promote standard of Marine Aquarium Fish (By 2020).

Action 2. Develop and implement strategic plan of sustainable fisheries for live reef fish (By 2020).

Action 3. Develop comprehensive management plan of Banggai Cardinal Fish (By 2020).

Action 4. Conduct collaboration to improve management and International Trade in Live-Reef Fish and Reef-Based Ornamentals (By 2018)

Action 5. Encourage participation of Reef-Fish Stakeholders on Management and Trade (By 2020)

**Box 2. Targets and actions for Goal 2, EAFM**

## NPOA Actions and Costs

Goal 2 on EAFM has 4 targets and 17 actions (Box 2). Broadly, Goal 2 aims to addresses policy consistency, improve fisheries management for tuna and live reef fish, and address poverty issues. Across the Coral Triangle, the concept of “ecosystem approach to fisheries management” was embraced as the overarching framework for fisheries management. Thus, the actions identified by Indonesia on development and implementation of EAFM related regulations supporting Law No. 27/2007 on coastal management and Law No.31/2004 on fisheries show consistency and compliance with the CTI regional framework. Within the country, consistency between national laws and provincial/district regulations is also aimed for as evidenced by various capacity building initiatives. To ensure implementation of EAFM, a number of activities are planned including capacity building for 260 persons; conduct of workshops for implementing EAFM in all FMAs; and application of EAFM indicators in all FMAs. Establishment of fisheries management commissions is planned in all FMAs to address the lack of coordination among multiple agencies involved in fisheries management. Addressing IUU and by-catch mitigation are also included in EAFM implementation. A total of USD 15.4 million is required to implement Target 1, which consists almost equally of costs associated with assessments and studies and enforcement (Table 3). For enforcement, the bulk of costs is towards integrated patrolling in FMAs 571, 711 and 718.

COASTFISH is the theme of the second target and based on the actions identified by Indonesia, this program will focus on creating alternative incomes, include including capacity building and support for the small-scale enterprise at the community level (e.g., marketing) and development of small and medium scale enterprises and post harvest training in all FMAs. COASTFISH shall also feature financing for small enterprises especially in remote areas, foster business partnerships, and enhance information sharing on market information at the Indonesia seafood guide website. USD 2.3 million is required by the COASTFISH Program of which almost 70% consists of financing needs for small businesses.

Actions relevant to tuna include the full implementation of the tuna management plan and the organization of a global tuna conference in 2017. Total costs for tuna-related actions is USD 125,000 consisting of awareness raising and training and capacity building. Unlike tuna, where a management plan has already been developed, live reef fish requires a national strategy. Thus, the actions focus on the development of this strategy and when completed, a pilot project on harvesting strategy shall be implemented in FMA 573.

**Table 3. Estimated costs for fisheries targets**

	Target 1	Target 2	Target 3	Target 4	TOTAL
Assessments	-	0	119922.05	1686.4	121,608.45
Training and capacity building	7,773,722.76	738899.72	7495.13	0.0	8,520,117.60
Awareness raising	-	0	0	0.0	-
Policy formulation and advocacy	385,080.95	0	0	1686.4	386,767.35
Infrastructure	-	0	0	0.0	-
Enforcement and surveillance	7,283,525.71	0	0	0.0	7,283,525.71
Financing	-	1602023.69	127417.18	0.0	1,729,440.86
TOTAL	15,442,329.41	2340923.4	0	3372.8	17,786,625.62

### 3C. Marine Protected Areas

#### Background

A Marine Protected Area (MPA) is defined by the International Union for the Conservation of Nature (IUCN) to be “*Any area of intertidal or subtidal terrain, together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment*”. The Government of Indonesia already has a regulation for designing MPA based on Government Regulation No.60 of 2007 on Conservation of Fish Resources which states that “*the conservation of fish resources is the protection, preservation and utilization of fish resources, including ecosystem types and genetics to ensure the existence, availability and continuity while maintaining and improving quality and diversity of fish resources*”. In the Indonesian context, MPAs are areas in In the Indonesian context, MPAs are areas in marine coastal and small islands which have been protected and managed by a zoning system, to support sustainable fisheries and environment management (Setyawati 2014)<sup>5</sup>. MPAs must also be defined by a supporting policy.

MPAs in Indonesia are classified into the core zone, utilization zone, sustainable fisheries zone, and other zones. MPAs are tools for protecting and preserving marine biodiversity but they serve other purpose as well including support sustainable fisheries, marine ecotourism, and other uses to support coastal community welfare. Some MPAs are declared at national level by two Ministries:

<sup>5</sup> Setyawati. 2014.. Managing marine protected areas in Indonesia. J. Mar. Biol. Ass. India, 56 (1), 13-18, January-June 201

Ministry of Marine Affairs and Fisheries (MMAF) and the Ministry of Environment and Fisheries (MOEF).

At the "Conference of the Parties to the Convention on Biological Diversity (COP - CBD)" held in 2006 in Brazil, then Indonesia President Susilo Bambang Yudhoyono declared that the country commits to establishing and managing MPAs covering 10 million hectares by 2010. This commitment was later reaffirmed at the World Ocean Conference 2009 in Manado, only this time the target size became 20 million ha by 2020. To date Indonesia has attained 17.9 million hectares of the target and is well underway in achieving its 2020 target.

At the national level, the MMAF is the main government agency tasked with MPA management. One of MMAF's 7 pillars of development is "optimizing marine spatial management, conservation, and biodiversity". Using the framework developed by the MMAF, an effective MPA management program consists of both direct and supporting components. Some of the direct interventions include **data collection and analysis** (monitoring of habitat, status of endangered and commercial fish species, socio economic parameters, and carrying capacity of ecosystems); **institutional strengthening** (integrated management, vessel monitoring and border patrols, monitoring of invasive species); **establishment of MPA network, community participation, rehabilitation including restocking programs, and provision of infrastructure**. Meanwhile, the supporting components include business planning, provision of facilities and infrastructure, community development, civil society / community organizations strengthening and engagement, sustainable financing, technical assistance, and promotions and investments.

## Status

By end of 2016, there were a total of 165 MPAs in Indonesia of which 133 the MMAF and local governments while the balance of 32 MPAs have been established by the Ministry of Environment and Forestry (MOEF). More than 90% of the MPAs designated by the MMAF were established with, and managed by local governments. The remainder are marine parks and nature reserves. Meanwhile, the MPAs under the MOEF are marine / ecotourism parks, marine national parks, marine reserves, and wildlife reserves. In terms of hectareage, the MPAs under MMAF and local governments total 13.3 million hectares while the area managed under the MOEF amounted to 4.7 million hectares (see also Figure 2).

Evaluating the Management Effectiveness of Aquatic, Coasts, And Small Islands Conservation Areas (E-KKP3K) that have been gazetted by Decree of Director General of Marine, Coasts, and Small Islands Number Kep. 44/KP3K/2012 contains technical guidelines used for evaluating the management effectiveness and sustainability of MPA. This manual is expected to be used by policy makers

as an instrument for evaluating the performance of marine, coast and small islands conservation areas in Indonesia, and is a tool for establishing development priorities for the effective management of MPAs. Application of this tool suggests that most MPAs in Indonesia are only in the initiation and establishment level while virtually none has attained the “gold standard” level which is a sustainably managed MPA.

Aside from national level MPAs, transboundary MPAs and/or MPA networks involving other CTI member states are also being planned including an MPA within SSME Seascape between Indonesia, Malaysia and Philippines network for sea turtles. Establishment of said network for sea turtles would allow a joint approach to address IUU fishing, sharing of information, and joint monitoring and surveillance activities. The Sulu Sulawesi Marine ecoregion is seen as a platform for collaboration for the MPA network on sea turtles.



**Figure 2. Types and areal coverage of marine protected areas in Indonesia**

## Policy Framework

The current Long-Term National Development Plan (2004-2024) and the National Medium-Term Development Plans (2015-2019) (*Rencana Pembangunan Jangka Menengah Nasional* (RP JMN 2015-2019) have mainstreamed the principles of sustainable development in national development policies and programs.

Particularly for marine, coastal and fisheries sector, Indonesia's policies have been set up to meet the goal of improvement in fisheries production to support food security, utilization of marine and coastal resources in an optimal way, and conservation for marine and coastal ecosystems.

With respect to conservation and coastal and fisheries management, the relevant policies are Indonesia's Law No. 31 year 2004 on Fisheries and its amendment (Law No. 45 year 2009), Law No. 27 year 2007 on Management of Coastal and Small Islands areas and its amendment (Law No. 1 year 2014), and Government Regulation No. 60 year 2007 on Fisheries Resource Conservation also adopt the concept of sustainable use. Act No. 31 of 2004 on Fisheries as amended by Act No. 45 of 2009 states that fish resources conservation are needed to guarantee the existence, stock and continuity of fishery resources, including their ecosystems, species and genetics. The government can establish a site as a conservation area, in the form of aquatic nature reserve, national water park, water recreation park, and/or fishery reserve.

Government Regulation No. 60 of 2007 on Fishery Resources Conservation regulates three conservation activities: ecosystem conservation, conservation of fish species, and conservation of fish genetics. Ecosystem conservation consists of the ocean, seagrass beds, coral reefs, mangroves, estuaries, coastal swamps, rivers, lakes, reservoirs, ponds, and artificial aquatic ecosystems. Conservation of fish species is intended to protect endangered fish species, maintain fish species diversity, preserve the balance and stability of ecosystems, and utilize fishery resources sustainably. Conservation of fish genetics requires maintenance, breeding, research and preservation of genetic resources. This regulation is followed by Decree of the Minister of Marine Affairs and Fisheries No. 30 of 2010 that regulates plans for management and zonation of MPAs, and Decree of the Minister of Marine Affairs and Fisheries No. 17 of 2008 that regulates protected areas in coastal and small islands areas.

Central also to MPA management are policies on decentralization, notably Act No. 32 (2004) which specifies the power of the regional government and ensures financial balance between national and regional governments. In 2014, Act No. 23 (2014) redefines intra-governmental relations that includes fisheries and MPA management. Also viewed as attempts towards "recentralization", Act 23 transfers authority for fisheries management (as well as other natural resources) to the provinces, with the governor acting as a representative of national government. Further guidance and discussions on how this policy will affect MPA management is ongoing.

## Issues

Ruchimat et al (2012)<sup>6</sup> summarizes the main issues pertaining to MPAs in Indonesia, as follows: lack of infrastructure and equipment, inadequate human

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<sup>6</sup> Ruchimat, T., R. Basuki and Suraji. 2012. Recognizing the potential of Indonesia's marine, coastal, and

resource capacity, inadequate management plans and lack of financing support. Other challenges include commitments of local governments and the transition towards changing jurisdictional assignments among levels of local governments brought about by the enactment of Law 23 (2014). At the site level, conflicts between and among various stakeholders such as local communities, conservationists, governments, services industries, visitors, and boat and fishing industries occur because of the desire to gain benefits from the MPA. For example, conflicts between fisheries, tourism development, and conservation are common. Tourism itself can also be a threat with respect to carrying capacity issues and man-made facilities, such as hotels, restaurants and other recreational infrastructure which may result to negative impacts on the environment. MPAs may also function as closed areas thus incurring the ire of local fishers.

**Target #1: Region-Wide Coral Triangle MPA System (CTMPAS) In Place And Fully Functional**

Action 1. Establish and strengthen national system (grand strategy) of Marine Protected Areas (By 2020)

Action 2. Establish and strengthen transboundary protected areas and collaboration between neighboring protected areas across national boundaries (By 2020)

Action 3. Improve MPA planning and management that address threats and involving community and related stakeholders (By 2020)

Action 4. Provide an enabling policy for sustainable MPA management (such as sustainable financing) (By 2020)

Action 5. Build capacity and strengthen institution for the planning, establishment and management of MPA (By 2020)

Action 6. Strengthen communication, education and public awareness on MPA (By 2020)

Action 7. Evaluate and improve effective management of national MPA systems (By 2020)

### **Box 3. Targets and actions for goal 3, Marine protected areas**

#### **NPOA Actions and Summary Costs**

Goal 3 has only one target but seven actions (Box 3). Action 1 targets the establishment and strengthening of a national system of MPAs by 2020 and

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small islands protected areas: Profiles of 76 marine, coastal, and small islands protected areas.  
 Jakarta:Ministry of Marine Affairs and Fisheries of the Republic of Indonesia, Marine Protected Areas Governance and USAID.

identifies the locations in Fishing Management Areas (WPP) as follows: North Sulawesi (WPP 716), South East Maluku (WPP 715), Maluku (WPP 715), North Maluku (WPP 715), West Papua (WPP 715), West Kalimantan (WPP 711). Thereafter, an MPA policy shall be prepared specifying a Management unit, Zoning plan, Ministerial Decree of MPA Enactment.

MPA networks are planned for West Sumatra, Kepulauan Riau, Lesser Sunda, Bird Head Seascape. Aside from consultations and development of policy, the MPA network initiative will require connectivity studies, integrating data and status of the management effectiveness of MPAs and MPA Networks into the National System Database for all 32 provinces. Lastly, conduct knowledge sharing on MPA and MPA networks at regional and global events including publications and attendance to conferences and workshops. All these activities are envisioned for Action 2.

The core element of Action 3 is improvement in MPA planning and management and threat reduction. Threat reduction is to be achieved directly through effective enforcement and deployment of surveillance assets but also through participation of local communities to ensure adherence to the objectives of MPA. Addressing waste management is also seen as contributing to Action 3. Management effectiveness, sustainable financing, long term planning are some of the key activities within Action 4. Meanwhile Action 5 focuses on capacity building that includes development of training modules for MPA staff (sustainable tourism, sustainable fisheries, monitoring and evaluation, data base management), improved capacities of national and district staff to implement and monitor management effectiveness tools, and convene national MPA exchanges – following the model set by regional MPA exchanges. The long term MPA development strategy from 2020-2030 will identify new MPAs in the outmost islands and will be formalized through Ministerial decree. Action 6 focuses on national campaigns, exchanging lessons learned while Action 7 ensures management effectiveness. Thus, parameters that define successful MPA will be monitored including biophysical parameters, as well as socioeconomic and governance aspects. Likewise, a recognition program (E - KKP3K Awards) for sustainably managed MPAs will be launched on a biennial basis. This will be implemented in 32 Provincial MPAs across the country.

Almost USD 40 million is required from 2017 to 2020 to implement all actions identified under Goal 3 (Table 4). Of the 40 million estimated, almost half is proposed for data gathering and assessment – signifying the huge amount of information required in the establishment of MPAs. This includes biophysical studies, zonation mapping, databasing and GIS applications. As could be gleaned from the estimates, policy formulation and advocacy is another important cost component due to numerous local consultations, support to policy formulation at local level, and finally support for ministerial declaration of the MPA. With respect to sustainable financing, workshops are planned involving all 32 provinces, to map

out possible financing mechanisms. An MPA surveillance system is planned for 10 MPA locations and will require investments in enforcement assets.

**Table 4. Estimated costs for MPA targets**

Cost categories	Cost estimates in US Dollars			
	2017	2018	2019	2020
Assessments	4,830,398	4,777,878	4,777,931	4,547,006
Training and capacity building	1,969,645	1,873,647	1,966,422	2,182,956
Awareness raising	1,150,517	1,150,517	1,150,517	1,150,517
Policy formulation and advocacy	1,227,702	1,228,129	1,228,556	1,228,984
Infrastructure	459,661	460,036	460,411	460,785
Enforcement and surveillance	101,566	95,720	95,720	95,720
Financing	146,410	146,410	146,410	146,410
<b>TOTAL</b>	<b>9,885,899</b>	<b>9,732,338</b>	<b>9,825,967</b>	<b>9,812,378</b>

### 3D. Climate Change

#### Background

Indonesia is the world's largest archipelagic state with more than 17,500 islands and over 81,000 kilometers of coastline. 220 million Indonesians reside within 100 km of the coast, and of these over 150 million people rely on marine resources for their livelihoods (WRI, 2001). Indonesia's economy is highly dependent on activities in the coastal area and its oceans in sectors such as marine transportation, offshore industry, naval industry, resource extraction, fish cultivation and tourism which are engines of the Indonesian economy.

The CTI area in Indonesia encompasses 16 Provinces with coastal and marine areas namely Kalimantan Selatan, Kalimantan Timur, Kalimantan Utara, Nusa Tenggara Timur, Nusa Tenggara Barat, Bali, Sulawesi Selatan, Sulawesi Tenggara, Sulawesi Utara, Sulawesi Tengah, Gorontalo, Sulawesi Barat, Maluku, Maluku Utara, Papua Barat dan Papua. Indonesia has 12,827 coastal villages representing 15.6% of the total number villages in Indonesia. Of these total number of coastal villages, 8,537 villages or 66.5% of the total are located in the CTI area. Further, there are an estimated 986,142 fishermen or 83,761 households likely to be affected by weather variability with 415, 232 fishermen being completely dependent on the marine fisheries.

Climate Change impacts on natural resources and human well being in the CTI area is likely to manifest itself as extreme weather occurrences, sea level rise

events, coral bleaching events, and increase occurrence of cyclone. Zikra, Suntoyo and Lukijanto (2015)<sup>7</sup> monitored sea level rise in 4 stations including Medan, Ambon, Pemangkat, and Manokwari and observed that for all areas except Ambon, sea level rise is higher than the global average reported by International Panel on Climate Change in 2007 which is 2.5 millimeters annually (Note: the estimate for Manokwari is highest at 14.1 ml). Meanwhile, the same study monitored wave height and observed increasing trends in North Natuna, Banda Aceh, North Papua and South Jogjakarta with the range 0.38 – 0.75 cm/year. In a research paper prepared by WWF (undated), increasing sea surface temperatures may impact coral reef health, fish larval abundance, and primary productivity which, in turn,

The foregoing identification of activities and costing of the CTI NPOA highlights how Indonesia plans to address knowledge gaps to address and/or adapt to climate change.

## Status

Several climate adaptation programs and resources are currently being implemented. SIDIK or System Informasi Data Index Kerantan is an online information system that uses data from the Central Bureau for Statistics on 9 socio-economic variables which contribute to vulnerability profiles. SIDIK data is available for all villages in Indonesia and is maintained by the Ministry of Environment and Forestry. Using these basic socio economic information, biophysical layers pertaining to particular climate attributes can be overlapped in order to have a fuller assessment of vulnerabilities.

PROKLIM is a village-based incentive program which was started in 2012 and is based on Ministerial Regulation No. 19/2012 as amended by Ministerial Decree (Minister of Environment and Forestry ) No. 84/2016. Awards or recognition is given each year for climate-proofed or climate-smart villages. Thus far, more than 900 villages (both coastal and non-coastal, and including smaller village units) have signified implementation of various adaptation and mitigation activities to the MOEF.

Coastal climate resilience village program or the Pengembangan Kawasan Pesisir Tangguh (PKPT) is currently located in 24 provinces, 47 districts and 141 villages.<sup>8</sup>

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<sup>7</sup> Zikra, M., Suntoyo, and Lukijanto. 2015. Climate change impacts on Indonesian coastal areas. *Procedia Earth and Planetary Science* 14 (2015) 57 – 63.

<sup>8</sup> Kab. Pulau Morotai (Maluku Utara), Kab. Maluku Tenggara (Maluku), Kab. Lombok Utara (NTB), Kab. Sumba Timur (NTT), Kab. Tanah Laut (Kalsel), Kab. Sambas, Kota Singkawang (Kalbar), Kab. Trenggalek, Kab. Gresik (Jatim), Kab. Pekalongan, Kab. Kebumen, Kab. Brebes (Jateng), Kab. Pandeglang (Banten), Kab. Bangka Barat (Babel), Kab. Aceh Barat (Aceh), Kab. Agam (Sumbar), Kab. Luwu Utara (Sulsel), Kota Kendari (Sultra), Kab. Gorontalo Utara (Gorontalo), Kab. Kotawaringin Timur (Kalteng), Kab. Kep. Meranti (Riau), Kab. Tanjung Jabung Barat (Jambi), Kab. Garut, Kab. Pangandaran (Jabar), Kota Bitung (Sulut).

The purpose of the program is to reduce the vulnerability and increase resilience of villages within a cycle of 3 years. In the first year, the Ministry of Fisheries shall assist in the development of the coastal resilience plan. Second year is program implementation which may include various types of infrastructure such as evacuation routes, coastal protection, water supply system and early warning devices. This program focuses on 5 main aspects: human resources, business development, coastal resources, infrastructure/environment, and disaster awareness and climate change adaptation.

Another program currently implemented is the “*Ayo tumbuhkan mangrove*” or the Let’s Plant Mangroves program which recognizes the importance of mangroves in protecting the coastal area against storm surge. MMAF also supports a coastal education platform.

### Policy Framework

There are various policies which Indonesia can draw upon to support climate action. First, are efforts related to the ratification of the Paris Agreement. In line with the Paris Agreement, is the reformulation of the National Action Plan for Climate Change Adaptation (RAN API) covering the period 2015-2025 as spearheaded by the Planning Agency (BAPPENAS). The RAN API’s overarching framework is sustainable development adaptive to climate change which is ensured through economic resilience, livelihood resilience, and resilience of ecosystem services. Climate Change Adaptation actions and programs developed and implemented in Indonesia should be fully integrated into development plans at various governance levels as well as sectoral development plans to ensure budget allocation. One of these priority sectors is the marine and fisheries sector.

Ministerial Regulation No. 33/2016 on the *Formulation of Action Plan for Climate Change Adaptation (Rencana Adaptasi Perubahan Klima)* recognizes the nestedness of various planning levels from national to sectoral to local initiatives. The same regulation guides the preparation of climate adaptation plans and should be applied to both state and non-state actors. The four step process is as follows:

1. Identify scope of the area /specific sectors and formulating Problem Statements of CCA impacts
2. Vulnerability and Risk Assessment
3. Formulating adaptation options
4. Define the chosen adaptation options and mainstream process of Adaptation options into Development plan (especially local plans)

Lastly, the CTI working group on Climate Change was established by Ministerial Regulation No. 60/2016 while the NCC for the CTI was established via Presidential Decree No.85 of 2015. The working group on climate change is vested with the following functions

- Develop recommendations for the dimensions of marine and fisheries in climate change at the UNFCCC meetings and other meetings related to environmental issues or climate change that will be attended by the Delegation of the Republic of Indonesia;
- Develop materials and recommendations of marine and fisheries issues to report Intended Nationally Determined Contribution (INDC) Indonesia;
- Formulate position / policy of the Government of Indonesia in every meeting of the UNFCCC and the meeting of the Parties (Conference of Party / COP) of the UNFCCC and other meetings related to the mainstreaming dimensions of marine and fisheries in climate change; and
- Perform analysis and make a recommendation as well as the coordination of follow-up to the results of meeting / UNFCCC negotiations and meetings / negotiations and other related environmental issues or climate change.

### **NPOA Actions and Summary Costs**

Goal 4 has two targets and six actions (Box 4). Target 1 is the preparation and implementation of a climate adaptation plan while Target 2 aims to set up a network of “centres of excellence” on climate adaptation. Actions identified for Target 1 include vulnerability mapping which requires oceanographic surveys (South and Southeast Sulawesi), mangrove surveys (Bali and Nusa Tenggara), and ecosystem mapping of small islands Kepulauan Karimata. Meanwhile, coastal zone mapping will be done in 7 provinces including Maluku, North Maluku, Bangka Belitung, Lampung, South Sumatra, Kep. Riau, and Central Java. A mapping of natural resource potential is planned for Southeast Maluku while research on ocean dynamics and primary production related to fisheries is planned for Bali Strait and Banda Sea. Coastal flood mapping has almost been completed for 11 provinces and 50 districts. Most of the mapping activities are to be implemented by the Indonesian Geospatial Information Agency or Badan Informasi Geospasial (BIG) while the MMAF shall be in charge of research on the status of marine environment and ocean dynamics/primary productivity.

General guidelines on adaptation measures shall utilize existing data on vulnerability assessments and national marine climate data. Mainstreaming policy on maritime issues in global change negotiation agenda was also highlighted by the KEMENKO. There are further plans to mainstream Environment and Forestry Ministerial Regulation No. P.33/MenLHK/Setjen/Kum.1/3/2016 especially at local level and as a basic tool in sites where climate programs are implemented, notably PKPT. Blue carbon and carbon budgeting is also a particular area of interest of the KEMENKO.

Formulation of early warning systems shall make use of time series observations on seasonal shifts and characteristics particularly in Makassar Strait, Lombok Strait, Karimata Strait, south of Java The CTI actions shall also contribute to A national policy on disaster management. Further research on changes in sea surface temperature, wave heights, acidification, land use and the roles of coral

reefs and mangroves in adaptation as well as the impacts of climate change on these ecosystems shall be accomplished. Meanwhile, potential conservation/restoration methods shall be applied such as the “Bioreeftek” in Bali and Nusa Tenggara.

Various capacity building programs have also been identified including trainings on Vulnerability Assessment (using Local Early Adaptation Plan (LEAP) developed under CTI auspices); improved communication skills on climate change, and disaster preparedness. Among some adaptation trainings are those of seaweed farming and health and sanitation systems. Formal education dispensed by schools in 34 provinces shall also be identified.

Further enhancement of the Coastal Climate Resilient Village /Area (PKPT) is also planned. The enhancement will include a strict application of the 4-step guidance in the development of the climate adaptation plan as a basis for securing funding for livelihood and/or infrastructure in provincial and district governments.

With regards establishment of networked centers of excellence, there is recognition that many institutions are involved in climate issues thus having a clear option to appoint one research institution vis-à-vis creating a new one. Further discussions between MMAF and MOEF are required. Meanwhile, a research agenda focusing on valuation of ecosystem services, carbon accounting, and waste management practices has been determined.

Goal 4 will require USD 3.8 million for targets 1 and 2 covering a period of five years, i.e., from 2016-2020 (Table 5). Almost 50% comprise infrastructure costs associated with the PKPT Program in 25 sites. Policy formulation comprise the second highest percentage of costs. All institutional strengthening, including selection of schools and networking of center of excellence, implementation and

#### **Box 4. Targets and actions for Goal 4, Climate Change**

**Target 1. Region-Wide Early Action Climate Adaptation Plan for the Near-Shore Marine and Coastal Environment Developed and Implemented**

- Identify and map Indonesian CT areas on their susceptibility levels on climate change impacts and link the information to biodiversity and socioeconomic value
- Produce national general guideline on adaptation measures on the potential of climate change impacts on marine and coastal ecosystem and communities based on synthesis and understanding of available science, information and knowledge
- Formulate early warning system and response to weather variability, temperature variability and to changes storm phenomenon, including in coral bleaching and formulate immediate strategy or response on potential impacts of climate change on fishermen, such as impact of changes in weather pattern and season, sea temperature and storm
- Conduct and develop strategic research that provides information critical to reducing key threats to coral reef ecosystems

**Target 2. Networked National Centers of Excellence on Climate Change Adaptation for Marine and Coastal Environments are Established and in Full Operation**

- Develop and conduct various researches on climate change impact to biodiversity and socioeconomic, cost and benefit of actions and inactions and feed the result into policy processes
- Develop National Center of Excellence on Climate Change Adaptation for Marine and Coastal Ecosystems

mainstreaming of guidelines, formulation of plans are all included in this category.

**Table 5. Estimated costs for Climate targets**

Sub-Categories	Target 1, 2016-2020	Target 2, 2016-2020	TOTAL, T1 and T2
Assessments	653,140.83	51,352.87	704,493.70
Training and capacity building	102,863.14		102,863.14
Awareness raising	-		-
Policy formulation and advocacy	1,063,348.82		1,063,348.82
Infrastructure	1,968,895.22		1,968,895.22
Enforcement and surveillance	-		-
Financing	-		-
<b>TOTAL</b>	<b>3,788,248.01</b>	<b>51,352.87</b>	<b>3,839,600.88</b>

### 3E. Species

#### Background

Indonesia is one of the world's megadiverse countries. Indonesia hosts six out of seven sea turtles of the world. They can be found throughout Indonesia: Green sea turtle (*Chelonia mydas*), Hawksbill sea turtle (*Eretmochelys imbricate*), Olive Ridley sea turtle (*Lepidochelys olivacea*), Leatherback sea turtle (*Dermochelys coriacea*), Loggerhead sea turtle (*Carreta carreta*), and Flatback sea turtle (*Natator depressa*). From these species, only Flatback sea turtles do not lay their eggs in Indonesia coastal waters.

There are at least 221 species of sharks and rays found in Indonesian waters. However, current information shows that almost all sharks and rays of economic value are facing extinction. Based on the study from various literatures and research up until 2010, at least 221 species of sharks and rays have been found in Indonesian waters, which consists of 117 shark species, 3 ghost shark species, and 101 ray species from 44 families (Fahmi, 2010; 2011; Allen & Erdman, 2012). From the 44 cartilaginous fish families, only around 26 shark species from 10 genus and 6 families have high economic value from its fin trade in national and international market.

Indonesian waters serve as an important migratory area for over 30 species of marine mammals, especially in the eastern parts of Indonesia. More than one third of all known whales and dolphin species (collectively called *cetaceans*) can be found in the Indonesian seas, including the rare and endangered Blue Whale (*Balaenoptera musculus*). The main threats to these species include by-catch, stranding, poaching, and the destruction of their marine habitat.

NPOAs for sharks and sea turtles have been completed while that of marine mammals is undergoing finalization. These NPOAs reflect the urgency for action with respect to threatened species conservation. The threats to marine species are difficult to perceive since marine biota are not as visible as animals on land. Unfortunately, marine creatures are equally, if not more, vulnerable to problems such as habitat destruction and overexploitation.

The information contained in this summary report contain summary information from the NPOA for Sharks and the NPOA for Sea Turtles. The NPOA for marine mammals has not yet been finalized; thus, various researches on marine mammals have been utilized<sup>9</sup>.

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<sup>9</sup> Dharmadi and Wiadnyana (2011). Status and research activities on marine mammals in Indonesia and Report of the Third Southeast Asian Marine Mammal Symposium (2015).

## Status

From 2005 to 2011, production of six species of sharks averaged about 50,000 tons per year. Accordingly, sharks can be fished in all of Indonesia waters but areas where economic value of sharks is relatively high have been identified, including: Sibolga, North Sumatera; Muara Baru, Jakarta; Muara Angke, Jakarta; Pelabuhanratu, West Java; Cilacap, Central Java; Prigi, East Java; urabaya, East Java; Benoa, Bali; and Tanjung Luar, West Nusa Tenggara. In the national fishery statistics data, there are at least five fishing gears that can have sharks as bycatch, namely tuna longline, set bottom longline, set longline, drift longline, and drift gillnet. From a socio-economic point of view, shark fishery provides economic benefits to direct business actors such as the fishermen and the processors. Besides providing new opportunities for processing or crafts (e.g. ray and shark leather) industries, shark exploitation also provide the opportunity for complimentary businesses, such as marketing and export. Various work opportunities that are currently developing along with the development of shark fishery among others are fishermen, fishing gear providers, retailers, collectors, and exporters.

Sea turtles (meat and their eggs) have been used and eaten for delicacies for centuries. Advanced technology and increasing human population hastens the exploitation of sea turtles. Humans target sea turtle population in the wild due to its meat, egg and carapace utilization (especially hawksbill turtle). At the peak of its export in 1978, more than 200,000 sea turtles have found their way to Japan, Singapore, Korea and Hongkong. However, after the government acceded to CITES, trade stopped in 1993 although illegal shipments still occur. Even though sea turtles are classified into protected marine life by law, traditional use are still widespread. Utilization of eggs and meat still occurs for cultural interests, religious or for the subsistence benefit of people at coastal and small islands.

## Policy Framework

The policy framework for regulation of sharks, sea turtles, and marine mammals includes both international and national policies. For sharks, the relevant international conventions which Indonesia has ratified include the Indian Ocean Tuna Commission, providing for specific resolutions related to the protection of sharks in association with fishery management. Another convention is the Western and Central Pacific Fisheries Commission (that stipulates for all signatory countries to implement the International Plan of Action for sharks and submit an annual report on blue shark (*Prionace glauca*), silky shark (*Carcharhinus falciformis*), oceanic whitetip shark (*Carcharhinus longimanus*), mako sharks (*Isurus spp.*) and thresher sharks (*Alopias spp.*), including

the catch that are kept and disposed, and research and development activities conducted to reduce shark catch. Lastly, the government is also party to the Convention on the International Trade on Endangered Species (CITES) which requires a listing of species that are 1) threatened with extinction; 2) imminent extinction; 3) protected in one particular country.

At the national level, the relevant policies are:

- Law Number 31/2004 on Fisheries as amended by Law Number 45/2009, Article 7 Paragraph (1) stated that in order to manage fish resources, Minister sets a minimum size or weight of fish that can be caught in marine conservation areas and also regulates protected fish species. The points of these arrangements are one of the management instruments that can be done to ensure the existence, availability and sustainable utilization of fish resources, including sharks.
- Ministerial Regulation of Marine Affairs and Fisheries Regulation Number 12/2012 regulates fishing enterprises operating in the high seas. In particular, Article 39 stated that *“all fishing vessels that fish in the sea and get bycatch that are ecologically related species to tuna fisheries such as sharks, seabirds, sea turtles, marine mammals including whale and thresher shark must undertake conservation measures.”*
- Ministerial Regulation of Marine Affairs and Fisheries Number 57/PERMEN-KP/2014 is the amendment of Ministerial Regulation No. 26/2013 that regulates capture fisheries business within Fisheries Management Areas (FMAs) in Indonesia. Article 73 stated the obligations concerning conservation measures and fish resource management as follows: *All fishing vessels with fishing licence (SIPI) in Indonesia’s FMAs must take conservation measures towards particular species that are ecologically related to tuna, as determined by particular species, and including bycatch such as thresher sharks, sea turtles and sea mammals.*
- Ministerial Decree of Marine Affairs and Fisheries Number 18/KEPMEN-KP/2013 The Ministerial Decree of Marine Affairs and Fisheries Number 18/KEPMEN-KP/2013 determined the full protection status of whale shark (*Rhincodon typus*). According to this ministerial decree, whale shark is determined as a fully protected fish species and the extractive use of this species and its parts is prohibited by law.
- The Ministerial Regulation of Marine Affairs and Fisheries Number 59/PERMEN-KP/2014 concerning the export ban of all parts of oceanic white tip sharks (*Carcharhinus longimanus*) and hammerhead sharks (*Sphyrna* spp.) from Indonesia. The listing of Oceanic white tip sharks and hammerhead sharks in CITES Appendix II in 2013 indicated that the global population of these species have been seriously threatened, which mostly caused by high demand in international trade.
- Other policies refer to observer programs that enable monitoring of bycatch species.

All species of sea turtles are protected. In Indonesia, this protection is regulated under Law No. 5/1990, Law No. 31/2004, and Government regulation No. 7 and 8/1999.

Internationally, sea turtles are classified as Appendix 1 CITES, which means sea turtles are threatened with extinction and their trading is illegal. In addition, the government also established protection areas where sea turtles lay their eggs. CITES also covers prohibitions against commercial export and import of all species of cetaceans and dugongs along with derivative products. Government Decree No. 7/1999 has protected all species of cetaceans and sirenian, which means that the trade of those species cannot be allowed in Indonesia. Government Decree No 8/1999 meanwhile permits only traditional hunting and limited trade, i.e., barter.

## Issues

Shark finning is a prominent issue which invites international censure mainly because the practice is considered cruel and a waste of resources. Fishers continue the practice due to economic reasons although there are apparently two groups of fishers who exploit the shark fishery: small fishers and large fishers, with the latter identified as the main players in shark finning. Major issues in shark management include weak law enforcement at the grassroots level borne by the lack of infrastructure and human resources. Identification of sharks (and rays) still faces a high constraint mainly due to human resources capacity. Data accuracy is also a challenge especially since shark landings occur in small fishports where enumerators / competent researchers are absent. Though shark is not the target of fishing, small-size sharks (immature) are often caught as bycatch. Lastly, studies on sharks and rays are still limited. Low take up by researchers and low budgets contribute to the lack of accurate information especially since sharks, being a migratory species, would require consistent time series information.

Sea turtle by-catch is also a major issue associated with tuna long line, gillnets and trawl. Collection of eggs is outlawed but it occurs in all nesting beaches that are not properly maintained, such as Beach Pangumbahan-West Java, Tambelan-Riau Islands, Pesisir Selatan-West Sumatera. Local trade in sea turtle eggs is prevalent but also is smuggled to other countries especially in the area of West Kalimantan and Malaysia. Turtle poaching is done by both local and foreign fishers (identified as coming from Hainan). In Bali, sea turtles are essential elements of religious ceremonies; thus, while respect for religious practices is maintained there are also efforts to suggest that the usage be minimized. Lastly, climate change may affect populations of sea turtles due to increased temperatures in nests, thereby altering the sexual determination of turtles.

Cetaceans are hunted by the people from the small villages in the east part of Indonesia. The activities that are allowed with marine mammals are only traditional hunting, and eco-tourism for whale and dolphin watching in Bali Island. The traditional whaling occurs only in Lamalera, Lembata Island and Lamakera, Solor Island, Nusa Tenggara Timur, Eastern Indonesia. Other issues include risk of net entanglements of blue whales, sperm whales and unidentified small baleen whales such as observed in Solor-Alor. Small cetaceans may also be taken as targeted and/or by-catch in significant numbers throughout the Solor-Alor region. Unregulated in-situ tourism such as dolphin-watching is not yet regulated by the government. It can contribute significantly to local economies, as in Lovina

(Mustika 2011) which may incentivize further growth of dolphin-watching operations.

## **NPOA Actions and Summary Costs**

Goal 5 aims to improve Status of Sharks, Sea Turtles and Marine Mammals and comprises 4 actions (Box 5). Action 1 is the basis for all future actions which comprise the preparation / implementation of the national plan of action for sharks, sea turtles, and marine mammals. Shark monitoring will be done in Cilacap, Tanjung Luar, and Sangihe while a database on sea turtles shall be prepared at a national level. Assessment of sea turtle bycatch and also adoption trial in mitigation technologies for 3 major fishing gear (longline, gill net, and trawl) shall be done on a nationwide basis.

National regulation on shark conservation shall be socialized through a series of consultations in selected locations, i.e., Cilacap, Sorong, Tanjung Luar, Surabaya, Aceh, Denpasar, Pontianak. This shall be further supported by national policy at ministerial level but also reinforced through district regulations. Fishing gear technology shall be developed and tested with fishers with the aim of reducing shark by-catch. This will require several technology trials and a process of socialization if successful. Discussions are ongoing towards appointment of an in-port shark monitoring/database focal person.

Since the NPOA for sea turtles has already been finalized, the next step would be the drafting of a Ministerial Regulation. Costs associated with this comprise consultations and drafting of the regulation. Implementation of the NPOA includes enforcement through composite teams consisting of KKP, marine police, and Pokwasmas, as well as controlling the impact of customary law on sea turtles. Monitoring of sea turtle nesting habitats will proceed in 15 locations.

In the case of marine mammals, the priority is to complete the action plan for dugongs and cetaceans, capacity building for marine mammals stranding, evacuation and disposal. A “first responder network” is to be established via a national workshop and policy support recognizing the network. A code of conduct defining eco-tourism based interactions with marine mammals is planned together with code of conduct for marine mammals in migratory corridors. Similar to sea turtles, some form of control for customary use for cetaceans (such as in Lamakera) is envisioned.

Over USD 1.07 million is required for full implementation of Goal 5 with studies, assessment, data collection comprising more than 40%. The significant costs for studies and data gathering reflect the lack of accurate data on endangered species. Awareness raising contributes a fourth of the costs with enforcement and surveillance contributing 15% (Table 6).

### Box 5: Target and Actions for Goal 5 Improved Status of Sharks, Sea Turtles and Marine Mammals

Action 1. Assess Species Status by supporting on going and new assessment programs (By 2020)  
 Action 2. Completed and Implemented Region Wide Sharks Conservation Action Plan (By 2020).  
 Action 3. Completed and Implemented Region Sea Turtles Conservation Action Plan (By 2020).  
 Action 4. Completed and Implemented Region Wide Marine Mammals Conservation Action Plan (By 2020).

**Table 6. Estimated costs for Species targets**

	Annual Cost estimates in US Dollars				
Cost Sub Categories	2017	2018	2019	2020	TOTAL
Assessments	149434.12	119056.36	101416.58	101416.58	471323.64
Training and capacity building	9,563.78	8,634.39	25,363.51	-	43561.68
Awareness raising	68145.71	68145.71	68145.71	68145.71	272582.82
Policy formulation and advocacy	80913.66	33334.58	2428.42	2428.42	119105.08
Infrastructure	-	-	-	-	-
Enforcement and surveillance	43741.57	43741.57	43741.57	32603.81	163828.51
Financing	-	-	-	-	-
<b>TOTAL</b>	<b>351798.83</b>	<b>272912.61</b>	<b>241095.79</b>	<b>204594.51</b>	<b>1070401.74</b>

## 4. Summary and Conclusions

A estimate of USD 74 million is required for the full implementation of the five goals (42 actions) of the Indonesia CTI National Plan of Action over a period of 4 years, from 2017 to 2020. Half of the costs is accounted for by Goal 3, MPA with the bulk

of the costs required for biophysical assessments necessary for the establishment of new MPAs. Part of the costs include actions that ensure improved management effectiveness of existing MPAs and features an entire package of capacity building, policy support, awareness raising, and MPA infrastructure.

Fisheries rank number 2, requiring 24% of total costs. Bulk of costs for fisheries comprise capacity building and enforcement costs. Capacity building is required for better awareness and implementation of the EAFM concept but also for implementation of the COASTFISH program which provide for development of small fishery businesses, improved post-harvest, and partnerships with private sector. Meanwhile, enforcement and surveillance cost is required to address IUU fishing in all FMAs.

Using the cost sub-categories, almost 40% is required for assessments and studies. All goals require further studies indicating the vast knowledge required to address all the issues that plague Indonesia's coastal and fisheries resources and habitats. Capacity building is also an important cost category given the multiple levels and types of stakeholders in the sector spanning national to local governments. Capacity building is required to operationalize concepts such as EAFM, seascapes and marine spatial planning, but also to implement policies.

The costing exercise supported by ADB through RETA 7813 was very timely given that the NPOA is also being updated. Partnerships between the MMAF and the Coordinating Ministry for Maritime Affairs ensure seamless coordination but also strong policy support for the implementation of the NPOA. The costing exercise is a valuable tool to enable informed budgeting decisions within the government as well as allowing government to seek partners interested and able to support specific actions outlined in the NPOA.

Table 7. Summary cost estimates for five goals of the Indonesia CTI NPOA, totals for 2017-2020, in US dollars.

	Seascapes		EAFM				MPA	Climate Change		Species	TOTAL
Cost Categories	Target 1	Target 2	Target 1	Target 2	Target 3	Target 4	Target 1	Target 1	Target 2	Target 1	
Assessments	4,941,538	2,429,642	-	-	119,922	1,686	18,933,212	653,141	51,353	471,324	27,601,818
Training and capacity building	86,943	127,417	7,773,723	738,900	7,495	-	7,992,670	102,863	-	43,562	16,873,573
Awareness raising	-	2,998	-	-	-	-	4,602,069	-	-	272,583	4,877,650
Policy formulation and advocacy	4,241,688	-	385,081	-	-	1,686	4,913,371	1,063,349	-	119,105	10,724,281
Infrastructure	-	-	-	-	-	-	1,840,893	1,968,895	-	-	3,809,789
Enforcement and surveillance	-	-	7,283,526	-	-	-	388,727	-	-	163,829	7,836,082
Financing	-	7,495	-	1,602,024	127,417	-	585,639	-	-	-	2,322,575
<b>TOTAL</b>	<b>9,270,170</b>	<b>2,567,552</b>	<b>15,442,329</b>	<b>2,340,923</b>	<b>254,834</b>	<b>3,373</b>	<b>39,256,582</b>	<b>3,788,248</b>	<b>51,353</b>	<b>1,070,402</b>	<b>74,045,767</b>

## Annex 1. NPOA (2016-2020) Preparation Activities<sup>10</sup>

A Series of National Working Group (WG) Meetings as well as CTI-CFF Indonesia NCC Meetings have already conducted to support the preparation of the Indonesia NPOA 2016-2020, with highlights, as follows:

<b>NCC Meetings</b>	
CTI-CFF Indonesia NCC Meeting, on 27 September 2016	<ul style="list-style-type: none"> <li>This meeting was held in Aryaduta Jakarta Hotel, lead by Executive Secretary and Vice of Executive Secretary also attended by all of Indonesia NCC members.</li> <li>Executive Secretary and Vice of Executive Secretary gave their directions to expedite the finalization of NPOA with better coordination among all WG</li> </ul>
CTI-CFF Indonesia NCC Meeting in Jakarta, on 11 and 14 January 2017	<ul style="list-style-type: none"> <li>Both meetings were held in MMAF Office in Jakarta lead by Ms. Sri Atmini, Vice Chair of Secretariat Coordinator and attended by all the WGs of Indonesia NCC. These meetings discussed the progress of NPOA drafting. At these meetings, she also gave direction and reiterate to expedite the finalization of NPOA accordingly.</li> </ul>
Coordination Meeting of Indonesia CTI-CFF NCC led by Coordinating Ministry for Maritime Affairs in Bogor, on 14 February 2017	<ul style="list-style-type: none"> <li>Chaired by Deputy of Natural Resources and Services, Coordinating Ministry of Maritime Affairs and attended by almost all of NCC members. Continued discussion on the progress of NPOA implementation in 2016 and NPOA drafting as well.</li> <li>Chair gave direction to finalize NPOA at the end of March 2017 to be subsequently enacted by Coordinating Minister for Maritime Affairs as Chair of National Committee of CTI-CFF Indonesia.</li> </ul>
Coordination Meeting of Indonesia CTI-CFF NCC lead by Coordinating Minister	<ul style="list-style-type: none"> <li>Coordinating Minister for Maritime Affairs chaired these two meetings which was</li> </ul>

<sup>10</sup> An initial version of this report was prepared by Mr. Imam Fitrianto

for Maritime Affairs in Jakarta, on 14 February and 9 March 2017	<p>attended by Indonesia NCC Executive Secretary, members of WG Coordinator and Executive Director of CTI-CFF Regional Secretariat.</p> <ul style="list-style-type: none"> <li>• His Excellency the Minister gave direction to improve the coordination among each of WGs of NCC and Regional Secretariat.</li> <li>• In this meeting, His Excellency the Minister proposed that Indonesia host the 2nd CTI-CFF Leaders Summit back to back with World Bank IMF Annual Meeting in October 2018 in Nusa Dua, Bali.</li> <li>• In addition, His Excellency the Minister also reminded member of WGs to finalize NPOA and translate it into Bahasa in order to ensure stakeholder can easily understand the content of NPOA for further implementation.</li> </ul>
NPOA Costing Workshop in Jakarta, in Jakarta, on 23-24 February 2017	<ul style="list-style-type: none"> <li>• Meeting was facilitated by ADB RETA 7813 and was the first costing meeting.</li> </ul>
<b>National Working Group Meetings</b>	
1. Climate Change Adaption WG Meeting in Ministry of Environment and Forestry, on 25 August 2016	
2. EAFM WG Meeting in Directorate General of Capture Fisheries, Ministry of Marine Affairs and Fisheries (MMAF), on 30 August 2016	
3. Marine Protected Areas WG Meeting in Directorate General of Marine Spatial Management of MMAF, on 20 September 2016	
4. Threatened Species WG Meeting in Directorate General of Marine Spatial Management of MMAF, on 21 September 2016	
5. Data and Information WG Meeting in LIPI, on 10 October 2016	
6. Food Security WG Meeting in Bappenas, in December 2016	
7. Seascapes WG Meeting in Jakarta, on 14 December 2016	
8. Capacity Building WG Meeting in Jakarta, in December 2016	